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# Libraries And Learning (With Or Without The "E", "M" OR "I")

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**Abstract:** Web-based learning has posed challenges to the academic library world. In this paper, Ryerson University Library in Canada shares its experience in coping with changes and offering faculty and students a satisfying Web teaching /learning environment. The use of SFX link resolver for integrated library services and RefWorks in the Blackboard e-reserve environment is described. Issues that impact on the service are discussed.

# Introduction

# Literature Review on Web-based Learning

A lot of literature has been written on how Web-based learning has blurred the borders between study on campus and distance learning. The technology that is used for distant learners can just as well be applied on campus to improve the quality of teaching and learning. The Web has pervaded every facet of the teaching and learning process: the preparation and delivery of course materials, one-on-one instruction via e-mail or chat, shared interactive discourse through online discussion boards, grading of students' assignments and assessment of learning progress in various forms.

In an article on how "universities adapt to a shrinking world" (Hoare 2006), Stephen Hoare investigated a few universities in the United Kingdom which had adopted either a proprietary VLE (virtual learning environment) such as Blackboard Management System (which merged with rival Web CT) or the "more flexible, open access" system, such as Moodle and Boddingtons, which are based on free software and shared content. Another article on interlibrary loan and document delivery (Doan & Ferry 2006) depicts a course tool that allows faculty to create course web sites with the security of restricting access to registered students. Attempts were made to integrate print and electronic reserves into the course management system using RSS. (RSS stands for a number of things - Rich Site Summary, Really Simple Syndications or RDF Site Summary, a format that facilitates the sharing of up-do-date information.) Library's print reserve is now a feature faculty can choose when creating their course web sites. An RSS feed from the OPAC (online public access catalogue) automatically populates that section of the course web site with the appropriate print reserves. Faculty are adopting publishers' "e-learning support" packages that come with online tutoring, discussion, multimedia, grading and assessment features, much like a textbook within a course management system. Students purchase access codes to read textbooks online and work on quizzes designed for various chapters of the books. In another article on downloading seminars on iPods or MP3 players (Hoare 2006), mobile learning is seen as complementary to student life and a way to "extend the classroom experience". Recorded lectures on audio file supplemented an e-learning package that could be accessed from the University's VLE. Students could listen to the lectures wherever and whenever they wanted to and played back for revision. At the same time, they had the opportunity to meet with their tutors and retained the social element in their learning process. A pilot project in a U.S. academic institution reveals that students do benefit from audio files of learning materials (Janossy 2007). However, it is important to increase the subject matter level of interest and the interaction. The course designer expanded the podcasts beyond a spoken version of text material to a series of interviews in a hypothetical firm, giving students the flavour of on-going participation in a systems analysis of a business case.

# Challenges for Academic Libraries

Libraries are the primary academic information resource for universities. Libraries promote learning, support

teaching, and enhance scholarly, research activities. They do so by building collections and providing innovative services and access to information. How do academic libraries respond to the "virtual learning environment" that almost turns all learners becoming distant learners? How do libraries adapt to the *e*lectronic, *m*obile or *i*Pod-related learning behaviour of the new generation?

One common theme with the developments described above seems to be the words "integration", "interaction" and "collaboration". Libraries have come to realize that they cannot "disconnect" with the users' virtual learning environment (McDonald & Thomas 2006). More and more libraries are trying to integrate their search tools into the users' course learning space. Libraries are also awake to the fact that students interact with each other through their electronic social network. Increasingly, libraries have attempted to integrate its resources in social networks such as Facebook. Physically, some libraries have invited institution partners into their information learning commons, including the Writing Centre, Computing Services, etc. for a collaborative support of learning activities. Electronically, libraries are incorporating popular external search tools such as Google Scholar. Another emerging technology is the use of podcasting for lecture archives, supplementary learning materials and creative student assignments. iTunesU is a recent development in the academic environment combining podcasting, course materials (public or private) with mobile technology that is a part of the students' lives.

