

# ***Research Services for Distant Learners: The OLADE Project***

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## **Introduction**

The University of Calgary/OLADE Project is a unique and creative example of a functional partnership focusing on education, research and study in a global environment. The Project spans continents, integrates educational and government entities, and crosses cultural boundaries.

OLADE, the Latin American Energy Organization, was founded in 1973 by 26 member countries in Latin America and the Caribbean to examine challenges and opportunities related to the developing energy crisis of the time. OLADE recognized the value of collaboration, extra-regional cooperation and the competitive advantage of working together. The area was one of the pioneer regions in the world established to promote energy development, use, and conservation by one centralized and specialized regional agency. Successful past projects have included energy programs for rural and marginal urban areas in Haiti, the Camisea natural gas project in Peru, and electric power interconnections in Chile and the Andes; recent developments are focusing on such projects as water resource management in Costa Rica, Nicaragua, and Guatemala and the Amazon Environmental Institute in Columbia. These activities have helped OLADE to realize its goals: introduction of planning processes in the energy sector; promotion

of programs for increasing energy supplies; marketing, transportation, storage and distribution of hydrocarbons; development of energy policies and potentials; shared resources in an economic transformation; environmental sustainability.

Recognizing the importance of this regional organization and the work that it has completed in the past decades, the University of Calgary (U. of C.) began offering an exciting and innovative educational program in 1997 to assist OLADE in fulfilling its mandate. With funding support from CIDA (Canadian International Development Agency), the U. of C. developed a Masters of Science degree in Energy and the Environment for participants from Latin America (and from other countries worldwide) to train future energy sector leaders.

The 14-month program is delivered each year at the OLADE Headquarters in Quito, Ecuador. It includes a thesis-based project as well as advanced courses and seminars focusing on such Latin American and Caribbean realities as renewable and nonrenewable energy systems, pollution, energy economics, environmental impact assessments, ecology and alternative fuel subsectors. The program is taught in English by professors from the faculties of Environment, Management, Law, and Engineering at the U. of C.; faculty from prestigious Latin American universities; specialists

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from public institutes, state and private sector companies; and, OLADE consultants. Advice concerning the direction and priorities of the program is supplied by the Canadian Industry Advisory Council. Students include technical and managerial professionals from government and energy enterprises who acquire knowledge and develop skills needed to effectively manage energy projects and operations in accordance with sustainable development principles.

Since its inception in 1997, this unique masters' program has expanded to include conferences, workshops and faculty exchanges. In addition, the project has also broadened to include two other key components. An Environmental Legislation Program, which is currently reviewing existing legislation as it relates to the energy laws of the 26 countries, has been developed. The long term purpose is to promote the incorporation of environmentally sound practices and develop frameworks for analysis of environmental laws and model legislation. A database of legislative tables organized by country has been developed with additional funding supplied by the World Bank and the Corporacion Andina de Fomento. A Graduate Certificate Program offering short term courses focusing on energy issues of highest concern in the Latin American and Caribbean regions has been established specifically for professional who are unable to participate in the full 14 month Masters' program.

### **Library Resources and Services**

The University of Calgary Library recognizes that information resources are critical to the success of a student's educational experience and strongly advocates equal access to information for distance education students. Access to appropriate resources and services are of paramount importance and collections, regardless of format and location, are essential to support the academic curriculum and the teaching and research needs of the faculty and students. Today's technology has enabled the Library to support distant learners' research needs across Canada and outside its borders.

To this end, the U. of C. Library, and more specifically the Management Resource Centre (MRC), the Faculty of Management's business school library, decided to offer research assistance, electronic database access and document delivery via the Internet to the

U. of C. students in Quito. Access to the U. of C. Library's component of relevant index databases such as Pollution Abstracts, Environmental Abstracts, and Applied Science and Technology; to full text databases including

ABI Inform; and to the U. of C. Library's online catalogue increases the potential for in-depth research from a wide variety of resources and supports independent, "just in time" research. In particular, journal articles can be searched and selected through the Internet. Full text information can be printed, downloaded or e-mailed. Index citation listings can be requested via document delivery/interlibrary loans from the U. of C. Library.

Connectivity to U. of C. databases and integration of technology into the research process provides positive opportunities for learning and research. Access to this type of information encourages independent research methodologies and provides access to previously unavailable information augmenting the students' work. It was anticipated that the Project would provide quick, easy and discriminate access to information for those who need it regardless of locale. To accomplish this access for off-continent students, however, was a challenge.

