It Takes a Library to Support Distance Learners

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ABSTRACT. Wallace Library's philosophy is to create and provide resources and services that will support all users. Consequently, distance learners and distance faculty have a plethora of online resources available to them, some of which is "pushed out," saving time and effort for the library user. The evolvement of Wallace's online resources is continuous, focused on the student or professor's research need from a geographic distance.

INTRODUCTION

Because Rochester Institute of Technology (R.I.T.) distance learners (DLs) are geographically dispersed across 45 states and many countries, the Internet is almost exclusively used for communications among faculty and students. Subsequently, library resources and services that support the eclectic curriculum must be online for anytime and anywhere access that transcends global time zones and personal schedules.

DLs at R.I.T. tend to be mature students who are anxious to continue their education while juggling and managing family and employment. Since DLs are already busy living their lives, coursework information needs to be available in a succinct and easy to use format for effective access to materials and services. Some faculty who teach distance learning classes are also geographically removed from Rochester, NY; Wallace Library's online resources are a lifeline to them, also. The Library's resources and services have evolved to support distance learners and faculty in their quest for information and research assistance since R.I.T. distance learning commenced in 1979.

DISTANCE LEARNING LIBRARIAN

The Library Coordinator for Distance Learning position was newly created in 1998. The position originated from a 1997 Distance Learning Strategic Plan Task Force to increase enrollment by assessing current distance learning (DL) services. For years, the Education Librarian and other subject specialists assisted distance learners (DLs) on a "by need" basis. The "20% increase in registration" goal in the Task Force report required a full-time librarian who would focus on the needs of RIT's DLs and DL Faculty.

COMMUNICATION

Courseware Products

FirstClass, a courseware product (online collaborative tool), is used in R.I.T.'s DL program for communicating coursework asynchronously (non-simultaneous) among students and faculty using a bulletin board system, online chats and e-mail. Most students download the client software, but for students behind office firewalls, the Web version is utilized. The Library has a presence in FirstClass, utilizing a typical DL class format, referred to as a conference. The Library conference bulletin board is a series of e-mail messages with succinct subject lines aimed at keyword scanning of the messages. This format supports inclusion of salient parts of the Wallace Library Web that pertain to DLs available in a condensed format for quick information retrieval. The conference is supplementary to the Wallace Web. Most DLs are busy with jobs and or family and the economy of time is ever present. Each message contains brief, topical information and hyperlinks the student directly to the source of information.

Students and faculty may invite the DL Librarian to chat online by clicking on the chat function. A list of who is currently online is available by clicking on the *Invite* button. The chat feature has enabled many students to solve an information problem on the spot. If the Librarian is not in her office when the invitation is extended and displayed on the computer desktop, the student is e-mailed upon return asking what assistance he or she needed.

Statistics reveal that e-mail via FirstClass is the most popular mode used to ask the DL Librarian questions about library navigation. Interestingly, phone calls come in a close second in communication preference. Most students call when their questions require in-depth or step-by-step instruction answers. Some DLs have called from as distant as Hong Kong and Japan to forge a personal connection in gathering library information.

Other applications of FirstClass that promote using library resources and services are the archiving of questions and answers in folders, a synchronous chat function, and the ability to send instructional PowerPoint presentations as attachments to students regarding researching topics for forthcoming projects and papers. Professors may request online chats including a PowerPoint presentation sent beforehand so students have the opportunity to explore library resources before the chat. A chat invitation for all distance learners is extended the first few weeks of the quarter. The invitation includes information on how to get to the Library conference chat and a message explaining that the format will be one question answered at a time. Any student or professor may join in to ask questions about using the Library. There was a concern about too many participants and not being able to type fast enough to answer question. So far, the chats have been manageable. These chats usually take place at 9:00-10:00pm, when the majority of students are available.

Another R.I.T. courseware that supports DLs is Blackboard, a Web-based product. The Library has a presence in a typical course format there, also. While working in Blackboard, students are able to electronically access Library Support and locate information needed for their research. Clicking on the *External Links* button takes students to a list of online library resources and services by topic to assist in their quick access to and retrieval of information for their research. The *Staff Information* button brings students to a listing of Wallace's reference staff, including subject specialists.

