

Accessing e-Journals at the University of Parma: The Perspective of Art and Humanities Students and Academic Staff

Research proposal

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1. INTRODUCTION

One of the most challenging tasks for academic librarians involved in e-journal service implementation is to arrange an effective access to resources. Different strategies are currently adopted, several libraries following a traditional library-based approach, which emphasises the role of the library catalogue, while others looking at alternative systems of access. If the issue of organising electronic resources involves profession related questions such as the future of cataloguing or the integration of traditional and digital information resources, it is important not to forget that whatever method the library adopts it should effectively respond to identified user requirements.

The aim of this research is to explore the needs and behaviour of academic users towards locating and accessing e-journals. A case study will be conducted at the University of Parma Art and Humanities Faculty. The study will provide evidence of the characteristics of users' attitude in accessing full-text journals, of their perspectives and requirements. It will also offer information about the impact of discovering and access factors on e-journal service use.

Aims

- To identify user needs and behaviour towards discovering and accessing e-journals
- To examine the contextual variables influencing user attitude in accessing e-journals
- To assess the impact of awareness and access factors on e-journal use
- To interpret the above in terms of effective electronic service provision
- To provide evidence of the value of user studies for the delivery of effective electronic resource services

Objectives

- To explore the relevance of discovery and access in e-journal user studies
- To identify the available options for libraries to provide e-journal discovery and access
- To explore the user needs and expectations in this area
- To explore the barriers and experienced problems in accessing e-journals
- To evaluate the impact of access systems on the use of e-journal services
- To explore implications for librarians engaged in electronic services provision

Research questions

How can libraries develop a 'user-centred' system to provide e-journal awareness and access?

What are the needs and behaviour of faculty, researchers and students towards discovering and accessing e-journals?

How does the awareness and access system provided by the library influence e-journal use?

Does the librarian perception of effective access systems to e-journals differ from that of end-users?

2. BACKGROUND

2.1 The research on e-journal users

The international professional literature offers a large number of studies devoted to investigate user behaviour towards e-journals. This area has become more important since 1996, following the increasing availability of e-journals in the different academic disciplines. E-journal user studies have yielded the identification of several factors or variables affecting the user behaviour and influencing the use of e-journals, such as awareness and easy access, usefulness of the content, coverage of the service, navigation, usability, portability, and technology (Jenkins, C., 1997; Olsen, J., 1994; Rogers, S.A., 2001; Stewart, L., 1996; Woodward, H. et al. 1998). The most exhaustive study on e-journal users was realised between 1996 and 1998 by a group of UK universities and commercial publishers with the name of SuperJournal. For the purpose of the research, the use of 49 e-journals delivered via four subject clusters was studied through log file analysis, while a large amount of contextual data about user behaviour was collected through interviews, questionnaires and focus group meetings (Pullinger, D. and Baldwin, C., 1997). Analysis of such multiple data allowed the SuperJournal researchers to explain how obstacles and facilitators factors impact on individual users to form multidimensional patterns of use. In particular, they highlighted the role of individual factors, such as user status, discipline and individual habit with information management, and local factors, such as available technology, training and support, promotion, and availability of traditional library services.

The analysis of the professional literature has allowed the identification of a gap in e-journal user studies within the Italian academic context. This situation is quite surprising, if one considers the amount of library budgets annually allocated to this area by Italian universities and the efforts undertaken since 1998 to build cooperative policies for licensing e-journals (Giordano, T., 2000; Martellini, E., 1998). A great impulse towards evaluating the service from a user point of view should come from interlibrary consortia. As Tammaro (1999; 2000) suggests, consortia should extend their functions from acquiring electronic resources to new services, such as organising easy access, promoting integration among different types of resources and facilitating user access to electronic information. On the other hand, Giordano (2000; 2001) observes that only big consortia, with a strong centralised organisation and large financial resources, are able to manage these advanced functions. According to Giordano, this organisational development is difficult in Italy, because the country lacks a national policy to sustain access to electronic information and the tradition in cooperation, both at a local and at an institutional level, is very poor.

