

Investing in Online Learning: Potential Benefits and Limitations

Silvia Bartolic-Zlomislic and A.W. (Tony) Bates
The University of British Columbia
silvia.bartolic@ubc.ca, tony.bates@ubc.ca

Introduction

Many institutions worldwide, but particularly in North America, Australia and New Zealand, the United Kingdom, and several other European countries, such as Norway, Denmark and the Netherlands, have started to invest heavily in online teaching. Sometimes the courses are offered entirely at a distance, targeted mainly at students who cannot access a conventional university or college campus. Others might better be described as distributed learning, in that they combine some elements of on-campus teaching with on-line access to materials and discussion forums.

Why are institutions across the world investing so much in online learning? Is the investment justified? This paper attempts to answer these questions by examining preliminary findings from a cost-benefit research project conducted at the University of British Columbia (UBC) and federally funded by the Canadian TeleLearning Network of Centres of Excellence (NCE-Telelearning).

There is a variety of rationales for investing in on-line education, ranging from increasing access to improving the quality of learning to reducing costs to preparing students better for a knowledge-based society to responding to market demand (see, for instance, Dolence and Norris, 1995 or Katz, 1999). To what extent though does the reality match the rhetoric?

In this paper, we look at three Canadian cases, two in British Columbia and one in Ontario. Two of the institutions are universities (UBC and the Ontario Institute for Studies in Education at the University of Toronto - OISE/UT), and one is a two-year university college (Kwantlen College in British Columbia). All three institutions are conventional campus-based institutions. However, both UBC and OISE/UT also have a long history of offering distance education programs, primarily in print format. Kwantlen on the other hand had, prior to this case, no previous experience in distance education. In all three cases, distance learners were the primary target group.

Project Background

The University of British Columbia's Department of Distance Education & Technology conducted a two year study entitled "Developing and Applying a Cost-Benefit Model for Assessing TeleLearning" which was federally funded by the Canadian TeleLearning Networks of Centres of Excellence. The methodology used was based on Bates (1995) ACTIONS model for assessing learning technologies. Issues around the following topic areas were explored:

Access
Costs
Teaching and Learning
Interaction and user-friendliness
Organization
Novelty
Speed.

Data were collected primarily by student questionnaires and student and faculty or staff interviews.

Cost factors investigated included:

- capital and recurrent costs
- production and delivery costs
- fixed and variable costs.

Capital costs are costs for the purchase of equipment or materials. Recurrent costs are costs that occur on an ongoing basis, for example, the cost of computer support. Production costs are those associated with the development of a course/program, while delivery costs are costs associated with the delivery or 'teaching' of course materials. Fixed costs are costs that do not change with output (number of students), while variable costs are those that do. For further explanation, see Rumble (1997).

Benefit and limitation factors assessed included:

- performance driven benefits
- value driven benefits
- societal or "value added" benefits.

Performance driven benefits include elements such as student/instructor satisfaction, learning outcomes, and return on investment. Value driven benefits include increased access, flexibility, and ease of use. Value added benefits include aspects such as reduced traffic to campus and the potential for new markets. For further explanation, see Cukier (1997).

The discussion below will be based on the results of three of six Canadian case studies involved in the project. These include:

- an online Master's level course in Educational Studies "Developing, Designing and Delivering Technology-Based Distributed Learning (EDST 565f)" developed at the University of British Columbia in partnership with the Monterrey Institute of Technology (ITESM) in Mexico. This was the first of five courses to be developed toward a

postgraduate certificate in technology-based distributed learning. The first UBC offering of this course was analyzed (Bartolic-Zlomislic & Bates, 1999);

- an online Master's level course in Education "Research Methods in Education (Research Methods)" developed at the Ontario Institute for Studies in Education/University of Toronto. The Research Methods course was part of OISE/UT's Distance Education Master's program, the first degree program offered fully online at OISE/UT. The session analyzed was the second online offering but the first offering using WebCSILE software (Bartolic-Zlomislic & Brett, 1999);
- an online undergraduate course in Creative Writing (CRWR 1100) developed at Kwantlen University College. The CRWR 1100 course was an introductory course in Creative Writing. A template was developed from this course to create additional online creative writing courses at Kwantlen. The first offering of this course was analyzed (Butschler & Bartolic-Zlomislic, 1999).

