Chapter 3.3.5

ENHANCING RURAL MEDICAL EDUCATION
THROUGH WEB-BASED ACCESS TO LIBRARIES

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Introduction

Filled with stacks of books, the library is a central component of all learning. For many, it represents a space to study, to peruse the shelves, or to find support from experts at the reference desk.

Libraries today are no longer simply defined by physical space, however. With users distributed in far-ranging geographic locations, with diverse needs, the concept of the virtual library is increasingly a necessity. To achieve an on-line presence, libraries are exploring web-based technologies that help to provide resources and services to users at a distance.

Libraries do
- offer virtual research assistance;
- represent hubs of social media know-how;
- help to evaluate the evidence, critically appraise;
- provide relevant resources for both life-long learning and at the point of care; and
- support new technologies, such as mobile devices.

Libraries don't
- have unlimited budgets (and must select the best resources based on available funds); and
- always have the network architecture needed to be completely web-based.

Research support

A traditional area of support in any library is the reference desk where users can obtain research assistance from a skilled professional. Since visiting a library is not an option for all, libraries are implementing virtual reference desks. Sometimes referred to as mobile or virtual reference, this practice is 'a reference service initiated electronically, often in real time, where patrons employ computers or other internet technology to communicate with reference staff without being physically present' (1).

There are multiple on-line tools that allow libraries to facilitate this reference dialogue in the virtual world, most with either an initial purchase cost or for an annual licence fee. While some question whether the learning experience is the same as in person, it is clear that the technology provides an option to obtain reference services for those whose physical access to a library is limited by geography (2).

Social networking

Social networking technologies, born of the Web 2.0 movement and the principle of on-line communities of participation, are in essence distributed communities (3). They are networks that enable relationships, information sharing and, of course, a degree of social fun. They are also the tools through which library users are communicating, collaborating and sharing.

Libraries have embraced the principles of Web 2.0 in order to tap into these vast on-line communities. Whether instructing on the use of RSS feeds for current awareness, creating Facebook group pages for information sharing or recording and distributing podcasts, libraries are using social media tools to reach users in these on-line communities.

New York University's Health Sciences Library launched a Twitter account, a service for micro-blogging, which lets libraries tweet news, events and promote resources. Although difficult to measure the effectiveness, the only cost is in human resources, and the reach is exponential (4). Not only can libraries use these tools to provide valuable updates, they are also poised to assist users to adopt these new technologies. By experimenting with social media, the library becomes a source for those who seek to know more about, or how to access, these new social technologies.

Instruction

Library instruction typically embraces a blend of asynchronous and synchronous technologies. While assisting users via the telephone or email is an option, it is frequently frustrating for both the librarian and user. Synchronous technologies, such as web-based conferencing, enable librarians to communicate with users in an interactive way. Users can follow a demonstration on their own computers, as librarians instruct on the best search techniques etc (5). Webinars of this type can be formal or informal, they can be for groups of many or for only one person. The flexibility ensures the same ease of conversation that one might experience by walking into a librarian's office to ask a research question.

The Central Queensland University (CQU)Library published a case study that highlights multiple methods of library instruction utilised for distance education. Since 1996, the library programme has developed courses to ensure that learners have the best information literacy skills regardless of their proximity to campus. The Library's value statement is as follows:

> 'CQU Library will endeavour to make available relevant and timely information literacy programmes to all students of the University. Information literacy concepts will, where possible, be integrated with the curriculum, attaining quality learning outcomes, and develop transferable skills. A variety of programmes will be developed to provide a range of learning opportunities and to make the most effective use of staff and student time and resources.' (6)

The CQU librarians developed strategies for different client groups, using multiple technologies for delivery - including video conference, computer-assisted learning programmes, web-based courses/tutorials and virtual workshops. For each of these technologies, librarians exercised careful consideration of the topics, while assessing the corresponding selection of technology. For example, the computer-assisted learning programmes, which enable learners to move at their own pace through a series of web-based sections, proved effective for teaching specific skills such as searching a database. On the other hand, virtual workshops proved ideal for small-group learning with highly specialised needs. Video-conferencing requires an established architecture, but proved to be an effective method for large group

lectures across multiple campuses – while the library's inclusion in web-based courses (learning management systems) provided the greatest options for interactive learning, as well as integration into the curriculum (6). This case study cleverly articulates the various technologies available for library instruction, while highlighting the ideal type of learning for each.

