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EDITORIAL

This issue of DEOSNEWS contains two articles. The first, by Rory McGreal, describes distance education programs currently operating in Canadian secondary schools. The second, by Ronald Jimmerson and Kristina Ann Moberg-Hendron, describes a process used to identify and assess the continuing education needs of teaching professionals.

EXEMPLARY PROGRAMS OF SECONDARY DISTANCE EDUCATION IN CANADA

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INTRODUCTION

Distance education in Canadian high schools is growing at a rapid rate. Canada's immense geography is probably the principal stimulus to the growth of distance education in the different provinces. Audiographic teleconferencing networks that communicate using voice and data images are presently established in at least five provinces. High school courses are being delivered by radio to remote Native bands. Video teleconferencing using compressed video is being used experimentally. An interprovincial program using computer mediated communications for training young writers is also accessed by some schools.

The first audiographic teleconferencing network used by high schools in Canada was started in the province of Newfoundland more than four years ago. At present networks exist in British Columbia, Alberta, Manitoba and Ontario. The largest one, Contact North, is in Northern Ontario.

ELECTRONIC SITE TOURS

The secondary school team at Contact North has been promoting the delivery of electronic "site tours" of museums and art galleries to students in over 100 secondary schools in the North. So far, tours have been conducted by the Art Gallery of Ontario, the Royal Canadian Mint, the Currency Museum, the Royal Ontario Museum, the Museum of Civilization, the McMichael Canadian Art Collection and the Thunder Bay Art Gallery.

In these site tours, a representative of a museum or gallery takes the students on a "tour" by showing audiographic slides while students

remain in their home community. The tour leader annotates on the slide while interacting with the students through audio teleconferencing. Students participate by making comments, asking and answering questions, and by writing and pointing on the tablets at their respective sites. The tours are given in both English and French and they reach students in the remotest regions of the province. Some of the participants are students in Young Offender Units. The tours have been very well received by the students, the teachers, and by the remote communities that have had the opportunity of participating.

This semester (Spring 1993), the Royal Ontario Museum has delivered a series of tours directly related to the high school curriculum on various themes such as Ancient Greece, Mayan Civilization and Evolution. Teachers have also been involved in special training and information sessions. For example, the Art Gallery of Ontario gave a special information teleconference showing examples of their collection, using them to explain to teachers what materials are available and how to access them.

MUSIC AND COMPUTERS

Another interesting experiment in distance education is demonstrated by the Grade 11 Music and Computers course. Using the Contact North, PC-based audiographics network, and adding Macintosh computers to participating sites, a teacher based in Thunder Bay is delivering this course to four schools separated by more than a thousand kilometres. One of the schools is in a Young Offenders Unit. Each site is equipped with a Macintosh LC II computer and software as well as a Musical Instrument Digital Interface (MIDI) and Roland D-5 keyboard synthesizer.

The course is designed to engage the students in creating, synthesizing and composing original works using microelectrical devices such as the microcomputer and synthesizer. Some of the topics covered include operating the synthesizer, understanding the MIDI, operating the sequencer, and audio techniques. This course is having a major impact on the attitudes of residents of isolated communities of the north. Their students now have access to a sophisticated course that is not readily available in most of the larger centers of the province. In addition, the teacher, Phil Cotton, is using the course to train music teachers in the participating schools. One class made up of students studying in five different schools completed the course last year. The second course is being delivered this semester.

WAHSA RADIO COURSES

Wahsa is a native-run high school under the authority of the Northern Nishnawbe Education Council, which is under the direction of the Chiefs of 23 First Nations in Northwestern Ontario. The school is delivering high school programming by radio. Wahsa is an Oji-Cree word meaning "far away", and it really does reach far over 200,000 sq. km. of bush and semi-tundra to the small isolated First Nation communities that are not connected to the road system. Many of the communities served only have access to one telephone line. Teachers in this program broadcast lessons during two or three periods a week from a centre in Sioux Lookout, and the students listen to the broadcasts on personal radios in their communities. Students ask questions using a convener that is connected to the phone line. This year courses at

the grade 9 to 11 levels are being delivered in Mathematics, English and Oji-Cree language. Other courses are given as weekly tutorials over the radio.