Contact information and a list of what and how they can provide library assistance is also included.

Subject Specialists

When DLs contact the Distance Learning Librarian, she may either respond directly or consult with a bibliographer. In-depth research or specific subject material requests are directed to Wallace librarians specializing in particular fields of study. DL Faculty are contacted by the DL Librarian requesting a list of assignments or a syllabus in advance of a course. The DL Librarian and bibliographers jointly compile resources for specific DL courses. Information is e-mailed to students through an individual course bulletin board in FirstClass or resources are inputted in Blackboard via the *Library Support* area or within the course itself. Pushing information out within the course format enables DLs to get a head start on learning how to use the Library.

SERVICES TO DISTANCE LEARNERS

Electronic Course Reserves

When Wallace Library's Electronic Reserve pilot project was initiated in 1995, we expected the Institute's Office of Distance Learning to be a significant user of the service. We created a Web-based, homegrown system integrated with our online catalog, emphasizing anytime/anyplace delivery driven by faculty requests. We also made Electronic Reserves or E-Reserves open to many different file formats, although Acrobat's PDF (portable document format) is predominantly used.

Because of our delivery method, the use of E-Reserves by distance learning professors and utilized by distance learners is an obvious fit. Instead, the Library found that the average distance learning student is older than on-campus students, had older machines, a slower connection rate and less experience with computers. In addition, distance learning professors typically had far more materials that needed to be scanned than the average on-campus professor for the same or similar course. This, in part, was due to the "Viewing Guides" that accompany videos used for class. For some classes the guides can be 300-500 pages in length and may include hand written overheads. The sheer mass of materials would result in file sizes that were prohibitive to download, especially for 1995-1996 technology.

Surprisingly, Distance Learning was not a major user of our new electronic reserve service. One professor used the service for items such as old quiz and test solutions. Slowly that number started to grow. In 1997, Distance Learning considered utilizing the E-Reserve service on a much larger scale. E-Reserves was given one or two professors a quarter in fields such as Information Technology, where students were expected to have a familiarity with using their computers, the Internet, and online resources. Not surprisingly, these professors had printed out many materials from the Web and it appeared as if all we would have to do is point to their resources. Unfortunately, we discovered that by the time we received print-outs from faculty, many of the resources had already been moved or no longer existed on sites as large as the Environmental Protection Agency's site. The decision was to make PDFs (Portable

Document Formats) out of Web pages straight from the electronic original, complete with the URL (Uniform Resource Locator) printed on top, using Acrobat's PDF Writer (part of the Acrobat 3.0 and now 4.0 packages). Using this format, the information is preserved and also allows students to go to the Web page if desired.

In 1998, Distance Learning decided to migrate to posting all paper course materials electronically. They would assume responsibility for scanning all materials, the vast majority were created by faculty and comprised about a third of all courses offered in a distance learning format. Distance Learning also assumed responsibility for tech support and information dissemination regarding access to these materials. The Library assumed responsibility for posting the electronic materials through our E-Reserve service. A student taking on-campus and distance learning courses at the same time would have only one point of access to all their materials. Students were offered the option of downloading their course materials for free or buying them at the bookstore (based on faculty requests, copyrighted materials were only offered either electronically or traditionally, not both. Distance Learning also was responsible for copyright clearance). Again, because of the sheer size of many of these materials, student use started slowly and was limited many times to students who had high-speed Internet access either through work or school.

During the 1998-1999 academic year, Distance Learning and Wallace Library carefully scrutinized materials being offered electronically, examining ways to cut file size down and increase student use. Both the Library and Distance Learning used Acrobat Capture 2.0 and Acrobat 3.0 at that time. Acrobat Capture scans in all pages as .tif documents first, then compiles and compresses those .tif images into PDFs. By scanning, cleaning up the .tif images in Adobe Photoshop and then outputting to PDF in three distinct steps, electronic reserves was able to reduce file size by 10%. This resulted in faster download times, more professional looking materials and decreased storage needs on the Library's computer. Specifically, cleaning up files meant eliminating black borders from copied book chapters or articles, hole punch marks and artifacts that can result from multigenerational photocopying. The result was positive; student use of materials continues to grow.