# Ryerson Library's Experiences

Ryerson University Library in Canada is no exception to these library initiatives to integrate with the teaching/learning space and the departments that support the teaching/learning process. Ryerson University is a leader for career-focused university education, offering more than 80 undergraduate and graduate programs, with over 21,000 students, 700 masters and PhD students and with an ever-growing Distance Education (DE) Department. The Raymond Chang School of Continuing Education is the country's largest, with 64,000 annual registrations. Ryerson Library may not be the pioneer in technological moves but is innovative enough to build upon previous experiences and elevate the library service to creative heights.

# Scholars Portal - Collaborative Integration of Resources and Interaction with Users

A recent trend in library developments is consortial collaboration. The setting up of Scholars Portal is the crystallization of collaborative efforts by the Ontario province's academic libraries with the shared vision in providing "access to scholarly electronic resources through a set of tools which allows the networked scholar to search, save and integrate these resources with their teaching and research to foster greater learning opportunities". <a href="http://www.scholarsportal.info/">http://www.scholarsportal.info/</a>

Scholars Portal provides a wide range of services for member university libraries:

- o Scholars Portal Search (Illumina) <a href="http://search.scholarsportal.info">http://search.scholarsportal.info</a> use for cross database searching
- o E-Journals http://scholarsportal.info a single search of many resources
- o RACER Interlibrary Loan <a href="http://racer.scholarsportal.info">http://racer.scholarsportal.info</a> find and get what you can't find
- o Get It!(SFX) <a href="http://sfx.scholarsportal.info">http://sfx.scholarsportal.info</a> Get your article from the record
- o RefWorks <a href="http://refworks.scholarsportal.info">http://refworks.scholarsportal.info</a> your personal bibliography creator

Take the example of RACER interlibrary loan (Cheung & Fraser 2007). RACER stands for Rapid Access to Collections by Electronic Requesting. Twenty university libraries in the province, including Ryerson, moved to a shared ILL (interlibrary loan) system in mid 2003, and implemented a centralized installation of OCLC PICA's VDX software. (The software was originally a product of Fretwell-Downing based in the United Kingdom). Endusers now simultaneously search worldwide catalogues, submit and track progress of requests to other libraries, and receive materials rapidly. Several member libraries have moved from staff-mediated to auto-mediated ILL, meaning users directly request materials from a library, bypassing staff. Ryerson Library has not participated in this new move yet but is the third university in the provincial academic consortium to make use of SFX link resolver to transfer citation information seamlessly from borrowing library catalogues to ILL request forms.

SFX is a link-resolver developed by Ex Libris, a company using the OpenURL standard for interoperability between

information resources. SFX transfers citation information seamlessly from borrower library catalogues to electronic resources. A "Get It!" button appears beside each reference retrieved by an end user's search of Ryerson Library resources (including journal databases). One click on the button brings up a menu of choices, that may include the various databases that contain the same article and the full-text viewing options, or submitting an ILL request (Figure 1) for the item via RACER, if full text is not available. The RACER ILL request form will be filled automatically with the citation information, and the end user just has to complete other details and submit his or her ILL request. This is a huge step towards autopopulation of data into a request form, eliminating any re-keying of information by the user. It does not require a survey to find out how the users respond to this new feature. The dramatic increase in number of requests in this academic term is a sufficient indication of popularity due to increased ease.

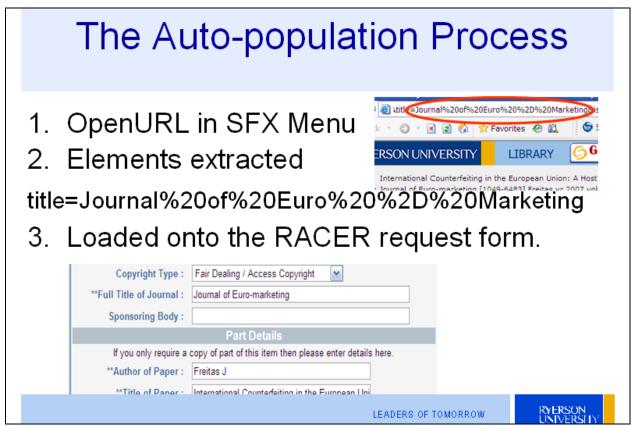


Figure 1: Autopopulation of Interlibrary Loan Request Form using SFX

E-Reserve: Integration of Library Resources, and Collaboration with the University's Teaching / Learning Portal

#### SFX Applications in E-Reserve

Every university has its own unique character and culture. Collaborative undertakings cannot possibly accommodate individual institutional needs. Ryerson University Library's E-Reserve project is an exemplary case of collaborations and individual choice of strategies and directions.