2.2 Discovering and accessing e-journals

Awareness and easy access are considered as the main factors influencing the success of e-journals, while the resources playing a key role in this area are library discovery systems and standard indexing and abstracting sources (Bishop, A.P., 1995; Fosmire, M. and Young, E., 2000; Harter, S.P. and Kim, H.J., 1996; Wyly, B.J., 1998). But what is more precisely the user perception of easy access? As user studies have shown, it is associated to several aspects, such as service availability at any time and from any location, speed of information delivery, availability of user-friendly interfaces and technologies, support from the library, navigation functionalities, IT infrastructures, and authentication processes (Bishop, A.P., 1995; Harter, S.P. and Kim, H. J., 1996; McKnight, C., 1997; Woodward, H. et al., 1998). The purpose of this research is not to investigate all those associated issues, its focus being on user needs and behaviour about locating and accessing e-journals through a discovery system, and on the implications for libraries engaged in organising electronic resources.

Several options are currently available to users for accessing e-articles from their desk. Based on a survey on ARL and non-ARL libraries, Shemberg and Grossman (1999) identify the following methods: a) searching an electronic index, finding a citation and being linked to the full text; b) searching an electronic index, finding a citation and

searching the library's OPAC; c) searching an e-journal web page; d) searching the OPAC.

Given that user preferences about methods for accessing e-journals seem to be different (Baldwin, C., 1999; Shemberg, M. and Grossman, C., 1999), several authors recommend maintaining multiple access routes and including e-journals in the online catalogues (Duranceau, E.F., 1995; Kling, R. and Covi, L., 1995; Woodward, H. and McKnight, C., 1995; Wyly, B.J., 1998). But access through the catalogue is not always seen as effective. One of the major criticisms is that currently most OPACs do not allow users to search e-journals separately from the rest of the materials and this can cause difficulties and failures especially to inexperienced users (Kiel and Summers, 2000). In order to overcome the catalogue weakness many libraries provide users with additional lists of e-journals accessible from the web page, or with specific online interfaces and databases (Chaney, E., Bulliard, C. and Christiansen, C., 1999; Knudson, F.L. et al., 1997; Moothart, T., 1996; Rich, L.A. and Rabine, J.L., 2001). However, with the continuous increase of on-line titles from a variety of providers, this position has recently been brought into question. For instance Kiel and Summers (2000) complain about the duplication of staff effort required for creating and maintaining multiple access methods to online journals, and suggest that it may be time to evaluate the efficacy and need for those various access points.

2.3 Organising e-journals and other electronic resources

Together with e-journals academic libraries are offering access to a wide range of electronic resources, such as bibliographic databases, networked CD-ROMs, e-books, and selected Internet resources. The problem of providing users with easy access to e-journals is strictly connected with the more complex issue of organising electronic resources and integrating digital and paper-based information. Surprisingly, e-journals seem to be a quite ambiguous resource. For instance Guerrini (2002) 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 first ones should be recorded in the OPAC, for the second ones a direct link to the resource should be more appropriate. Moreover, Ridi (2001) 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 (1998) 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.

How are libraries currently providing access to electronic resources? According to Moyo (2002), at first libraries have tried to organise electronic content the same way that they were organising printed materials, that is by cataloguing and classifying it, but the current boom of electronic resources is causing to consider alternative systems, such as web lists or library portals. In fact it is possible to identify different positions towards this problem. Several authors recommend a traditional library-based approach and consider the catalogue as the most suitable access tool for both printed and electronic resources (Gorman, M., 1999; Guerrini, M., 2002; Ridi, R., 2001). Other commentators are wondering whether the traditional catalogue is the best system for providing access to electronic resources or if it is not more suitable to build 'the access catalogue' (Hanson, T., 1998). Two features are most open to criticism, one, that the OPAC is designed to describe local physical resources, and two, that the access catalogue should not only be searched, but also accessed through a hierarchical browsable directory (Hanson, T., 1998; Kiel, C.A. and Summers, E.H., 2000; Tammaro, A.M., 2000).

However, providing integrated access is not only a question of organising information resources. As Salarelli and Tammaro (2000) note, collections, access services and users are all integral parts of the digital information space, so that they cannot be separately considered. Electronic resources are not simply collections but services, which should not only satisfy but also prevent user information needs. As a consequence, a deep

understanding of the user requirements about the process of discovering and locating electronic resources should represent a valid contribution to the development of effective electronic services.