A myriad of scanned materials were printouts from PowerPoint presentations. Unfortunately, an abundance of the PowerPoint presentations were old and had been passed on from professor to professor, resulting in electronic originals no longer available. The added effort of making the presentations electronically available commenced a reevaluation regarding electronic originals and the implications of requesting electronic originals whenever possible. If E-Reserves does not receive electronic originals for an article, should the Library be responsible for locating an original copy if possible? If a professor brings in an electronic original of a PowerPoint presentation, for example, are they also required to present Distance Learning with a paper original for the bookstore to copy and sell? If not, whose responsibility is it to print a copy? Should it be printed with one slide per page or three? Should it be only available electronically? If E-Reserves is given an electronic original in any format, should the Library make it available in its native format? If so, should it only be made available in that native format? What if the bookstore was presented with electronic originals instead of paper originals? Electronic versions are almost always a better copy than materials copied on a copy machine, which translates into a good reproduction for students to read.

Many of these questions were a rehashing of questions the Library had to resolve for on-campus faculty. Clearly, DL faculty and student usage was lagging by a few years. For example, it was determined that all materials for on-campus courses would be converted to PDF unless specifically requested not to, reasoning that students found downloading and installing the Acrobat Reader a significant hurdle to overcome. We were concerned students would have to download and install Acrobat Reader for one class, and in another class have to download a different viewer, such as for Microsoft Word. Wallace Library and Distance Learning have found (through surveys and student contact) that it can be overwhelming to DLs to require too many technologies. It became clear that adhering to a common denominator technology would be another key to success for our users. Since Acrobat Reader is packaged with the standard Internet Explorer and Netscape Navigator download, a level of stress was removed from students having to acquire the Reader for accessing PDF files.

The Library became responsible for finding electronic originals of articles whenever possible. In summer 1999, the responsibility of scanning all materials was shifted from Distance Learning to the Library. The opportunity was provided to make a decision about requesting electronic originals from faculty (converting them to PDF if available), finding online electronic originals and, if necessary, scanning. When reference desk activity slows, Wallace's reference staff searches for designated articles and files them at the reference desk for Electronic Reserves to pick up. Since the reference staff is knowledgeable about using databases and locating information, it is a perfect fit for reference to find online materials.

R.I.T.'s Mail and Reprographic Services purchased a Xerox Docutek machine. Distance Learning requested that the Library take professor-generated materials (that were converted into PDFs for e-reserves) and make them available to the bookstore for course pack printing. Otherwise, Distance Learning was responsible for transporting the materials to the bookstore and the bookstore experienced a laborious process of compiling and copying materials for course packs. The Library mapped a server (restricted access to a single drive on the Library's server) for the bookstore to download the PDF files and copy them from an electronic format. Again, the electronic original provides a better copy to students.

An additional quality control service offered from electronic reserves is the "FAX transfigured into a PDF" option. Faculty may FAX an article or other materials to E-Reserves where the transmitted FAX is recognized by Adobe Capture software. The Adobe software takes the document and transforms it in one step to a PDF file, ready to be posted on the R.I.T. server to be accessed by students.

E-Reserves continues to request electronic originals from faculty, educate them about finding resources on the Web or through the Library's research databases. R.I.T. Faculty are educated on how their students use their materials and what "best practices" should be implemented for readable copies. This is accomplished through PowerPoint classes, tips from Electronic Reserves, and DL staff's recommendations (instructional designers and media staff).

Interlibrary Loan

R.I.T.'s original distance learning classes were self-contained. Students received all necessary materials from their professor through Distance Learning; there was no special involvement with the Library. Although details on commencing the service are vague, it is apparent that home delivery of library materials to DLs began sometime in the 1980's as a result of a request from a distance learner. An agreement, much of which remains in effect, was reached between the Library's Circulation Department and Distance Learning where the Library agreed to provide books and article photocopies from our collection to distance learners. Distance Learning would pay for the postage; the students were responsible for any copying costs as well as the cost of returning materials to the Library. The Library also agreed to provide Interlibrary Loan (ILL) service for both books and articles to distance learners with a similar fee arrangement for shipping. At the time, we passed on the direct ILL charges from other libraries to our on-campus ILL users; it is not clear whether or not these charges were also passed on to distance learners. Distance learners were encouraged to place their requests via e-mail, although phone or FAX requests were accepted. The Interlibrary Loan Department (then a part of Circulation) processed DL requests for all materials (in-house and ILL) and handled all shipping and billing; the number of students using the service was very small.