This program is possible because of a collaborative agreement with the Native-owned Wawatay (WRN) radio station. The radio station has installed small transmitters in each community. Inwatts lines connect the school directly with the radio station. Learning centres have been established in each community with space for a conference room, a small library, study desks and a counselling area. The distance education equipment consists of a teleconvener, and access to a fax machine, a photocopier, and a VCR with a TV.

VIDEOTELECONFERENCING

In Charlotte County in New Brunswick, high school students in four communities are linking up through video teleconferencing. One site is on remote Grand Manan island in the Bay of Fundy. This project which got underway in September 1992, is being supported by the provincial Department of Education, the Department of Advanced Education and Labour, and the New Brunswick Telephone Company (NBTel).

The participating schools in the county have all been equipped with PictureTel Model 400 systems. Transmissions are being made using the PictureTel proprietary standard over two telephone lines. The units have been used to deliver an English communications and a French second language course. In addition, the units have been used for university and college level programs. They have been limited this year to point to point teleconferencing only because no bridge has been available. NBTel is planning on acquiring a bridge for the 1993-1994 school year.

"WRITERS IN ELECTRONIC RESIDENCE"

Another exciting initiative which began in 1987 is the "Writers in Electronic Residence" program that links student in high schools across Canada with each other and with professional writers. Educational telecommunications is being used as a tool for promoting literacy and proficiency in writing. Simon Fraser University in Vancouver provides the host computer conferencing system and country-wide access through Datapac, permitting nearly all participants to access the network through a local telephone call. The Writers' Development Trust, which is a Canadian charitable organization dedicated to promoting writers and writing, has been supporting the program, not only to promote good writing by high school students, but also to encourage the reading of their writing as a legitimate activity. The writers in "electronic residence" are paid through contributions made by corporate donors, government sponsors and the participating schools and school boards.

In the program, students upload their original creative writing to a conference where it is read by their peers, teachers, and professional writers. They all interact together and comment on the work submitted. Many of the works are used in the schools as part of reading programs. The participating teachers, students, and writers feel that distance is a real resource for the program. Students are encouraged by their communications and exchanges with others from far off places.

In other parts of the country, distance education networks are being established and expanded. Newfoundland has the longest-running audiographics network in the country. In Alberta, the Alberta Distance Education Centre is developing courses on CD-ROM to be used in remote schools for independent study, supplemented with teleconferences with teachers. In northern British Columbia, teachers are integrating audiographic teleconferencing with computer conferencing to deliver courses to students in remote districts. In Manitoba, plans are under way to deliver a Canada-wide upper-level Mathematics course to French speaking students. The Cree School Board in Northern Quebec is experimenting with satellite delivery.

Across Canada, independent initiatives are underway. Through Internet and other means, the innovators are communicating with each other to share their experiences and learn from each others' successes and failures. The federal government has just announced its interest in promoting a national vision for education. Canada is beginning to position itself to take advantage of modern telecommunications in education and prepare students for the world of the twenty-first century.

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DISTANCE GRADUATE EDUCATION FOR TEACHING PROFESSIONALS:A
NEEDS ASSESSMENT

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Abstract

There is little information available to guide faculty and administrators through the process of deciding whether to offer graduate programs off-campus to working professionals. This case study reviews a process used to identify and assess the needs of teaching professionals who might consider graduate study. It also presents findings which suggest that the major obstacles to teaching professionals pursuing graduate work can be overcome through carefully planned distance education.