### **Initial Investigations**

As a first step, work was undertaken with the U. of C. Library and U. of C. Information Technology staff to implement database connections and authorizations across continents. OLADE computers had to be configured to accommodate connectivity to the U. of C. databases. Database vendors had to be assured that password access applied only to U. of C. students according to our database licenses and contracts.

An initial visit was made in 1998 by the MRC Head to the OLADE Headquarters in Quito to work with the second cohort of 14 students (unfortunately the first intake of students in 1997 were not part of the Project). One section of the visit consisted of a two-hour instruction session on database content, access procedures, search strategies and a general introduction about the importance of research and identification of what was available to the class participants. A list of useful free Internet sites was distributed.

Using the Lotus Notes platform, e-mail connections were established between the U. of C.'s Faculty of Management and the students. It was anticipated that in-depth reference assistance via e-mail would be provided by MRC staff throughout the year of study. The MRC Head also worked individually with the students over a 2 day period assisting with their research, suggesting useful databases and demonstrating a number of sources. This is very similar to services provided to U. of C. on-campus students.

As well, an assessment was made of the functions, services and operations of the Library in the OLADE Headquarters. The OLADE Library in Quito has an excellent collection in the specialized fields of energy and the environment. Library staff are helpful and the students do use some of the 9,000 books and 50 journal titles listed in the Microsis online catalogue. However, there were no indexes or full text databases available and, at the time of the 1998 visit, there was no public access to the Internet for the students in the Library (although the students did have personal computers in the teaching lab). Interlibrary loans were unavailable and virtually unheard of by the students and the OLADE library.

Unfortunately during this first visit, not all students attended the training session and were not on-site for individual assistance. The session had not been formally or clearly advertised to the students. As well, several had remained in Venezuela following a program field trip and at least one other student had returned home because of an impending national strike in Ecuador. Connection to the telnet software (necessary at that point for a number of key databases) was not operational (although it had been successfully tested prior to the visit) and Internet connections were slow, tedious and frustrating. Usage results from the year indicate that students did, in fact, use the databases. Approximately 12 reference questions were received via e-mail and 15 document delivery requests were submitted to the Management Resource Centre. Recommendations were made to the OLADE library staff relating to necessary instruction for incoming students, suggested databases that should be acquired, provision of reference services, development of technology infrastructure, examination of possible document delivery/interlibrary loan services, and training of OLADE library staff. The work with the students and their foray into the research process could be qualified as adequate but not outstanding.

### **Changes and Challenges**

For the third cohort of 15 students in 1999, it was decided to implement a more rigorous and ambitious information literacy program. A three-day Research Skills seminar was designed and presented on-site by the MRC Head. The library instruction/information literacy program of the seminar, consisting of live Internet and Power Point demonstrations as well as hands on searching practice, was presented over two days. This was to ensure that the students understood the research process and could access and demonstrate use of the catalogue, databases

and the Internet. Fortunately for the students, the U. of C. telnet databases had migrated to web-based products and OLADE had implemented improved and faster Internet access. The library resources web page was improved. An online form for document delivery was designed and borrowing procedures from the U. of C. Library were refined.

The OLADE library staff member also participated in the seminar to allow her to provide on-site research assistance later in the year. The list of free useful Internet sites was updated. The seminar was also enhanced to include one-day instruction on thesis proposal design and the use of Power Point for student presentations.

The objectives of the seminar were successfully achieved. A follow-up survey indicated that the students felt they had received the necessary training for research skill development and could use the index and full-text databases, the online catalogue, web sites and document delivery. Complex reference questions increased to 26 over the period of one year and document delivery requests numbered 363. General consensus was that a very real and valuable partnership was created between the OLADE students and the U. of C. Library in an excellent example of the use of technology in a learning environment.

### **Next Phase—Distance Delivery**

After two years of offering training in the traditional manner with faculty and MRC staff participating in on-site instruction, the U. of C./OLADE Project decided to pursue exclusive electronic course delivery. A long-term anticipated result was that courses or seminars delivered electronically anywhere would allow more individuals within the Latin American and Caribbean areas to participate in the program without the Quito residency.

In late 1999, a pilot project was organized utilizing distance technology, not only to test the technical aspects of computer delivery but also to determine the students' response to multimedia course components. One course (Human Resources Management) and one seminar (Environmental Dispute Mechanisms) were prepared for the new intake of 22 students. They still had to attend classes at the OLADE Headquarters in Quito where each student had a personal workstation. It was decided to use Lotus Notes Learning Space application software instead of a purely web-based product such as Web CT. Several factors precipitated this decision. The capabilities of the telecommunications link between

Quito and Calgary and the necessity of a sustained live connection due to the distance between the continents, is sometimes questionable. Software had to have the ability to update new information and course content easily. Security issues, including the ability to block unauthorized access and copying, is important.