Today, the Library's Information Delivery Services (IDS) department utilizes Atlas Systems Inc.'s ILLiad software to provide convenient and fast delivery of library materials to DLs; our implementation of ILLiad is called IDS Express http://ill.rit.edu DLs use IDS Express to request any materials needed regardless of the source. IDS Express' easy-to-use, Web-based, customer interface enables students to make (and view the status of) requests at any time. In-house materials are pulled, copied if necessary, and sent to distance learning students via FedEx, usually the same day the request is received. If the requested material is not owned by Wallace Library, an ILL request is made; materials from lending libraries are shipped via FedEx to distance learners the same day they are received by IDS. As R.I.T.'s Distance Learners are overwhelmingly "singletons" spread out across the country, setting up reciprocal borrowing agreements at institutions near them is not practical. However, our rapid turnaround of ILL requests coupled with FedEx delivery has been very successful. We are fortunate to have affordable FedEx rates available to us through the Institute's affiliation with the National Technical Institute for the Deaf, which is a Federal agency. In addition to fast delivery, FedEx allows us to track shipments via their Website and to verify delivery.

Articles received electronically via Ariel <http://www.rlg.org/ariel/index.html> also can be delivered to the Web through IDS Express, if a distance learner chooses. With a PC, printer, scanner and Ariel software (document transmission software from Research Libraries Group) a library can scan articles, photos, and other documents, then transmit the electronic images to other Ariel workstations anywhere in the world, using either FTP (File Transfer Protocol) or MIME e-mail standards. Because Ariel transmits using the Internet, there are no long distance phone charges and documents are transmitted faster and more clearly than FAX transmissions. Ariel automatically adjusts to handle graphic and grayscale material. Documents received via user-friendly Ariel can be printed out and a hardcopy given to the patron or the document can be sent electronically to the patron's e-mail account, thus saving the Library labor and money. Home delivery is available to anyone registered in a distance learning course, even if they are located here

in Rochester. The only stipulation is that they live off-campus (on-campus students may enroll in distance courses).

There is no charge to distance learners for receiving materials. They are, however, responsible for the cost of returning materials to the Library. Currently, the shipping and copying costs are billed to Distance Learning. Eventually, the funding for this will be transferred to the Library. The number of requests, though up substantially from the 1980's, is still small, 263 in 1999/2000. Using IDS Express we could easily handle much more volume. Remarkably, no books have been lost in transit over the years and overdue rates are equivalent to on-campus ILL users. With the exception of having to wait a day for FedEx delivery, DLs have equivalent service to our on-campus users. Since we do not offer home delivery to all our users, nor posting or copy service to on-campus users, it could be argued that DLs receive better service. For further information, see the "Distance Learning FAQ" on the IDS Express log-in page <http://ill.rit.edu>.

RESEARCH DATABASES

Wallace Library has a long history of utilizing technology to provide and improve access to electronic resources to its users. The Library implemented its first local computer system in 1962, followed by a succession of three library automation systems in the decades that followed.

The year 1993 marked Wallace Library's first foray in delivering online access to resources via a library-developed and maintained gopher server. Wallace Library's Einstein online catalog and several bibliographic and full-text databases became available via telnet in 1994 and in 1995 we began a migration to the Web.

Authentication

From the inception of the Library's presence on the Wide World Web, library staff embraced the goal of equitable access to our licensed electronic resources for both the local and distant learner. We assumed every student, regardless of physical location, may need and want to access library resources remotely. The challenge of authenticating current students, faculty and staff coming from non-R.I.T. IP (Internet protocol) addresses and thus allowing access to proprietary services was tackled early on. By 1996, R.I.T.'s Information Technology Services solved the remote access question by creating a locally-designed authentication system before it was possible to purchase one commercially. This solution provided access to all online databases by all users, regardless of geographic location.