The remaining three case studies, based on cases at Télé-université, Québec, Simon Fraser University, and Kitimat Community Skills Centre (both in British Columbia) will be completed by the end of June, 1999. Full case reports will be posted online at <http://det.cstudies.ubc.ca/detsite/researchproj.htm>.

Why Invest in Online Learning?

The three studies so far analyzed reveal several potential benefits to online learning. Main benefits include new markets, economic benefits, international partnerships, reduced time to market, and educational benefits.

New Markets

There is the potential with online learning to tap into markets, both national and international, that cannot be easily accessed with other more traditional forms of course or program delivery. The UBC case study, EDST 565f, for example, tapped into three different target groups:

- students in Latin America, registered with ITESM, Mexico, for a Masters in Educational Technology;
- UBC graduate students registered in an otherwise conventional, on-campus Masters of Education program;
- certificate and audit students from around the world registered with UBC as "non-credit" students.

UBC thereby was able to reach a much larger market than most of its print-based distance courses and a much wider market than is possible for a face-to-face

course. Of the first 40 enrolments with UBC, ten were UBC Masters' students, 18 certificate students, and 12 were audit students (i.e. they paid full fees but did not intend to take a full certificate program and so did not have to submit assignments). The 30 "non-credit students" registered with UBC were from 17 different countries, including China, Japan, Norway, Yugoslavia, USA, and Australia. Of these 30 "non-credit" students, six already had Ph.Ds and twelve had masters degrees. In addition to the 40 students enrolled with UBC, 80 students registered with ITESM (see Bates and Escamilla, 1998, for more details of this program).

Similarly, OISE/UT had students participating in the course who lived in Europe and the Dominican Republic, as well as several students who lived outside of the city of Toronto where OISE/UT is situated. All were intending to complete a full masters program at a distance.

Kwantlen University College was able to sustain a program that had been struggling for viable numbers in an on-campus version. When offered at a distance class size increased to twenty students per offering, and students surveyed all said that the on-line delivery gave them more flexibility, and many said that they would not have been able to have taken the course in an on-campus version.

In addition to the potential of admitting students from around the globe, another new market potential is in the development of fully online graduate degrees. There are several graduate degrees offered entirely at a distance primarily through print-based methods, such as the British Open University's MBA and its Masters in Distance Education. Several have on-line components, such as Athabasca's MBA, but still depend heavily on print. Queen's offers an MBA through a mix of local classes and video-conferencing.

As far as we know, though, there are relatively few graduate degrees offered entirely or even primarily online. This is not surprising, given that it takes several years to develop a whole masters program, and the Web is still only five or six years old, with respect to educational applications. The study findings however suggest an increasing need for such degrees. With the growth of a "knowledge society" comes the need for lifelong learning. It is interesting to note the high proportion of students in the UBC non-credit program who already had higher degree qualifications, but still felt the need to up-date their skills.

At the same time, economic pressures make it difficult for individuals to take several years off from work to attend university on a full time basis. Online graduate degrees offer the opportunity for students to continue their education while at the same time continue working in their field of business. As one student in the Research Methods course offered at OISE/UT said:

The only recommendation is that I wish that they would do [the on-line format] with more programs. ... You can't afford not to work, but you also can't afford to give up your position because if you do who knows what's going on behind your back. (OISE/UT student B)

Economic benefits

One benefit of the UBC postgraduate certificate in technology-based distributed learning program is that over the life of the first course and the entire program of five courses, it is expected that all course development and delivery costs will be fully recovered from fees. Table 1 provides a breakdown of the development and delivery costs of the first course offering of EDST 565f.