E-Reserve was introduced officially in 2004 after sporadic applications at the request of faculty in 2003. It was made possible by technology – the use of Web links and scanning of print to pdf files. E-Reserve was able to integrate links to full-text of journal articles and scanned pdf of book chapters, done within copyright constraints. Ryerson Library is by no means an early starter of e-reserve but within two years of its inception, (2004-06), the Library has become one of the forerunners in the region, integrating course reserve with Blackboard Management System, and streaming of videos that the Library has cleared digital rights for.

E-Reserve could not have achieved all these without collaboration with the University's Digital Media Office (DMP), the Office that administers the Blackboard Course Management System. The Distance Education Department is responsible for technical support of video streaming to their community, though it communicates with the Library for assistance with clearing digital copyright for materials in the Library collection.

The E-Reserve project also demonstrates how one library service can intertwine with other endeavours within the Library to present an integrated teaching and learning experience for users. The SFX link server offers libraries a proven solution for linking their diverse, ever-increasing set of electronic resources. RACER has demonstrated its effectiveness in transferring citation information onto ILL request form seamlessly. Users are a single click away from a comprehensive menu of options for that reference. Ryerson E-Reserve believed that users benefited from having multiple options to access the same article from different databases, especially in the event of broken links to certain databases (Figure 2). An added incentive to implement this approach is that the SFX interface is no different from the screen seen by users when they perform a search for articles from the Library's "Articles/Indexes" Web page.

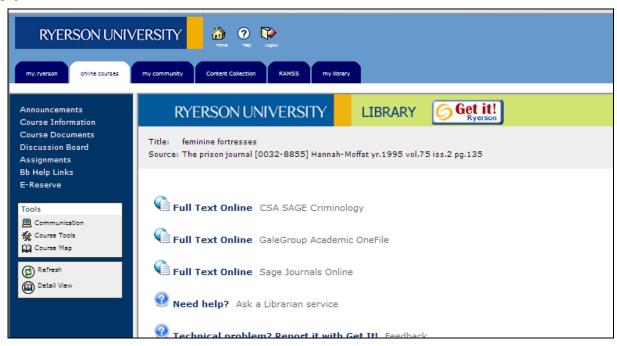


Figure 2: SFX – Choice of Databases & Library Branding

We asked a number of Ontario university libraries before implementing SFX links in E-Reserve. None of the libraries consulted employed SFX links. One Library questioned this approach, claiming that the purpose of "ereserve" is to deliver the article, in the same way that print reserve provides the physical document right away to the user. We are aware that not all users appreciate this intermediary step, and get even more frustrated if the link brings them to more searching menus (e.g. selecting volume/issue from the journal title screen) before the end result. E-Reserve took part in two end-of-term Distance Education student surveys (March, 2007 with 863 respondents and November 2007 with 833 respondents). Over 72% in both surveys thought that reading packages or e-reserve articles were course features beneficial to their learning experience. Over half were not exposed to e-reserve and some mentioned that they wished their instructors had made use of this online access. Of those who used, more than 50% found it easy or did not have problems opening up an article link or seeing a full-text article on e-reserve. However, there were repeated remarks about ensuring a "direct link" to the course content or article, "not a connection to another site" or "eliminate the need to search and search for the article…" This issue of a direct link

has been brought to the attention of the Digital Support Librarian, who oversees the SFX links operation, as it is an important feature, not just for e-reserve, but the overall library database search efficiency.

#### RefShare/E-Reserve Pilot

E-Reserve is piloting a project with RefWorks to enable faculty to create durable links to articles themselves, while doing their research (Figure 3). Faculty can also share these materials, using RefShare, with students in their Blackboard courses.