3. RESEARCH DESIGN

As the purpose of the research is to understand user behaviour towards locating and accessing e-journals in a real and complex information environment, the approach will be mainly qualitative. According to Myers (1997), qualitative research is particularly appropriate for researchers aiming to understand people and the social and cultural context within which they live. Gorman and Clayton (1997) identify the distinctive features of qualitative research in comparison with the quantitative approach:

- The emphasis of the qualitative approach is on understanding participants perspectives, beliefs, feelings and interpretations
- Qualitative research is contextual and draws data from the environment in which events occur, while quantitative research tends to select only a few factors, which are tested in a quasi-experimental environment.
- Qualitative research describes occurrences through verbal narrative, while quantitative research quantifies them using numerical representations
- Qualitative research aims to understand the process of events, while the quantitative approach is often interested in the end result of processes.
- Qualitative research often follows an inductive approach, based on collecting evidence and using this to develop an explanation of events and to establish a theory. On the contrary, quantitative research usually relies on deduction.

Because of the different characteristics of the two approaches, some current research uses qualitative and quantitative research in a complementary way (Bryman, A. and Cramer, D., 1994). Moreover, qualitative research often combines qualitative and quantitative data sources to strengthen validity through triangulation (Amaratunga, D. and Baldry, D., 2001; Gorman, G.E. and Clayton, P., 1997; Myers, M.D., 1997; Yin, R.K., 1994).

Among the different qualitative research methods, this research will utilise the case study. A single exploratory case study will be built up, with a focus on a group of e-journal users. As many qualitative researchers highlight (Gorman, G.E. and Clayton, P., 1997; Rowley, J., 2002; Stake, R.E., 1995; Tellis, W., 1997; Yin, R.K., 1994), this strategy is 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. Case study focuses on understanding the dynamics present within single settings (Amaratunga, D. and Baldry, D., 2001). It is not a sampling research, its great strength being on particularisation, uniqueness and deep understanding (Bell, J., 1993; Gorman, G.E. and Clayton, P., 1997; Stake, R. E., 1995). Yin (1994) notes that reliability and validity of case study results from the methodological quality and rigor and not from the size of the sample. As a consequence, even a single case can yield reliable findings and contribute to theory building. Moreover, single case studies are considered highly appropriate to single and first-experience researchers, who have limitations and constraints in time and financial resources (Bell, J., 1993; Gorman, G.E. and Clayton, P., 1997).

3.1 Case focus

The Art and Humanities faculty of the University of Parma has been selected for the case focus for several reasons:

- Art and Humanities represents one of the least investigated areas in e-journal user studies.
- Art and Humanities academic staff, researchers and students at the University of Parma have currently access to quite a large e-journal collection.
- Statistical data about usage of networked electronic resources at the University of Parma show a large number of accesses from the Art and Humanities computers.
- Art and Humanities faculty includes various disciplines and research habits. So there is a high probability that a mix of attitudes is present.
- The University of Parma is member of an Italian consortium for the acquisition of e-journals, and during the last 3 years has highly increased its engagement in electronic resources provision. Nevertheless, the library system has not conducted any study to investigate and evaluate the service from a user point of view.
- The investigator works as a librarian at one of the Art and Humanities libraries, so she knows the environment intimately. She expects not to encounter problems in obtaining permission for the research and believes to be able to build interactive relationships with study participants. As she actively cooperates with the University Library Central Department for electronic resources delivery, she also should easily have access to documents and other useful information about e-journal service.
- The size, location and complexity of the site seem appropriate to the available resources of the investigator, so that the study appears to be manageable.

3.2 Key themes identification

Key themes, aspects and variables to investigate will be identified through a literature review. This will also provide a rich theoretical framework for the research, which will help the investigator to interpret and understand observed phenomena and relationships (Gorman, G.E. and Clayton, P., 1997). It is expected that users will themselves suggest further themes, and that other relevant elements will emerge during the data analysis phase.

3.3 E-journal user studies methodology

A review of literature has been conducted in order to identify the most appropriate methodology for collecting data on users of e-journals. Some studies were found adopting a single method to gain data: interviews to end users (Olsen, J., 1994; Stewart, L., 1996) and questionnaires (Brown, C., 1999; Woodward, H. et al., 1998). However, when the objectives of the study were broad or complex a mixed methodology was preferred: log analysis, questionnaires and focus group meetings (TULIP, 1996), questionnaires, focus groups, interviews, and log file analysis (Eason, K., Yu, L. and Harker, S., 2000; Jenkins, C., 1997; Pullinger, D. and Baldwin, C., 1997); usage statistics and questionnaires (Rusch-Feja, D. and Siebeky, U., 1999); usage statistics and interviews (Use of paper..., 1999); interviews and questionnaires (Rogers, S.A., 2001; Rowland, F., McKnight, C. and Meadows, J., 1995).