Table 1 Educational Studies 565f - Adjusted Costs and Projected Revenues

Source of Cost	1997	1998	1999	2000	Total
Fixed Costs:					
Subject Experts	\$12,000	\$4,000	\$4,000	\$4,000	\$24,000
Internet Specialist	2,100	1,500	1,500	1,500	6,600
Design	1,200	300			1,500
New Procedures	6,000				6,000
Marketing	3,000	3,000	3,000	3,000	12,000
Server	300				300
DE&T Overheads	6,150	2,200	2,125	2,125	12,600
Library	1,000				1,000
Copyright Clearances	700	700	700	700	2,800
International Tutors	3,000	3,000	3,000	3,000	12,000
Total Fixed Costs	\$35,450	\$14,700	\$14,325	\$14,325	\$78,800
Variable costs:					
Tutoring: DE&T	8,800	8,200	8,200	7,040	32,240
Tutoring: Others		5,000	5,000		10,000
Delivery	3,021	4,822	4,822	2,572	15,237
Faculty of Education: 5% of gross	2,014	2,247	2,247	1,320	7,828
Total Variable Costs	\$13,835	\$20,269	\$20,269	\$10,932	\$65,305
Total Costs	\$49,285	\$34,969	\$34,594	\$25,257	\$144,105
Projected Revenue:^a					
UBC Graduate Fees @465/student	5,115	5,580	5,580	3,720	19,995
Certificate Fees @695/student	20,155	33,360	33,360	16,680	103,555
ITESM Rights Payment	15,000	6,000	6,000	6,000	33,000
Total Revenue	\$40,270	\$44,940	\$44,940	\$26,400	\$156,550
Profit (Continuing Studies)	-\$9,015	\$9,971	\$10,346	\$1,143	\$12,445

^a Revenues are based on the following student numbers: 1997: 11 graduate, 29 certificate; 1998: 12 graduate, 48 certificate; 1999: 12 graduate, 48 certificate; 2000: 8 graduate, 24 certificate.

Note: This table is adapted from Bartolic-Zlomislic & Bates (1999).

A small profit will start to be made by UBC at the end of the third year. A more substantial profit will be made over the life of the entire program of five courses as start-up costs (which are substantially higher than ongoing/maintenance costs) will have been absorbed in the first course, EDST 565f. This course served as a template for the other four courses, therefore less time (and money) was required to develop the remaining four courses. The profit serves as a contingency in case unexpected costs arise or projected student numbers are not reached.

Revenues are used in the following three ways:

- money goes to the Faculty of Education to cover their costs in accrediting this program
- money goes to Continuing Studies to pay for departmental overheads
- money goes to the Distance Education & Technology (DE&T) unit to pay for the cost of course development and delivery (unusually, this course was developed by DE&T staff as the subject experts).

Any subsequent profit after all these costs have been repaid is returned to the Associate Vice-President, Continuing Studies, for investment in new Continuing Studies programming.

The UBC - ITESM partnership provided a means for keeping costs down in a market where there is a ceiling on what people are willing to pay. As can be seen in the table, ITESM paid UBC \$15,000 for the rights to offer this course in Latin America. UBC retained the rights for the rest of the world. This helped reduce the risk to both partners. The international partnership provided a context in which an online program can be cost effective and where course fees are kept at a reasonable level ("non-credit" students are charged C\$695 per one semester course, equivalent to three graduate credits).

The economic benefits in the other two studies were less clear. Neither the OISE nor the Kwantlen program was run on a cost-recovery basis. Students in the OISE program were charged the regular graduate fee (C\$740) in Ontario, and the institution would receive the normal weighted FTE per student, although as in many other Canadian institutions this is not necessarily allocated to a course or department on a strict pro-rata basis.

Kwantlen's costs were even more complex, since the course was the first on-line as well as the first distance education course that the college had offered. The on-line development of the first offering of the course was out-sourced to another

institution, while the second offering was developed in-house. However, as with the other two studies, the second offering incurred substantial start-up costs, which need to be averaged over several courses.

There are several general points to be made about economic benefits. The development of on-line courses requires careful analysis of costs. Cost structures are different from both face-to-face and print-based distance learning. There is potential for economies of scale. Institutions though will need to change the way budgets are handled so that costs of different ways of offering courses can be adequately tracked and compared. Budgets need to be allocated so that a substantial proportion of revenues generated flow back to the various units involved in production and delivery. Nevertheless, online courses, especially when developed through partnerships, can be cost-recoverable or at least as cost-effective as conventional courses.