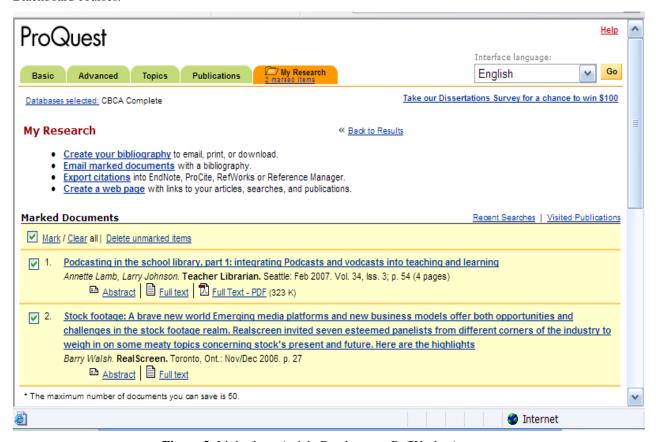


Figure 3: Links from Article Databases to RefWorks Account

The possibility of using RefWorks and then RefShare to create durable links in e-reserve in Blackboard was not considered until early this year. The E-Reserve Librarian has consulted the experience of the City University of Hong Kong. The backgrounds leading to this new initiative are quite different. The latter did not engage in any copyright clearance for faculty. Links were made to articles subscribed to by the Library or faculty-owned materials such as exams, test, lecture notes, etc. They did not turn on the e-reserve module in Blackboard. Instead, they made use of course-specific sub-folders under the Library Content tab in Blackboard to store course reserve links. This disparity in approach demonstrates how libraries see things differently and design their own strategy applicable to their individualized settings. There are of course other methods to create links. Ryerson Library uses the integrated library system created by Innovative Interfaces (III). Innovative and Blackboard have come up with an integration feature that allows the exporting of links from III platform to Blackboard. However, RefShare was the final choice for Ryerson's E-Reserve because of the added benefits of RefWorks and the fact that the Library has been promoting RefWorks in creating bibliographies since 2005. Here are some comparisons of "ordinary" links in Blackboard and RefShare created links.

E-Reserve Links	RefShare Links - Benefits For Faculty	RefShare Links - Benefits For Students
Done by library staff. Faculty have to plan ahead and request.	Faculty create own lists, add and delete items anytime they want	
Displays only author last name and article title.	Displays full citation including author, title, journal title, year, volume, issue.	Easier diagnosis of technical problem when occurred.
Access full text and holdings information only.	In addition to full text and holdings information, integrated with RefWorks to organize research, allows sharing with students and colleagues, and creating bibliographies.	Resources from reading lists can be easily exported if students have RefWorks accounts.
Limited citation display options	Displays readings in any of over 800 citation style formats.	Acquaint students with RefWorks to create accurate bibliographies.
Discussion board and announcements in separate areas are not tied to reading.	Allows both faculty and students to add comments directly to individual readings.	Students can easily see which readings have specific comments attached to them.

Table 1: Comparison between Blackboard and RefShare links

Once the faculty know how to use RefWorks, sharing the research results or links to information resources with students using RefShare is an easy step. All they need to do is to put the links in a "shared" folder. Items can then be copied and pasted into the "external links" field for URLS in the Blackboard Content Collection module. Permissions can be set to allow "export", "bibliographies", "enable option to e-mail me", etc. (Figure 4)

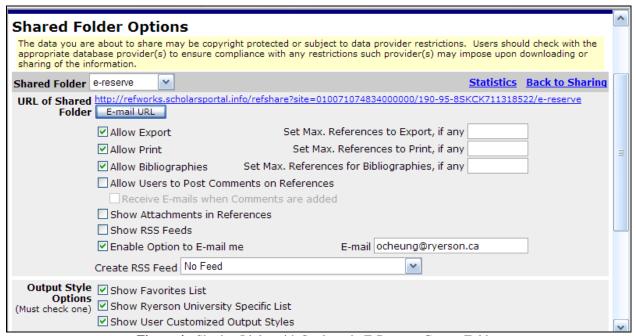


Figure 4: Sharing Links with Students in E-Reserve Course Folder

The project has barely started at this stage. Discussions on strategy centred on the target users – whether promotion should be directed at the heavy Blackboard e-reserve departments or faculty users who already have RefWorks accounts, or all faculty. The decision at the end was to select the Nursing Department, which has been the top e-reserve user department since the service was first offered. Some faculty members in this department are also RefWorks users, thus making it easier for the Library to sell the RefShare feature to them.