Introduction

As the pool of traditional college-aged students shrinks there is a concurrent increase in demand for continuing education for professionals who need to upgrade their skills. This situation has forced graduate programs in a variety of fields to re-examine their emphasis on catering to full-time, on-campus graduate students. As Clark, Holmes and Ballard (1984) note, expanding services to attract non-traditional students means reconstructing courses and programs so they attract a field-based group of students who place home, family and work over academic roles. Such restructuring requires careful planning to accommodate non-traditional student needs while protecting the integrity of the graduate program. There is useful information available to help faculty and administrators make decisions about moving conventional programs off campus. See, for example, Blakely (1986) and Clark, Holmes and Ballard (1984). Spencer (1986) offers guidelines for selecting distance education delivery systems. However, there is little information available

about who can and should be served by distance graduate education, nor are there guidelines for assessing the specific needs of potential students in a given area. This paper illustrates an approach to assessing needs of working professionals regarding their interests in pursuing graduate work. The approach serves as a model for others conducting similar needs assessments. The results of our needs assessment illustrate the high potential for enrolling working professionals in graduate work through appropriate distance education programs.

Purpose

This study explored the need for, and barriers to, graduate education for teaching professionals (defined here as professionals who spend part of each working day helping others learn). There are literally thousands of professionals in public and private institutions who spend at least part of each working day helping others gain life and/or work skills. Some of these professionals are trained teachers (for example, vocational educators in high schools and community colleges and some trainers in business and industry). But, many professionals who teach do not consider themselves teachers and have had little or no training in the process of helping others learn. Even those trained in educational disciplines can benefit from graduate level coursework in subjects such as educational philosophy, teaching methods, program planning, evaluation and/or administration of educational programs. This is especially true as the information age requires them to help workers/students to increase their skills in all areas of communication.

There are several problems, however, for university graduate programs attempting to reach this diverse group. One is identifying and contacting these professionals in a given geographical area. Another is designing and delivering relevant graduate coursework so that these busy professionals can take advantage of it. A decision to recruit working professionals into a graduate program is a major one, especially if these professionals work in areas remote from the main campus. Such an initiative requires careful thinking about content, delivery modes, travel time for faculty and students, the potential for use of telecommunications, scheduling problems, barriers to students and access to libraries and other facilities.

With these concerns in mind the graduate program in Continuing and Vocational Education at Washington State University in Pullman initiated a needs assessment as a first step in deciding whether to offer graduate courses and/or a graduate degree through a newly established branch campus in Spokane, eighty miles from the main campus. More specifically the assessment sought to:

1. identify a range of teaching professionals working in diverse public and private institutions/organizations in the Spokane area,
2. determine factors influencing respondents' decisions to enroll in graduate classes or programs,
3. determine respondents' preferred delivery formats.

Assessment Approach

Since the population of teaching professionals was not known and was somewhat difficult to define, the initial task was to identify a sample which represented the range of diverse teaching professionals we wanted to survey. We began the study by conducting in-depth, open-ended interviews with 12 professionals including: a community college personnel director, a private consultant, a county engineer, personnel directors of a retail firm and

a health care facility, personnel employees of the power company, a minister, the director of a church sponsored social services agency, a human resources employee of the local Air Force base, and the coordinator of a volunteer organization. These professionals were selected because they were prominent in their respective groups and represented the diverse types of professionals in this area who have the common task of helping others learn. These interviews served two purposes: 1) interviewees helped identify other professionals who teach and suggested means for contacting them and 2) they provided a basis for developing a mail questionnaire dealing with issues and utilizing language relevant to the target group.

A questionnaire was developed based on the interviews, review of other needs assessment surveys, a literature review and input from a study committee made up of faculty members and the branch campus director. This analysis indicated that in order to make sound decisions we needed data in three areas: 1) characteristics of the respondents, 2) respondents' views on factors influencing their enrollment decisions and 3) their preferred delivery formats. The questionnaire was developed with these goals in mind. It was reviewed several times by the study committee and was pilot tested before being mailed out.