International partnerships

With the potential for global markets comes the opportunity for international partnerships.

Pedagogical benefits due to international partnerships include access to international experts and students. Three international experts in the field of distance and distributed learning were guest tutors for the EDST 565f course. Each tutor moderated and participated in a weeklong discussion forum. In this way, students not only learned from the three UBC instructors but also benefited from the expertise of three additional international experts.

Students also benefited from the highly diverse nature of fellow students due to collaborative components in the course (international discussion groups and collaborative assignments). This is described by the following quote from one of the UBC instructors:

I think a lot of students came a long way in moving from being nervous about collaborative learning to being very enthusiastic about it, particularly our grad students. We had one or two students who refused to co-operate but generally I would say that 75% of the students were in a very successful collaborative learning group where they did a joint assignment. (UBC course tutor 1)

The partnership with ITESM also enabled UBC to sidestep difficult issues regarding admission and accreditation to graduate credit programs. ITESM was responsible for recruiting, assessing and accrediting Latin American students, although they were using courses developed by UBC. Students from other countries who did not meet the UBC graduate requirements or who did not want to register for a full masters program were admitted by UBC as non-credit students.

Furthermore, the partnership with ITESM also helped overcome otherwise difficult language and cultural issues. While the UBC team provided a tutor

guide and help, ITESM provided its own on-line tutors for these courses. ITESM students could choose to be in either a Spanish or an English language discussion forum.

Reduced Time to Market

Another benefit of the online delivery method is that courses can be developed and revised very quickly or even as the course is in progress. The EDST 565f course, for example, was developed from scratch in less than 10 weeks. Although it is not recommended to develop a course in such a short time, UBC potentially might have lost the contract with ITESM if the course had not been available in the 10 weeks from the time the contract was signed. It would have missed the start of ITESM's academic year, and ITESM might have looked for another partner or gone cold on the idea of a partnership over a longer period.

The Kwantlen case identified three factors that relate to how quickly a course can be developed and revised:

- the level of infrastructure in place to support online courses
- choice of software
- the appropriateness of the course design for an online environment.

Kwantlen, for example, had no infrastructure in place to offer online courses for the first offering of CRWR 1100. They had to rely on the infrastructure of another organization (The Open Learning Agency) in order to offer the course (and were required to pay a fee). Development of their own infrastructure took several months of time and the development of a new position, a coordinator of distributed learning, in order to get all the required elements in place for future course offerings (e.g. systems administration and registration).

The type of software used for online courses can also affect how quickly a course can be developed. Kwantlen found, for example, that the time needed to learn how to use a particular software (in this case Lotus Notes) can be substantial. In addition, they had to develop training workshops that were conducted prior to the course in order to help students learn how to use and load the software on to their own computers. Switching to using a web browser such as Netscape alleviated the need for these training sessions. Similarly, OISE/UT found the use of WebCSILE compared to Parti software cut their work time by nearly half.

Finally, simply transferring face-to-face lecture notes on to a computer and posting these online does not constitute an effective online course. The instructor for the Kwantlen CRWR 1100 course found that much of the course content came from online discussions and student writing samples which could be easily shared among the class. Small amounts of lecture notes were included as course materials. Feedback changed from individual instructor feedback in face to face classes to collaborative feedback from students writing and critiquing assignments online.

Educational Benefits

A common benefit found in all three of the case studies was that students learned more than just course content. As in these courses the main medium of communication was writing, significant improvements in writing skills were identified. Following is a quote from one of the OISE/UT instructors:

Over several years now I have observed people contributing what I consider to be higher quality work than what I have seen before. All these courses I have taught before and [the students] write better than they wrote before..... I attribute that to the technology. (OISE/UT instructor 1)

Students reported that their computer and time-management skills also improved.