Questionnaires, observation and interviews are considered as user-centred methods useful to investigate customer behaviour from a qualitative point of view, but they present the limitation to rely solely on users' own accounts. These methods yield significant findings on what are the user expectations on e-journals, but are not appropriate to investigate how users really work with e-journals (Eason, Richardson and Yu, 2000;

Pullinger and Baldwin, 1997). As a consequence, many studies recommend combining log file analysis with different research methodologies in order to develop a more complete study (Bishop, A.P., 1998; Yu, L. and Apps, A., 2000).

3.4 Methodological triangulation

In order to increase the validity and reliability of the study there will be triangulation of research methods and data sources (Amaratunga, D. and Baldry, D., 2001; Bradley, J., 1993; Cunningham, J.B., 1997; Rowley, J., 2002; Stake, R. E., 1995; Yin, R.K., 1994).

In-depth, focused interviews will be conducted with faculty, researchers and students (key informants). Interviews are considered as one of the most important sources of information in qualitative research (Bell, J., 1993; Gorman, G.E. and Clayton, P., 1997; Oppenheim, A.N., 1992; Stake, R.E., 1995; Tellis, W., 1997; Yin, R.K., 1994). As the literature review has shown, this technique has frequently been used in e-journal user studies. According to Gorman and Clayton (1997), interviewing offers the advantage of encouraging people to highlight personal perceptions, issues and relationships, facilitates the collection of a large quantity of rich data in a relatively short space of time, and allows the researcher to enquire into individual behaviour. Moreover, it enables interaction between researcher and subject, facilitating the development of new and unexpected themes. As interviews disadvantages include the fact of being time consuming and of sorting large amount of data, it seems necessary to accurately select a number of key informants. Key informants will be selected according to the criteria of 'theoretical qualifications' and 'innate abilities' described by Gorman and Clayton (1997). For the purpose of the research interviews will allow in-depth exploration of user behaviour and needs towards accessing e-journals. They will also provide information about the contextual variables influencing user attitude and about the existing relationships between discovering system and use of e-journals. Information collected through interviews will provide the basis for the identification of the issues to be investigated among a larger population through questionnaires.

Questionnaires will be addressed to faculty, researchers and students. This technique will be used in this research for two purposes: first, to provide further evidence to support the findings of interviews with quantitative and qualitative data; secondly to discover relationships and associations within the themes identified through interviews (Amaratunga, D. and Baldry, D., 2001; Oppenheim, A.N., 1992). Questionnaires are considered a relatively inexpensive and easy way of collecting data from a large population. However, a criticism of this technique is that it can rarely allow to prove causal relationships and that inadequate design can often lead the researcher to false and misleading conclusions (Bell, J., 1987; Bryman, A. and Cramer, D., 1994; Kidston, J.S., 1985; Sanchez, M.L., 1992). As the literature review has showed, questionnaires have been frequently used in e-journal user studies, although they do not provide 'objective' quantitative data. For the purpose of this research, questionnaires will be sent to all Art and Humanities academic and research staff and to a representative sample of the student population, in order to reach about 15% of the undergraduates, 15% of the graduates, and 15% of the postgraduates. Care at the design stage, accurate testing and association with interviews will help to overcome limitations of this technique.

Focus group meetings will be held with Art and Humanity librarians with the aim of exploring the librarians' perception of 'user-centred' access system and discussing key issues of e-journal service. 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. 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 (Gorman, G.E. and Clayton, P., 1997; Widdows, R., Hensler, T.A., and Wyncott, R.H., 1991). This technique seems particularly appropriate for exploring implications of the research problem for librarians.

Documentary evidence will be collected through analysis of policy and strategy documents, minutes of meetings, internal reports, etc. Documents will be useful for corroborating the evidence from other sources, for making inferences about events and building a rich context picture (Stake, R. E., 1995; Tellis, W., 1997; Yin, R.K., 1994).

3.5 Data analysis

During the stage of data analysis the investigator will examine evidence in order to find linkages between the research object and the outcomes with reference to the original research questions. Throughout the process, the investigator should be rigorous and should use multiple data and sources to strengthen the research findings and conclusions. Many qualitative researchers consider the analysis of case study evidence as a difficult phase of the research, because of the enormous quantities of rich and complex data collected, and recommend that investigators place great attention and carefully consider any alternative interpretations (Bradley, J., 1993; Gorman, G.E. and Clayton, P., 1997; Rowley, J., 2002; Tellis, W., 1997; Yin, R.K., 1994).