A variety of media from videotaping to online textbooks and notes are available with the Lotus Notes Learning Space application. Following course content design by the U. of C. faculty and with assistance from an on-site facilitator at OLADE, the course and seminar were offered in early 2000. Lessons learned included the challenge of the delivery format for the students. Because computer skills of incoming students vary to a great extent, presentation timing needs to be better defined. Technical support from an on-site facilitator was extremely important to assist students. Further examination needed to be made of the interactive capabilities of the software—its functionality and the types of content best suited for this format. The evaluation of these variables will allow for better decision making in the future regarding which courses are best suited for distance technology.

The electronic delivery pilot project also included the library instruction/information literacy component of the program. However, in this case, the Learning Space application was deemed inappropriate. Interactivity between the MRC librarian and the students was not essential to the understanding of database functionality and document delivery operations and there were no initial assignments directly related to database use. It was decided to develop a CD-ROM product instead.

The instructional goal of the Research Skills distance module was to provide the students with enough familiarity with the relevant information and search techniques to locate materials related to a specific topic. The modular tutorial was to be informative, not interactive, and equivalent to approximately 4 hours of instructional time.

In May 2000 work began on the development of a CD-ROM product to achieve the information literacy goal. The CD-ROM had to be as clear and accurate as possible, easy to use but also cost effective. The product had to provide an overview of database content through demonstrations and explanations as well as hands-on practice capability. The CD-ROM also had to allow for user written instructions as well as direct connection to the Internet but could not solely depend on live web connections because of potential connection problems.

Working with the OLADE Project Director and the U. of C. Information Commons, the Head of MRC scripted the

database, online catalogue and search strategy information, compiled written instruction guides and revised the OLADE web page and free Internet sites. A graphic artist created the design and a programmer developed the web site. A technical on-site facilitator's guide was prepared to explain the chronology of the presentation and how to move between various modules. Smart Board technology was utilized for demonstration purposes. The session was videotaped over the period of one day and was subsequently edited to insert heading and sections, to add Internet site addresses and explanatory notes for smooth organizational transition between modules. The result was a combination audio-voice over with teaching screens and a video, which personalized the presentation. Once completed, the video was transferred to a CD-ROM.

On July 8, 2000 the Research Skills seminar was held in Quito. Each of the 22 students was provided with a copy of the CD-ROM which contained video clips, textual reference information, links to databases and useful web sites, description of the hands-on practice sessions and an outline of a project connected to the seminar. An on-site facilitator for technical support and the OLADE library staff member were available for consultation. The facilitators provided orientation to students on the use of the CD-ROM, information on shifts between the video and the websites, and guided students through structured search examples. They answered questions and established that OLADE library staff were the first point of contact for research assistance.

A questionnaire completed by all students indicated the success of the Research Skills seminar and the CD-ROM. More than 75% of the students agreed or strongly agreed that the seminar was informative and well organized, that the objectives were well stated and the subject areas were appropriate. Approximately 80% agreed or strongly agreed that the distance delivery environment was effectively used, that students' interest was stimulated and that sound knowledge and technical competence of the instructor was evident. Individual comments such as: "the CD can be used at any time as a reference tool and does not have to be used sequentially when students need to review material"; "the CD is user-friendly and practical"; "it was the best option to demonstrate the U. of C. library materials"; the "multimedia was easy to follow"; and "it was an excellent idea for distance learning" demonstrate that Research Skills and information literacy Project is on the right track. As well, students now use the OLADE library staff for research assistance. To date the MRC has received 135 document

delivery requests and OLADE library staff report that students have asked an average of one question per week on CD-ROM use and access and an average of 30 research questions per week. These positive comments reinforced U. of C. activities. A revised version will be offered to the 2001 students. Using technology for learning at a distance can be successful.

**Conclusion**

In the global business arena the U. of C./OLADE project is an outstanding example of North-South collaboration and

an exceptional model of cross-cultural and intercontinental working relationships. More importantly for librarians, the involvement of the Management Resource Centre and the University of Calgary Library demonstrates what can be done for distant learners. The delivery of research resources is an important to off-campus students as to students on-site. Database access via the Internet and document delivery service crosses faculty, department, and geographical boundaries and supports worldwide connectivity to information. The students deserve the best that can be innovatively provided. We intend that the outcomes are as positive as the beginnings.