Another benefit of the online delivery method found in all three studies is that the associated anonymity can result in greater participation from all students, including 'shy' ones. The lack of visual cues allowed the instructor to treat all students in the same manner. For example, one of the instructors reported that in a face-to-face class she would not be as critical of students whom she perceived as being sensitive or shy. Since the online format did not provide the visual cues from which such perceptions are made, this instructor treated all students in the same way. Instead, though, of being a disadvantage, she found this led to greater participation by all students.

Perhaps the most important benefit though from a distance education perspective is that the on-line discussion facility provided a satisfactory form of student interaction for distance learners that has been lacking in print-based distance education courses. In addition, the increasing amount of relevant resources now available through the Web, such as on-line journals and relevant Web sites, provided a rich source of resources for the online learners.

Limitations

Several potential limitations were also found in the three studies.

The need for start-up funding

The UBC cost-benefit study revealed that start-up costs were substantially higher than anticipated. In fact, as is shown in Table 2 below, the first offering of the EDST 565f course was 75% over budget! This was largely due to higher than anticipated time spent on instructional and administrative tasks.

Table 2 Educational Studies 565f - Researched and Budgeted Costs

Source of Cost	Researched	Budgeted
Fixed Costs:		
Course Planning: (staff time = 33.2 hours)	\$1,641.68	0
Development: (337 hours)	15,993.37	15,300
Marketing: (122.5 hours)	3,709.80	0
Copyright Clearance	700.00	700
Overhead (potential)	12,295.32	4,000
Library	1,000.00	1,000
Server Costs	300.00	300
International Tutors	3,000.00	3,000
Faculty of Education (Academic Approval)	2014.00	4,000
2 nd phone hook up and fees: (6 months)	225.90	0
Miscellaneous	305.94	0
Total Fixed Costs	\$40,716.51	\$28,300
Variable Costs:		
Instructional Time: (382 hours)	\$16,344.28	8,800
Administration/Registration: (400 hours)	12,365.08	1,521
Printed Materials	1,500.00	1,500
Total Variable Costs	\$30,209.36	\$11,821
Total Costs	\$70,925.87	\$40,121.00

Note: This table is adapted from Bartolic-Zlomislic & Bates (1999).

The cost for the second and subsequent offerings of the course decreased substantially, as Table 1 in this article indicates. Lower costs in subsequent courses were due largely to improvements made in the way the course was administered and conducted, and better organization of the online tutoring. This will be explained further in the “available time” and “organizational readiness” sections below.

Kwantlen employed several strategies in order to decrease start-up costs for the CRWR 1100 course and to make it feasible to begin work on developing an online program, although the necessary infrastructure was not yet in place. In addition to obtaining a provincial grant to be used toward developing online programming, staff sought to maximize benefits from existing resources. For example, the Department of Distributed Learning and Employee Development at Kwantlen acquired a server from another Kwantlen department (which needed a more powerful server) to be used for administrative functions. Because the server had sufficient capacity, it was also used for online course delivery. In addition, Kwantlen hired a Co-op student to help with the conceptual and technical development and delivery of the CRWR 1100 course.

Nevertheless, it is clear that a sizable amount of start-up funding must be available in order to successfully develop and deliver online courses and programs.

Adequate time

All three case studies found that instructing (and learning) in the online format appeared to be time consuming. This was mainly due to the large amount of reading (discussion forums) and writing required. Instructional time varied depending on how the online discussions were handled. For example, as can be seen by the quotes below, one of the instructors for the Research Methods course answered almost every message in order to be supportive of the student's efforts. The other instructor, however, was selective in the messages he/she chose to respond to in order to save time:

I think I responded to nearly every [comment], especially in the beginning. I found this is very important that when people contribute something they get an answer back right away so that they know the instructor is reading it and thinking about it and that gets [discussion] going very fast.
(OISE/UT instructor 1)

I responded to [discussion messages] where I felt that I could add something to the knowledge. If it was a general comment or if I felt that another student had responded in an appropriate way I would ignore it. If I felt that this was an issue where there needed to be some further debate or I could point them to other information, then I would respond to it. Often times though ... I would try to respond to the whole package. (OISE/UT instructor 2)

Another approach used was to allow fellow students to respond to peer questions. This was at times problematic as occasionally incorrect information was provided.

