

LIBRARY SUPPORT FOR ONLINE EDUCATION: ELEMENTS OF SUCCESSFUL DELIVERY

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ABSTRACT

Differentiation between on-campus and distance education students has diminished as universities put more resources into online education. Library services that have focused on resource delivery for remote students have expanded to facilitate online reference and information literacy instruction. These services must now be situated within a strategic framework that embraces many features including information policy, collaboration, information organization and learning process support.

A multi-method analysis comprising case study, interview and literature survey of Australian university services is underway in order to propose a model that libraries should address for successful online service. This preliminary analysis reports upon the framework that has been suggested by the data collected so far.

KEYWORDS

University libraries; Online services; Remote education; Educational resources; eLearning organization; Delivery systems.

1. INTRODUCTION

Prior to establishment of online services, librarians provided much of the intermediation that distant users required in order to draw upon resources from university libraries. In a digital era, this intermediation continues. However, there is greater emphasis on provision of self-instructional support tools for education on how to use databases and collections. This provision has been complemented by support for library users through virtual reference services, and by more sophisticated approaches to document delivery, including digital delivery. All such services require innovation in information management.

Distant users have been joined by increasing numbers of local (on-campus) users who exploit the online facilities perhaps to the exclusion of physical visits to the library space. Together they comprise what in this paper are called remote users, where *remote* is used to mean either a distant *or* a local but not in-person use of facilities.

Recommendations for service for remote users have been described from a managerial viewpoint and service has been examined from a research viewpoint by many writers. For example Cooper et al (1998) following their literature review, conclude that all remote users seek constant, around-the-clock access to online databases mounted on user-friendly systems and help desk or technical support, a personal relationship with library staff like a customer-business relationship, and extensive information describing specific resources and services available at the host library.

Provision of library services for distance education students is a practice mature enough to have resulted in establishment of guidelines that have been modified over time as services progressively became online. For example in the U.S.A., ACRL (Association of College & Research Libraries, 2004) itemizes 11 different "essential services" and 18 associated items of documentation. Such guidance is complemented by manuals that advise on service provision. Goodson (2001), Noah and Braun (2002), and Watson (2003) all advise and

instruct with respect to areas such as learning needs, educational skills, collaboration in curriculum design, and collection support.

Research into library support is exemplified by analysis of users and their needs (Stephens, 1999), approaches to education of library users (Churkovich & Oughtred, 2002), the process of information seeking in the online environment (Su, 2003), evaluation of services (Meola & Stormont, 2002), and aspects of interface usability (Golian, 2000).

Although there have been some suggestions outlined for the range of services that must be addressed by libraries (Abram, 2004; Dorskatsch, 2004), there is not as yet research in operational environments that identifies best practice and articulates this in an overall model for effective combination of resources with education.

This paper reports on a study that is underway to investigate practices employed by Australian university libraries, and outlines elements of a model that has emerged from preliminary information gathered.

2. AN EVOLVING MODEL

Initial investigations have suggested the elements of a model. These elements are presently being refined as further case material is analyzed. Here follows a brief overview of the method for gathering information, and a preliminary outline of the elements arising from analysis.

2.1 Method of investigation

An initial survey was conducted through CAUL (Council of Australian University Libraries). Responding libraries were asked questions about their involvement in Web-based information literacy education, virtual reference service, and repositories of full text course material. CAUL membership comprises the 40 University libraries in Australia, but the material was also administered to the New Zealand University libraries on the CAUL mailing list. Twenty six responses were received from Australian and 3 from New Zealand libraries for an overall response rate of 29/43 (67%).

This scoping survey was then used to establish a case study protocol, and to approach a number of respondents in order to undertake more detailed analysis of particular organizations. At this stage three case studies are underway. They are being undertaken using a focus group interview of key organizational staff followed by consultation of relevant documentation, and access to internal views of interactive material being developed for online users.

In each case, structured interviews examined differentiation of online and on campus service; management issues; the range of resources, and software support; and quality control for document delivery, and digital reference services. There has also been investigation of approaches to online information literacy instruction, how software was being utilized in support this instruction, and the management and evaluation processes being undertaken.

Case study organizations have provided access to their internal systems to enable examination of the ways in which software is being developed and applied.

2.2 Elements of the model

The investigation to date has suggested preliminary constituents of a framework for service that a library should address when providing support for remote online education. The elements of such a framework are: 1. Information strategy; 2. Information organization; 3. Collaboration; 4. Information architecture; 5. Learning process support; 6. Resource support and delivery; 7. Communication; 8. Information literacy; and 9. Preservation. These are briefly explained as follows:

2.2.1 Information strategy

A library with systematic involvement in online education support for academic units must carry out responsibilities within an information planning framework that reflects and contributes to the institutional

planning framework. This planning should incorporate policy developed to address library role in the online learning environment in areas such as differentiation of service, contextualization within courses, resource provision and training.

2.2.2 Information organization

In their role as repositories, libraries have a long history of developing standards for describing information artifacts. Most notably this has been accomplished through cataloguing rules and classification schemes. The advent of computer-based services saw both classification and cataloguing being embodied within metadata, with the most prominent format being MARC (U.S. Library of Congress Network Development and MARC Standards Office, 2005). MARC continues to be developed, but now takes its place within an Internet environment where other frameworks for metadata in a variety of environments are being utilized.

Organization of access to information resources for the remote environment builds upon development of online public access catalogues (OPACs) and enhancement of description of the resources in their various formats. OPACs must now be flexible enough to deal with formats that have been developed for description of Web materials such as the Resource Description Framework (RDF) (W3C, 2004) developed using XML syntax to enable description and interchange of information about Web resources.