Based on input from the initial interviews, membership lists of professional organizations (e.g. the American Society for Training and Development and teachers' organizations) and the use of telephone directories, employers of professionals who teach were identified. Phone calls were made to each employer to obtain the name and address of an appropriate teaching professional to contact in each office. Questionnaires were mailed to 172 of these professionals. Eighty-one percent of those contacted returned the survey. While this sampling method cannot claim generalizability to all teaching professionals in the Spokane area it does provide data from a wide range of people in our target population. It serves the purpose intended, which was to collect adequate data to make decisions about offering graduate courses or programs in this area.

Respondent Characteristics

Who are these professionals who help others learn as identified by our sampling procedures? A large portion (62%) are women. The ages of respondents ranged from 26 to 69 years with 74% between 31 and 50 years of age. Many of the respondents already hold bachelor's degrees (48%) or master's degrees (36%). Only about 12% had less than a bachelor's degree and about four percent held doctorates. Both undergraduate and graduate degrees held by respondents are in a wide diversity of majors including education, business, sociology, nursing, engineering, biology, religion and history. The titles of positions respondents hold are as varied as their college majors. They include: teacher, trainer, educator, counselor, manager, director, coordinator, consultant, nurse, dean, pastor, extension agent, safety manager and battalion chief. The respondents are "people persons" in careers with direct influence on other people. They provide services to many people including: students, families, school districts, the community, parents, staff, clients, special populations and government.

The key then in deciding whether a graduate program should be targeted at this group is to recognize that, while there might be a common interest in improving skills and facilitating learning, there will also be a diversity of backgrounds, perspectives, knowledge and skills. This can lend a wealth of experiences to the learning environment but can also tax the faculty as they attempt to meet the diverse needs, demands and problems of these working professionals. These issues are common to professionals in graduate school regardless of the field of study. Our case simply illustrates the importance of

understanding learner characteristics and needs before distance education is initiated.

Factors in the Enrollment Decision

Respondents were asked a series of questions related to their interest in enrolling in graduate level courses. About 75% of the respondents felt the availability of graduate level courses was somewhat or very important to advancement in their careers. Eighty-one percent were interested in taking graduate level coursework even if they were not interested in a graduate degree program. About 71% indicated the highest degree they desire is at the graduate level with 22% aiming at a doctoral degree and 49% hoping to earn a master's degree. Eighteen percent were interested in graduate level courses but were not interested in earning a graduate degree. While only about 12% were currently enrolled in a course or program leading to a graduate degree, 36% said they were likely to enroll in a graduate degree program in the next two years. Fifty three-percent believed they would do so within the next five years.

Respondents were asked how important several factors were as a reason for continuing their education. The factors and percentages indicating each as important or very important are as follows: retain a license (21%), earn an advanced degree (63%), qualify for a position in a related but different field (65%), qualify for a position in current field (66%), maintain or increase salary (72%), and improve professional skills or knowledge (94%).

Given the high interest in graduate courses and/or degrees, what other factors influence respondents' decisions to enroll? Following are factors in the enrollment decision and the percentages of respondents rating each as very important or important: financial assistance (55%), class schedules (94%), flexibility of program hours (94%), location of courses (96%), and program content (96%). These results show clearly that graduate courses must be relevant, accessible and offered at times and locations practicable for working professionals.

Finally, respondents were asked to indicate whether certain factors were major obstacles to obtaining a graduate degree. The percentage of respondents indicating each factor as a major obstacle was as follows: child care (4%), lack of employer support (16%), lack of financial support (17%), transferability of college credits (20%), admission requirements (21%), tuition costs (30%), distance from campus resources (33%), commuting distance to attend classes (53%), availability of degree program (54%), family/time constraints (57%), class scheduling (58%), availability of desired courses (65%) and work/time constraints (77%). These data reinforce those discussed above, reemphasizing the importance of time and the need for relevant courses easily accessible to the schedules of working professionals. It is interesting that factors like child care and financial and employer support were obstacles to only a few respondents. The major obstacles were factors which can be controlled or compensated for by the college offering the courses or programs.