At UBC, the student discussion forums were completely re-organized for the second offering of the course. In the first course, all 40 UBC-registered students, plus many of the ITESM students, as well as the three UBC tutors, all piled into one discussion forum. Also, students were assessed on their contributions to the discussion forums. This led to a lot of "statements" posted in order to get marks. In the second offering of the course, discussion forums were limited to 20 students and one tutor, and there were no marks for participation, but the discussion topics were closely related to the assignments. This eased considerably the reading burden for both tutors and students, without in fact diminishing the value of the discussion forums for the students.

An additional time saver employed for the CRWR 1100 course was the development of a set of marking symbols the instructors could use to save time while marking online.

In all three studies, there was a rapid learning curve for the instructors, in both the design of the courses, and in the online tutoring. Extra time and training is needed for novice online instructors.

Students also perceived interacting online to be time consuming:

A weakness is just the amount of writing one has to do to get across a thought that you can say in twenty seconds. The fact that you are on-line and it's public, you can't just write anything. It has to be basically grammatically correct and thoughtful. I am not suggesting that a verbal comment wouldn't be thoughtful, but it doesn't sit there in print for the duration of the course. So I think [I took] a lot fewer risks in what I was writing and commenting and to me that inhibited dialog. (OISE/UT student A)

However, when student estimates of their time spent working on the course were compared to actual course requirements, students generally fell within the desired range of time. For the UBC EDST 565f course, for example, most students actually spent as much time studying as was intended, and this represented roughly the same amount of time they would be expected to spend on a face-to-face course. However, over half the student respondents said the course took more time than a conventional course and over half who responded said the course took more time than anticipated. While the actual time spent was similar to that spent in a face-to-face course, it *seemed* to take more work. This is possibly due to the sequential and more intense nature of the discussion forums.

Organizational readiness

“Some technological developments have opened new possibilities for organizational chaos, while others have made our lives more complex.”
(Murgatroyd, 1992 p.57)

With the development of online courses and programs comes the need to revise current policies and procedures in order to accommodate the online student and the online process. The development of UBC's first course toward a postgraduate certificate in technology-based distributed learning posed some challenges to existing operational procedures.

Registration, for example, proved problematic. UBC's automated telephone registration system – Telereg - does not allow graduate students to register for distance courses as part of their graduate program. This was due to a policy established over 10 years ago when graduate level distance courses did not exist. This policy has since been modified but the computer block on Telereg has not yet been removed. Neither the Registry nor Continuing Studies had an on-line registration system for non-credit students. Because most of the promotion of the courses though was done on-line, the bulk of the registrations were received in the week before and the week after the course started. To alleviate this problem, UBC's DE&T unit has now developed its own fully automated on-line registration system, which allows graduate and non-credit students to register,

order materials, and pay electronically. (This system is located at <http://itesm.cstudies.ubc.ca/info>).

Existing UBC Bookstore payment policy also does not accommodate international distance students. The UBC Bookstore requires that they receive payment (which must clear) before they ship materials to students. However, the delay in processing international money orders, which can sometimes take up to a month to process, caused students to wait long periods of time before they received the course materials. This can jeopardize the student's ability to complete the course. In addition, the UBC bookstore does not have a system set up for tracking orders that are shipped. They simply send materials to international students once payment has been processed. Therefore, there was no way of knowing the whereabouts of the course materials after leaving UBC, including whether or not the students received them.

The DE&T solution to these difficulties was to develop a 'one stop shopping' approach to course delivery. Students both register and pay for the course and course materials directly through the DE&T unit. DE&T now takes responsibility for ordering the materials from the bookstore in advance of registrations and directly mailing or sending them by courier to the students when ordered. In this way, the packages sent to international students can now be tracked, and the overall service is now much faster and more convenient for students.