#### **Issues and Considerations**

# **Building Blocks for Success**

#### **Shared Visions**

It is important for staff buy-in, and the library vision has to be supporting the mission of the university as a whole. The Library was fast in responding to the University's DMP (Office of Digital Media Project) invitation for a pilot project in using the e-Reserve module within Blackboard management system. The Library catalogue was initially the only access point for students. Now, access is predominantly via Blackboard, as this is the gateway to course information, assignments and grades. DMP was equally fast in agreeing to include a "My Library" tab within the "my.ryerson.ca" Blackboard screen, thus increasing library's presence in the user module of the University's learning portal.

It is common interest that brought together Ontario academic libraries in consortial acquisitions of expensive electronic resources. Economies of scale and increased buying power through consortia are driving forces behind the collaboration. The RACER project has gone through numerous hurdles in uniting libraries with diverse backgrounds in interlibrary loan operations and systems, and varying levels of staff acceptance to new technology and compromises of local practices. Users' convenience, efficient technology and paperless office are overriding benefits hard to be ignored.

# Infrastructure and Technical Assistance

E-Reserve in Blackboard is definitely a collaboration of expertise. DMP provides the technical know-how of creating records in Blackboard course page and the Library is responsible for creating durable links to journal articles and obtaining permissions for copyrighted items. Without the support of DMP and DE, the Library would not be able to stream its videos that have cleared copyright. Years ago, the Library was not able to participate in a National Film Board's pilot project to stream its movies or videos because such attempt would have taken up half the campus' bandwidth.

# Training and Feedback

RACER is the biggest project involving large-scale training of staff from different institutions (Cheung & Fraser 2007). The project was fortunate to come under the auspices of Ontario's Scholars Portal. A RACER website hosts documentation for ILL staff, and other end-user materials contributed by the consortium partners. Members also support each other through listservs, wikis and other technologies, collaborating on general policies and procedures, goals and objectives. Ryerson has contributed recently to the help tool resource kit – a Camtasia video for RACER beginners. With a new release of Camtasia which includes a self-test feature, our ILL Librarian hopes to receive feedback on the usefulness of the video.

End-user training requires patience, persistence and flexibility to accommodate different expectations. RefWorks made an extensive presence in the Library's information literacy program, forming part of the Library's drop-in sessions for training users to search our databases effectively. It has a self-learn tutorial produced on Camtasia on the Library's Web page. Librarians were trained to promote the product at orientation sessions, even if they meant a 5- minute quick demo. Librarians also presented at annual faculty conferences. These were done on top of traditional marketing strategy like fliers, bookmarks, or new technology such as the LCD panel display in the main Library lobby.

#### Evaluation

Success will not last without user support and interest wanes if feedback is not acted upon. The RACER's End-User Instruction Working Group, with representation from various university libraries, spent months working on user feedback. The search page was re-designed to make it more user-friendly. Even a simple change of language from "Create request" to "blank request form" made a difference. As for E-Reserve, the stunning percentage of Distance Education students not aware of the service, as shown in two consecutive end-of-term surveys, is an indication of

much needed promotion and marketing efforts to the instructors. Without such survey findings, it is easy for us to be complacent about the increased popularity of the service. According to E-Reserve's own statistics, the number of links created in Blackboard almost doubled in two years' time (691 links for 28 courses in 2005/06 and 1,002 links for 79 courses in 2007/08).

# **Stumbling Blocks and Challenges**

#### **Human Factor**

Not everyone is willing to leave their comfort zone and be happy to learn a new tool without compelling reasons for change. The first hurdle to overcome is faculty's time commitment, even before competence development. Although Blackboard is the University's teaching and learning portal, there are faculty who resist the use of Blackboard in favour of their own Web page or some other means that they are used to.

It will be interesting to see how willingly faculty would want to learn RefShare to create their e-reserve links to articles, instead of relying entirely on library staff. To promote this new option, the Digital Support Librarian has created a couple of 3-minute videos on Camtasia to emphasize the ease of learning the tool and the benefits of using it. One-on-one instruction will follow to consolidate training.