In creating an intermediary authentication server several goals were established: 1.) to use existing sources of information as the basis for authentication rather than requiring the Library to maintain a separate database of users and passwords 2.) authenticate users once for access to all resources 3.) not require users to change the configurations of their Web browsers and 4.) the proxy to work with all proprietary services. The final product met these goals by authenticating remote users by asking them to input their unique R.I.T. DCE (distributed computing environment account) username and password. The proxy server seamlessly and invisibly sends the search request to the vendor as if the users were coming from an R.I.T. IP address.

In winter 2000, the Library investigated and purchased an alternative authentication solution, EZProxy. The advent of EZProxy from Useful Utilities <http://www.usefulutilities.com/> brought an affordable and easy to configure database validation and delivery mechanism to libraries in need of an authentication solution for remote users. Wallace Library opted to install and offer EZProxy as our first-line intermediary server to licensed databases, partially due to the ease and speed it offers to both the Library and our patrons. In addition, in-house control and maintenance of the server and software negates our dependency on R.I.T.'s Information Technology & Services, a department that feels the effect and pressures of the growing computer-related needs of a large and diverse campus. The Library continues to point users to the R.I.T. proxy server as an alternate access point should EZProxy be experiencing technical difficulties.

Databases

In 1995, library databases were available via a telnet connection, such as, CARL UnCover, OCLC FirstSearch, Lexis-Nexis, Dow Jones and several Wilson databases. Every year since then has seen a huge leap in both breadth and quantity.

Today, Wallace Library features over 150 commercial online reference databases to meet the diverse discipline research and reference needs of the R.I.T. community. Electronic databases vary dramatically in subject coverage, content, search capabilities, user interface and type (e.g. bibliographic citation, full-text, reference). Approximately one third of the Library's databases offer full-content, such as scholarly journals, popular and general magazines, trade journals, newspapers, conference proceedings, encyclopedias, medical books, newswires, reports, case studies, statistical data, TV and radio transcripts, statutes, legal information and more. All databases are available to authorized remote users 24 / 7 via the free DiaIIP (R.I.T. as Internet Service Provider) service or, if coming from an outside Internet Service Provider, via R.I.T.'s proxy-server.

Occasionally, library users experience problems accessing the research databases. The Electronic Resources Librarian developed a Web-based *problem report form*. It is located on the *Research Databases* page where it provides an additional avenue (aside from telephone, e-mail and in-person contact) for online database users to communicate problems directly to the Electronic Resources Librarian who troubleshoots the impasse. Examples of library database problems reported using the form includes connection problems and database error messages. The Librarian makes every effort to act on problems quickly. The library user receives a personal response back on the problem's status or solution. To fill out the *problem report form*, the user inputs basic personal information (for contact purposes) and is asked a series of short questions. The form is electronically submitted to the Librarian. Interspersed with the form's questions are tips directed to the user that may assist in troubleshooting the problem on one's own. For example, we ask where the user is connecting from, a computer at home, work or another location. The user "tip" identified with this question briefly explains about accessing the Library from a work location. The user's employer may have "firewalls" restricting Internet access. The patron needs to consult with the company's network administrator to see if access is permitted. If allowed, how does one set the company's proxy configuration in a Web browser's preferences. Other tips include recommended browser

versions (and links to download updates), how to enable "cookies" and JavaScript, and information related to R.I.T. computer accounts as well as contact information for online learners.

Electronic Research Full-text

Direct links to online full-text journals are accessible via Wallace Library's in-house created, "E-Content Finder," searchable by title and ISSN with an ability to browse by publisher and topic area. Electronic books may also be searched through this venue. Over 19,800 links to full-text titles are currently in the database including duplicate titles due to the overlap in journal database aggregator's holdings.

Digital Images

A variety of digital image collections are available via the Library's Web site: local collections (examples: Archives, Polish Posters, Art Collection) and purchased collections (examples: 50,000 works of art via Art Museum Image Consortium (AMICO) Library and 700,000 photographs accessible through AP Photo Archive).