2.2.3 Collaboration

The higher education environment provides many opportunities for collaborative work. However, these must address the challenges of boundaries established by academic disciplines, and boundaries demarcating educators and support staff. They also depend upon the cultivation of good interpersonal skills. When library staff are able to present themselves to educators as being versed in education and training (such as through higher education certification courses), they are better placed to work contextually. For example, they need to be familiar with different learning styles, the academic requirements of learning and the connection between teaching styles and learning approaches.

Collaborative approaches include working in teams with academics and instructional designers on course development, and providing current awareness about developments in learning delivery. There may also be technical support collaboration such as with access security.

2.2.4 Information architecture

The information organization undertaken using various applications of metadata should be complemented by design and provision of navigation for effective access to resources. The business community continually tries to avoid developing silos of information that are not interconnected. The academic community must deal with the same issues.

These may be addressed by attention to the design of content management systems and publishing, by provision of discovery mechanisms, and by integration of links to special resources at point of requirement.

2.2.5 Learning process support

Support that libraries provide in relation to discipline content and current awareness about developing teaching and learning processes may further be complemented by assistance with the tools of learning processes. For example, provision of information management tools, and instruction in use of those tools such as:

- Bibliography maintenance so that students and staff may maintain databases of references that can be tailored for different referencing styles and inserted into appropriate report formats.
- Project management tools that may be used in conjunction with group work.
- Report and essay formatting software that can be linked directly to point of requirement for course assignments.
- Guidance on information ethics so that instructions are available concerning attribution, plagiarism, software and media fair use at time of appropriate use.

2.2.6 Resource support and delivery

Libraries have traditionally assumed the role of repository for information resources, and managed the delivery mechanisms for them. In many cases, the resources in question have long since ceased to be physical ones, and a great deal of attention is paid to provision of access to digital resources. Attendant with this,

library role must increasingly include ways of packaging resources, providing assistance in finding resources, managing rights to use of the resources, and improving avenues to the resources.

2.2.7 Communication

Ongoing communication with library users has traditionally been carried out by means of current awareness and reference services. Current awareness has in some applications been called selective dissemination of information, and in others, environmental scanning. Whatever the terminology, there is implied an ongoing service that provides to a customer's desktop, notification material of relevance to their interests as it becomes available. In some cases this may be a consequence of follow-up to an initial reference query.

2.2.8 Information literacy

The process of library instruction has in recent years been situated within a broader framework of information literacy. In the higher education arena this is articulated as an understanding and set of abilities enabling individuals to recognize when information is needed and to have the capacity to locate, evaluate, and use effectively the needed information (Bundy, 2004).

Online approaches to library education are increasingly developed with reference to an information literacy framework. They take place in a hybrid environment – that is, the online and face-to-face options should be compatible and convergent. They may use existing software or develop their own for supporting self-instruction in information literacy.

2.2.9 Preservation

Digital repositories are proliferating to the extent that libraries have a role not just in facilitating access to digital information artifacts, but in undertaking programs to see that appropriate preservation of objects take place. Centralized repositories serve a particularly useful purpose in providing stable access to published ephemeral Web materials.

Although institutions routinely provide backup of course materials and learning objects (online tutorials or modules established to support self-regulated and autonomous learning), there is beyond this, a need for archiving learning objects. The methodical selection, description, control and differentiation of versions require control that libraries have the expertise to undertake.

Repository software development is now being undertaken to provide for managed enduring storage so that it supports preservation services for a variety of digital formats; persistent object identifiers, control of access and straightforward deposit procedures.

Networks of learning repositories such as *eduSource* in Canada provide some connection but there is such proliferation that guidance and standards for interconnection need to be pursued.

3. CONCLUSION

3.1 Implementation challenges

The challenges to implementation are many and varied. Two illustrations may be given within the confines of this paper: one on collaboration between professionals, the other on preservation of materials.

Collaborative approaches may be pursued within the transformative environment that information technology cultivates. A positive aspect of change management is the opportunity it provides for establishing new partnerships. The library's role in university infrastructure positions it well to foster relationships between disciplinary areas as well as with course developers. The extent to which this is possible may depend upon administrative structures. However so many universities now incorporate different arms of information (library, information systems, learning management, instructional design) under one chief information officer (though not necessarily with that title), that barriers to infrastructure cooperation should be diminished.

Even with goodwill, collaborative initiatives may be hindered by many factors. These include inflexible organizational management structures; narrow administrative vision; limited access to information technology and its support; limited availability of quality curriculum content along with underdeveloped

information and computer literacy of teachers, accentuated by academic apprehension about online instruction, and disinclination to devote the time to learn and utilize the online environment.

Secondly, preservation may be undertaken at individual institutions, but to achieve the potential of sharing learning objects between institutions requires standards for interoperability. Although there has been a great deal of work undertaken in developing the standards, there is still to be achieved distributed sharing and re-use of material that is contingent for example on widespread adherence to metadata. However, now that academic e-prints repositories are growing in use and acceptance, and are facilitated by metadata sharing through search facilities, it is reasonable to suppose that learning materials repositories may follow suit.

3.2 Appraisal

Although analysis is at a preliminary stage, it has been useful in identifying elements that are perceived to be of importance in constituting a concerted approach to support for e-learning. The study has already reached the point of establishing exemplars under each of the headings outlined above within various sub-categories that apply to them. There is also a growing repository of examples that illustrate the particular applications. Although both the categories and subcategories are expected to be refined as the project proceeds, they should provide effective points of reference upon which libraries may benchmark their future development.

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