As Yin (1994) states, exploratory case studies generally do not rely on theoretical propositions. So the appropriate general analytic strategy consists in developing a descriptive framework for organising the case study (Rowley, J., 2002). Research aims and objectives, questions, and key themes will guide the framework development. The investigator will examine, categorise, tabulate, and recombine evidence to address the research questions and objects, and conduct cross-checks of facts and discrepancies in accounts. Data analysis will begin early in the research process, so that analysed data will provide new themes to be explored (Gorman, G.E. and Clayton, P., 1997). Throughout an iterative non-linear process similar data will be grouped and appropriate conceptual labels will be identified for the groups. Concepts will then be categorised and categories will be related by means of statements of relationship (Strauss, A. and Corbin, J., 1990). Portions of information generated from data will be examined in the light of existing theory on electronic resources organisation in order to strengthen the case study validity (Gorman, G.E. and Clayton, P., 1997). For the analysis of quantitative data collected through questionnaires, answers to closed questions will be converted into numerical form and then turned into figures and symbols. Free-responses questions will be coded (Oppenheim, A.N., 1992).

3.6 Limitations

In the context of this research, perhaps the aspect of the case study approach most open to criticism is that it provides a limited basis for scientific generalisation. The evidence from case study research, however, is considered 'generalisable'. Stake (1995) talks about naturalistic generalisation of case studies, which is realised when the reader of the study is able to relate the case description to his previous knowledge and experience of the topic, in this way obtaining high-quality understandings. According to Stake, high quality case studies should assist readers in making naturalistic generalisation, for instance providing an account of existing theories and previous studies, and offering accurate description of the research strategy and methodology. Furthermore Yin (1994) states that case studies results can be generalised to theoretical propositions or existing theory (analytic generalisation). Thus, "the aim of case studies cannot be to infer global findings from a sample to a population, but rather to understand and articulate patterns and linkages of theoretical importance." (Amaratunga, D. and Baldry, D., 2001). The application of methodological rigor to this research, the use of triangulation techniques, and care to relate the results to established theory should help to overcome limitations in case study research.

Replications of the findings through a multiple case study should be useful in order to strengthen external validity (Amaratunga, D. and Baldry, D., 2001; Perry, C., 1998; Rowley, J., 2002; Tellis, W., 1997; Yin, R.K., 1994), but such a strategy does not seem to be manageable within the context of a modest scale research project carried out by a single investigator.

In an early stage of the research design it was decided to collect rich and reliable quantitative data about e-journal use through log file analysis. Unfortunately, the investigator found that at present the University IT infrastructure does not allow this type of analysis. As a consequence, the study should rely only on 'subjective' quantitative data from questionnaires.

4. PLANNING

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Obtain permission from organisation	X								
Do the literature review	X								
Identify key informants	X								
Obtain a list of Art and Humanities academic staff, research staff, and students	X								
Collect documentary data on the University of Parma e-journal service		X							
Develop interview questions and strategy		X							
Pilot interview questions and strategy		X							
Carry out first interviews		X							
Start and continue the process of analysis and writing up of data		X	X	X	X	X	X	X	X
Extend number of key informants and continue interviews			X	X					
Questionnaire design			X						
Questionnaire pilot			X						
Distribute questionnaires				X					
Analyse questionnaires						X			
Focus group discussion design					X				
Trail focus group discussion					X				
Undertake focus group discussion with Art and Humanities librarians						X			
Focus group analysis						X			
Identification of themes						X			
Write draft dissertation chapters/sections		X	X	X	X	X	X	X	X
Submit draft chapters/sections to supervisor			X	X		X		X	
Submit final report									X

5. ANTICIPATED OUTPUTS

The case study results could be used directly by the University of Parma library system in order to make informed decisions about the organisation of electronic resources and the development of electronic services. The study should also inform and provide a basis for policy decisions within the consortium of which the University of Parma is a member.

Care at the design stage will ensure that the picture built-up is credible and reliable, so that research findings should encourage exploration and searching in the field of organisation of electronic resources and e-journal user studies. Moreover, the study should represent a useful contribution to knowledge and theory building in the area of use of electronic resources by researchers and students in Art and Humanities disciplines.

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