Preferred Delivery Formats

Respondents were asked a series of questions to determine their preferred formats for graduate courses and program delivery. Questions were related to their preferred time of year, day of the week, time of day, commuting distance to attend classes and teaching format. When asked which of three time periods would be most convenient for attending classes 39% indicated January to May, 34% said September to December and 27%

selected June to August. This is a fairly even split indicating year-around course offerings would be successful.

The most popular days of the week for course offerings are Monday through Thursday and Saturday. The percentages indicating respective days as very convenient or convenient were as follows: Monday 60%, Tuesday 69%, Wednesday 68%, Thursday 68%, Friday 47%, Saturday 65% and Sunday 36%.

During the work week the most convenient time of day to offer courses is early evening. The percentages of respondents selecting very convenient or convenient for the respective time periods were as follows: early PM 76%, late PM 49%, late afternoon 35%, early AM 34%, all day 21%, late AM 16% and early afternoon 15%. On weekends respondents were more able to meet throughout the day.

Respondents were willing to drive various distances to attend classes. Most prefer to drive less than 30 miles regardless of the number of times the class meets. As the frequency of class meetings increases, the number of miles the respondents are willing to drive decreases. Virtually no one is willing to drive 50 to 100 miles one way to attend classes that meet on any weekly basis. These data clearly show that classes need to be held within Spokane or its immediate suburbs. This would prevent commuting distance from becoming a barrier to enrollment of respondents in classes.

Finally, respondents rated nine different format options for college courses. The most preferable delivery format is having an instructor at a site within 30 minutes driving distance (84% were interested or very interested in this option). The second most popular method is to have courses taught over two-way interactive television where direct interaction with the professor is possible (67% were interested or very interested in this option). The use of video tapes with the instructor available to answer questions and attending classes on Saturday each appealed to about 55% of respondents. Only 2.5% of respondents would commute to the main campus in Pullman 80 miles away and only 3.3% would attend classes at the main campus full time. It is obvious that if these potential students are to be reached, courses must be made available in the Spokane area via on-site instructors and/or interactive television.

Summary and Conclusions

Given that we did not know exactly who our target population was or how to reach them, we were surprised at the interest our diverse group of respondents showed in graduate level courses and programs. The procedures used for reaching a diverse cross section of potential students seemed to be successful. Our experience suggests the need to develop closer ties with the diversity of employers who hire professionals who spend at least part of their time teaching others. Such ties can help identify potential students and can suggest course content and delivery formats most suited to their needs. Because our data are limited to potential students' perceptions, there is a need to supplement these data with perceptions of training needs from employers, supervisors and perhaps from those who are taught by our respondent group.

Our data show clearly that if we intend to reach this group of working professionals we must be willing to offer courses during times and in formats which fit their busy schedules. This includes a willingness to allow for course assignments, thesis research and other student projects which relate to the professionals' work tasks. These professionals cannot and will not quit their jobs or take extended leaves of absence to become full-time,

on-campus students. Given this finding and given a relatively positive response to the use of telecommunications for delivery of courses to these place-bound students, we must be willing to find ways of using these tools effectively.

Based on our data, interested and committed professionals await a chance to enroll in relevant graduate courses and programs. In addition, the major barriers they see are barriers which, for the most part, the university and/or department can control or work around. Reaching these students is clearly a challenge. It is one which may require some dramatic changes in how our graduate programs are structured and administered. But, it is a challenge which needs to be met if we are to meet the educational needs in our changing society. If universities do not adapt to meet this need other less qualified groups will take over the training tasks. Our experience and data indicate that high-quality needs assessments can provide critical information for decision making as well as valuable data to help us better understand nontraditional students. Similar studies need to be conducted in other settings so more can be learned through comparison of cases.

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