ELECTRONIC BOOKS

As part of Wallace's commitment to delivering full-content to our remote and local users, the Library, as an early adopter, approached two electronic book/content vendors who, as of then, had focused on the corporate market to date. Through these contacts the Library was able to negotiate licenses and offer the products, Books24x7.com and ITKnowledge to our community prior to the company's penetration into the academic marketplace. Both of these offerings allow users to search, browse, and view the full contents of hundreds of current technical and computer books from top publishers in this area, as well as source code, examples and more. In addition to the computer and technical electronic books, Wallace Library participated in the purchase of a shared collection of 2,000 electronic books via netLibrary. This shared collection represents a diverse range of subjects such as business, history, literature, social sciences, science and technology and more. The Library projects that our electronic book offerings should reach 4,500 titles by the end of 2000.

INSTRUCTION

Wallace librarians and staff create online instruction and tutorials for library users. Online instruction benefits library users wherever they are located: in the Library, at home, or in another country or state. Virtual instruction is invaluable for students at a distance, as DLs do not have the localized convenience of asking friends, a librarian or professor when questions arise about how to navigate the Library. The majority of R.I.T. DLs are returning students after a long hiatus from academia. Learning online technology is potentially a steep curve in effectively utilizing electronic resources, such as online databases, navigating a library Web site, never mind understanding the software / hardware milieu. The employment of metadata explaining "how to use" and "how to

find" information is essential for students to make use of and understand the online environment.

Library instruction is accessed via the Instruction and Training button on Wallace's homepage <http://wally.rit.edu/>. One of the exercises is the "Scavenger Hunt for Distance Learners." It is an interactive tutorial on learning basics to more intermediate skills in utilizing online library resources. There are 24 questions requiring fundamental to more demanding answers encompassing our online public access catalog (OPAC), "Einstein," Information Delivery Services (IDS), instruction, search strategies, and online database information. "Hint" boxes are available for background reading to answer questions.

Guides

Guides have also been developed to assist students who need access to library materials that support projects, papers, and research:
- Citation formats
- Library of Congress Classification System
- Distinguishing Scholarly From Non-Scholarly Periodicals
- Term Paper Starters
- Evaluating Information From the Internet

For the DL student who cannot physically browse the shelves, online guides aid in virtually locating books of interest that can be supplied by Wallace's IDS. The guide, *Controversial Issues: Pro and Con Discussion,* lists several subject areas and issues, such as criminal justice / legal, environmental, medical / psychological, political and social concerns. Respective monograph call numbers are also listed. Consequently, a DL student may copy and paste or type in the call number in Einstein <http://albert.rit.edu/> under the Call Number choice and electronically browse the shelf near the book's call number that is typed in. A student searching for more books on a particular topic may use the same technique of typing in the call number of a book located in Einstein in the Call Number search box and will receive a listing of books (by call number) to virtually browse. Wallace's new books are listed by title and by subject in Einstein with updates every month. There is also a link where students may request new materials for the Library and for their subsequent use.

For those assignments that require students to take a stance on other controversial issues requiring journal articles, a *Point of View* journal guide provides a listing of alternative press and mainstream journals ranging from conservative, libertarian, to liberal and socialist /communist perspectives. Cultural criticisms, environmental attitudes, and religious / ethical viewpoints are also included. They are available online by taking advantage of Wallace's 150+ online databases <http://wally.rit.edu/electronic/electronic.html>. Also online, are resources for locating information for "Finding Book Reviews/Criticism." This guide delineates databases where students may electronically find book reviews and criticism on books of interest or for assignments.

Course specific guides are developed by subject specialist librarians to assist students and faculty to learn about resources in a particular field of study, such as Health

Systems Administration, Masters of Business Administration, Politics and International Relations, Telecommunications, Nutrition, Cross-Disciplinary Professional Studies, and more. These subject guides are comprised of sections relating to general library information, electronic databases, obtaining journal articles, monographs, and other documents. Information on using electronic course reserves, WWW resources, and the expertise of librarians are also incorporated.