#### Access Issues

The SFX links menu was chosen to avoid the total reliance of a particular database and reduce the incidences of non-access due to broken links. Some students may not appreciate this until they actually experience a link breakdown. They would prefer a direct link to the article itself to a SFX screen with a multiple choice menu, and multiple clicks to get to the full-text article. The Digital Support Librarian oversees SFX application and the OCUL Scholars Portal initiative on behalf of Ryerson Library. She has been kept informed of student responses to navigation difficulties. It is hoped that the search process will be streamlined and the location of e-reserve articles become more transparent.

# Copyright Hindrance

A major deterrent in using e-reserve is copyright cost and the time involved in clearing copyright with publishers. Publishers can practically charge anything. Response rate is unpredictable at times. Not all the academic libraries in the province adopt the approach of obtaining copyright permissions on behalf of the faculty and, above all, subsidizing the copyright fees levied by publishers for converting print materials to digital. Most will restrict to electronic links to library subscribed databases, materials in the public domain or documents owned by the faculty or the universities (e.g. lecture notes, exam and test papers). Ryerson E-Reserve, however, attempted from the start to seek copyright permissions on behalf of faculty and subsidize payment within its limited budget. In many instances, E-Reserve could not go ahead with the requests, as the copyright costs far exceeded the internal guidelines established. In one year, the cost factor accounted for nearly 80% of the cancelled requests.

Despite this known copyright hindrance, Ryerson E-Reserve maintained its support for creating an electronic repository of course readings, regardless of format. In addition to textual materials, E-Reserve co-operates with the Library's Audio Visual Services to seek digital rights permissions for streaming VHS videos in the Library collection. Distributors of feature films were adamant in refusing digital licenses. Distributors of educational documentaries, however, have become more receptive to the idea. Some are modifying their purchase formula to include a streaming option that is affordable to educational institutions.

# **External Competitions**

Library's e-reserve is competing with faculty's own Web pages. Faculty can create links themselves and do not bother with technical support in using Blackboard or other course management system. Commercial Publishers are a source of competition. They are aggressive in taking on the role of e-learning support, creating packages of digitized textbooks, with added values of interactive tutorials, assessment and instructions. Where publishers have rights to

statistical sources or journal article databanks, the extent of e-support can go beyond the textbooks to cover a broad spectrum of learning materials, including multimedia or film strips on the subject themes. iTunesU is an example of a new development that allows users to download course materials, audio, video or even interactively, on their mobile devices, and provide the flexible access and the means to integrate work with leisure (e.g. listening to music), individual study and social networking (e.g. Facebook), that becomes the learning behaviour of the new generation of students. Collaboration and integration would be a strategy taken by E-Reserve or the Library to maintain its position as a key player in the field of electronic, mobile or iPod-related delivery of information. For example, the Ryerson Library in January 2008 gave out instructions on how students can install a Ryerson Library catalogue search gadget to their personalized iGoogle or NetVibes home page. In April, the Library added a Google Book link in the Library catalogue. An ISBN match can be made between the book in the library collection and the same title in Google Books. Off-campus students will be able to preview the book before deciding to make a trip to the Library. If the book is checked out, they may be able to view portions of it and then borrow from local libraries. Even if the book is available, they may use the search function of Google Books to preview relevant passages. Ryerson Librarians have tried to be involved in university committees on podcasting initiatives. E-Reserve is watching closely the University's iTunes U pilot project, launched in the summer of 2007, and how effectively it provides the audio course-related supplement to the predominantly textual course readings delivered on the Blackboard system.

#### Conclusion

The world is never static. The Library world has ridden many tides of changes that challenge its role in the teaching and learning process. The recent wave of electronic, mobile and iPod-related technology is no exception. The same advice given by an interlibrary loan practitioner on the demise of E-Reserve (Austin 2004) can be extended to the overall strategy of braving the Web onslaught. Leadership, innovation, collaboration and flexibility are the cornerstones for libraries to adapt to changes, or even take the lead in manipulating changes to advance the libraries' interests in facing the brave new world.

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