Evolution of collections

In tandem with libraries moves to embrace new technologies in order to provide web-based services to users, they are also increasing the proportion of electronic resources in their collections. Although print has not entirely disappeared, the electronic library is vital for users at a distance (7).

Within this collection shift, libraries struggle with the desire to provide a vast selection of electronic resources and the need to balance budgets. In an ever increasing on-line environment, with students learning in multiple settings sometimes at a great distance geographically, the ideal format for resources is electronic. However, the cost for electronic resources can be greater than print.

Increasingly, consortia are established to achieve greater purchasing power. In Canada, there are several of these initiatives, all of which are geographically organised (usually by province). Although each model is different, the goal is to provide the best resources to their users for the lowest cost (8). As libraries migrate their collections to the virtual environment, they must explore alternatives to ensure fiscal viability over the long term.

Point of care tools

In addition to budget constraints, libraries must also contend with the evolution of on-line resources. For example, a distinct type of electronic resource has emerged as part of the evidence-based medicine movement: the point of care tool. Sometimes referred to as bedside information products, these point of care tools arguably provide succinct, synthesised information from easy-to-use interfaces. These on-line resources are a large growth market for library vendors, with companies heavily marketing their new products. Examples of these tools include: UpToDate, FirstConsult, Cochrane Library, eMedicine, DynaMed, BMJ's Clinical Evidence, Essential Evidence Plus etc. As users increasingly request these tools, Libraries must evaluate and select the best of the offerings, as few can afford the licences for them all (9).

It is clear that the popularity of these tools is growing, and that physicians and learners at the bedside are eager to have access to this type of resource. This also means that possessing strong critical appraisals skills are a necessity. Each point of care tool has internal standards for the information summarised, and the evidence-based results are only tested within the rigour of their own internal processes. As the appeal of point of care tools increases - specifically the access to concise information in a readily digestible form - the user must be trained to evaluate the validity of the information being summarised. Librarians have extensive expertise with critical appraisal skills and should assist with this type of information retrieval training (10).

Mobile devices

Not only has it been imperative for libraries to provide electronic resources to their distributed constituents, but they must also adapt to the rapid uptake of mobile devices.

In clinical settings, smart devices are frequently utilised for quick consultation. Sometimes referred to as m-learning (mobile learning – i.e. learning that occurs using mobile technologies), this distinct trend is a challenge for libraries (11). It is no longer sufficient to simply provide a quality on-line collection as the resources in that collection must also be available in a mobile version. This can take many forms; for example some vendors provide specific applications for downloading to a device and others offer mobile web-versions of their databases. The difference lies in connectivity. The mobile web-versions usually require an internet connection or cellular service, whereas the downloaded applications can function off-line.

The ease of access to resources via mobile devices certainly facilitates access at the point of care, ensuring the point of care tools described in the previous section are available at the bedside.

Challenges

As noted in the study by Appleton and Orr (6), although technology provides multiple options for web-based learning, the technologies are not always reliable, the instructors and learners are not always familiar with the interfaces and addressing numerous e-learning styles is still problematic. Since technology continues to change at a rapid pace, it is difficult for library staff to stay abreast of trends and ensure that they have the appropriate skills to train users.

It is also crucial that libraries continue to benefit from stable funding. In order to provide the breadth of resources required for both lifelong learning and tools for the clinical setting, a healthy collections budget is vital (12).

If libraries can maintain a stable funding source, there remain two hindrances to access of collections: adequate bandwidth and cellular networks. In the cases of the countries which have begun to address the infrastructure needed to eliminate these barriers, libraries' shift to a web-based environment happens with greater ease. In countries where the networks are not yet in place, libraries will be challenged to keep a pace with their counterparts (13).

Lastly, as most license agreements stipulate the types of users who are authorised to access resources, access to a library's collection can also be limited by these terms. To meet the legal obligations, users must often be officially affiliated with the library, for example as faculty or staff. Although this can limit the accessibility of libraries, there are often other service options in the web-based environment, for the unaffiliated. Libraries typically post tutorials, podcasts and other media to their websites without restriction. Subject guides usually comprise a mix of licensed resources, as well as freely available sources, providing links that any user can follow. As such, any library's virtual environment can be viewed as a portal to learning, regardless of affiliation.

Conclusion

Transforming libraries is a necessity in order to meet the needs of users in a technological age. While the bricks and mortar, including the book stacks, are still common physical aspects of many libraries, the virtual library is not a possibility for the future, it is a reality today.

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