Video / Audio Streamed Instruction

The Distance Learning Librarian develops guides on her distance learning Web pages <http://wally.rit.edu/instruction/dl/dl.htm> to support students in navigating through the myriad of resources. Distance Learning mails an orientation Compact Disk (CD) to new DL students. The CD includes links to resources to acclimate students into the electronic information environment. Documents, such as a *Frequently Asked Question* page addresses general library questions, Information Delivery Services, Electronic Course Reserves, and the use of electronic resources. A *Reference Guide* was created to be a one-page print out for quick referral to basic resources and services that DLs may require. It is mailed to DLs in their orientation package. *Research Basics* was compiled to address the online tools necessary for the research process. DLs need to know how to connect to library databases, details about their DCE account (distributed computing environment), about the FirstClass Wallace Library Conference, and obtaining library materials from a distance. The *Instructional Video - Using Wallace Library,* reiterates material covered in the distance learning Web pages. The streamed video has an audio component and captioned text, both to assist the differently-abled, including blind and deaf students. It is personalized with voice and a video of the Librarian speaking. Hyperlinks in the text refer students to useful Web pages mentioned in the presentation. There is a redundancy of information in the distance learning Web pages. It is helpful to deliver information in various configurations to "catch the attention" of DLs.

Wallace Library has other examples of video / audio streamed instruction <http://wally.rit.edu/instruction/dl/dbaseoverview.html> focusing on an overview of using databases with individual instruction modules on using specific databases and techniques, such as Boolean Search Techniques, Associated Press (AP) Photo Archives, and Periodical Abstracts, all having similar pedagogical purpose. In developing streamed instruction, following Edgar Dale's instructional technology and human interaction theory of combining abstract ideas with concrete experience, learning becomes more meaningful.[1] Dale's Cone of Experience, adapted by Katherine Tift, exemplifies the learning process when activity is correlated with reading, listening, watching, and participating in the instruction. People generally remember 10% of what they read, 20% of what they hear, 30% of what they see, 50% of what they see and hear, 70% of what they say and write, and 90% of what they say as they perform a task.[2] Odds are increased for less abstract learning when students are able to participate in their own education by interacting with an online tutorial.

Computer Based Training

Another option for online tutorials is Computer Based Training (CBT). CBT is comprised of basic to advanced interactive tutorials. Available online, R.I.T. community users may download the software on home or office computers. Over 300 tutorials are accessible, including Microsoft Office 97/98 and 2000, Java and Visual Basic programming, Lotus Notes, Electronic Commerce, Oracle, Unix, and more. These tutorials are used to garner additional skills to complement employment, coursework, or may be assigned by faculty.

Library News Flash

Library users may stay current with Wallace Library's news by subscribing to one or more of the biweekly mailing lists at *Library News Flash* http://wally.rit.edu/listserv/listserv.html, a "news you can use" listserv. On approximately the 1st and 15th of each month subscribers receive information about such topics as: new databases, new books, instructional opportunities, online resources, and more.... tailored to specific subject interests. One may subscribe to more than one mailing list at a time. More subject areas will be added in the future. Achived messages can be read at: http://www.rit.edu/ritbbs. This tool is another avenue for "pushing" information out to one's constituency.

Copyright and Plagiarism

Copyright and Plagiarism issues are more prevalent than ever due to the quick and easy "copy and paste" possibilities on the Internet. Mature DLs who have not been in a higher education environment for years sometimes have rusty writing skills. When to cite, how to cite, how to paraphrase, and when to use quotes are essential skills to avoid infringing on intellectual property. While there will always be students who flagrantly steal copyrighted materials, it is generally believed at R.I.T. that students need to be educated in the art of writing and citing a paper. A Website with links and text <http://wally.rit.edu/instruction/dl/copyplag.html> was created to assist library users in learning what privileges and rights people have in using intellectual property and how to cite and paraphrase. A captioned tutorial will be posted soon for online learners to educate themselves about copyright issues.

Research Tree

The navigation tool that leads library users to all of the above is the Library's *Research Tree* <http://wally.rit.edu/instruction/tree.html>. Research materials are listed in a flow chart-type arrangement, with information resources in a column (trunk) and links to resources that are branching out from the trunk. DLs need assistance in locating research materials in a succinct and salient form. Library Web sites tend to be overflowing with information and data, much of it does not apply to students at a distance. From a patron's information seeking view library resources need to be easily and quickly accessible with clear navigational guides. Librarians can "push out" information to its constituency, but ultimately, students and faculty need to be reminded that effort is required on their part to learn what is available to them.

WORKING WITH DL FACULTY

Students need to access resources that support the curriculum via electronic means. In all fairness to libraries located geographically near DLs, the library which supports the curriculum of the students' educational facility needs to provide necessary materials for coursework. Faculty awareness of library services and resources is crucial to student success. Students can be directed to appropriate resources by faculty if the latter are aware of them.

The Distance Learning Librarian works with R.I.T. faculty in various ways. Scheduled and advertised Brown Bag informational sessions held in the bibliographic instruction lab encompass navigating Wallace's online resources for students and faculty. If faculty are shy about using electronic databases, students will suffer, as the content-rich databases offer research possibilities that are easily accessible. Many faculty require encouragement to learn about and use research databases. Faculty who do use the databases encourage students by assigning papers necessitating the use of online resources. Another benefit of utilizing databases is that electronic reserve materials and course packs make excellent copies when procured from a database.

Subject Specialists also work with their respective faculty (many of whom teach on and off campus) in assisting in course development and research. The DL Librarian and Subject Specialists work together to support faculty and student information needs. Librarians confabulate about research issues and appropriate resources for individuals and course instruction. The Librarian regularly extends invitations for individualized office sessions specific to faculty subject content and 24 / 7 library resources for students. Prospective DL Faculty are also given a mini tour of online resources in conjunction with the DL office's presentation of what a DL class entails. E-mail continues to be an effective medium to consult with faculty or help work out questions or problems they encounter in using the Library.

Working closely with Distance Learning is essential for the Librarian and DL Staff. Distance Learning provides new quarter faculty lists and names of faculty who appear to require library assistance. This is one of the channels for the DL Librarian to contact all new faculty and offer library guidance. A goal of the DL Librarian is to be included in the online learning course process from the beginning when Distance Learning initially meets with faculty. The DL Librarian also regularly attends DL staff meetings to remain abreast of changes that might influence what and how the Library provides information to off campus students and faculty.

ASSESSMENT

Every mid-quarter, Distance Learning e-mails DL students requesting that they fill out an electronic survey that encompasses approximately 24 questions relating to Distance Learning and Wallace Library operations. The Library usually asks 10-12 questions. Examples of what the Library wants to know about its constituency using the Library:

- Any problems using the E-Reserve system, what speed Internet connection is used

- How often does one use the online research databases, overall experience using databases (any problems), who do you contact if you have problems
- Which online instruction is used
- Questions regarding interlibrary loan: have you used it, were you satisfied, what alternative formats would you like your articles in
- Where do students obtain their information (Web, library, other libraries)
- Open-ended question asking users to make comments (positive or negative), and suggestions about using the Library from a distance

Questions are usually formulated to provide information about using the Library while at the same time garnering information about the user's library experience. As a result of student survey responses, library staff has made changes by improving and providing new services to DLs.

CONCLUSION

As distance learning registrations grow there will be an increased need for sundry online resources and services that support varied learning styles. Curriculums evolve and with migration to new degrees and additional topical areas of interest, online research materials must expand to provide requisite resources. The ability to push information out to online library users is essential as is updating software systems that effectively serve the patron at a distance. Users also need to take responsibility for becoming familiar with the Library's services and resources that sometimes feels like a Herculean effort to provide in an online environment.

NOTES

1. Barbara Seels, " The Relationship of Media and ISD Theory: The Unrealized Promise of Dale's Cone of Experience," *Proceedings of Selected Research and Development Presentations at the 1997 National Convention of the Association for Educational Communications and Technology* (19th, Albuquerque, NM, February 14-18, 1997).

2. Vera Homolka, "How to Create Active ESL Lessons," Available: WWW: < http://literacy.kent.edu/~nebraska/research/TTI/vera2.html>. 29 November 2000. Contains information on Dr. Katherine Tift's Cone of Experience pyramid diagram designed for the National Drug Abuse Training Center.