Existing UBC Library policy also does not accommodate all distance learners. The UBC Extension Library supports UBC credit distance students by allowing registered credit students to order (online) up to 30 articles or books per course which are subsequently mailed to students, irrespective of location. The problem exists with service to certificate or non-credit students. At this time, they do not receive service from the Extension Library unless they pay for a library card (regular UBC students receive free access). Consequently, the UBC Library is now piloting access to certificate and non-credit students, to identify the impact on cost and service.

Kwantlen had to develop orientation sessions in order to help their online students install Lotus Notes Client on their home computers which (at the time of the first offering of CRWR 1100) was required in order for students to be able to take the course. This of course would be of no use to students who could not come to campus where the sessions were held, thus negating the potential benefits of access. These sessions were subsequently discontinued when Kwantlen switched to using Netscape as their Internet browser instead of Lotus Notes Client. Netscape required much less instruction to operate.

One of the instructors for the Research Methods course at OISE/UT developed an instructional manual explaining how to use their course software WebCSILE which was posted in the course database in order to help students with their technical problems and reduce the reliance on the technical support staff.

All this leads to a much higher than anticipated time spent on administrative tasks, and consequently unanticipated costs.

Student Readiness

The success of an online course or program is impacted by the readiness of the students to embrace this method of delivery. Primarily, students must have the necessary technology available to them (suitable computer and Internet access) before they can benefit from this type of program. In this way, some costs are transferred from the institution to the learner, as the learner must now provide for his or her own learning tools.

In addition, as with other forms of distance and distributed education, students must be self-directed learners. Their participation in and completion of online courses is entirely up to them. Online students have the additional burden of dealing with technical delays and difficulties that may occur:

You really have to be self-directed. You have to be really time oriented. I am finding with this course that I am spending more time on it than I do on a course that I go to class. But that's on the course time itself, but if I take into account my travel time and everything else ... (OISE/UT student B)

The twenty-four hours a day, seven days a week access to the course may also create unrealistic expectations of the course instructor as students may expect their questions to be answered immediately:

I think the very needy students who need constant reassurance, need constant direction ... I don't think it's a waste for them to do [an on-line course] ... but if they pose a question and you don't get to it for three days they are just oh my God she didn't answer my question. I need this information right away. And it's like come on calm down if you were in a face-to-face class you wouldn't get to see me again until next week. They are very needy and I don't know that this is the optimal way for them to learn. I think it's the independent folks who can manage on their own and who have got a lot of self-confidence to do this [that will benefit from this delivery method]. (OISE/UT instructor 2)

Culture may also affect the success of online courses or programs. It was found, for example, that the Mexican students who participated in the UBC EDST 565f course were very outgoing in spite of their difficulty with the English language. Some of the Asian students, however, whose grasp of the English language was quite good, rarely participated in the online discussions and collaborative assignments. This warrants further research.

Conclusion

This paper attempts to answer the question of why institutions around the world are investing so much in online learning, and whether the investment is

justified. While it is dangerous to generalize from just three case studies, some of the findings are similar to those of other studies of on-line learning projects, such as those of Harasim (1995), Massey and Curry (1999), and the American Productivity & Quality Center (1999).

One of the most significant findings from these studies is that online learning does provide the opportunity to reach new markets. First of all, online learning seems to be particularly appropriate for lifelong learners. There is a clear synergy between the needs of lifelong learners and the nature of online learning. The facility for interaction between learners separated by space and time is really important for mature adults, who often have developed considerable knowledge and experience which they can share and add to the knowledge provided by the instructor, but who cannot attend classes on a regular basis at a site that may be inaccessible to them.

Secondly, the flexibility of online learning is clearly of great value to many mature adults trying to balance work, family and study requirements. They need access to expertise, wherever it may be located. They seem to care less about qualifications, and more about the content of the material, and the opportunity to share experiences. Online learning gives them access to experts and programs wherever they may be located.

Thirdly, in an increasingly globalized society, many learners seem to appreciate the advantages of international courses and the opportunity to work collaboratively and closely with colleagues across the world, and to have access not only to the course instructors, but to text book authors and experts from other institutions.

Fourthly, for programs struggling with small enrolments for face-to-face courses, the opportunity to widen the range of potential students through online learning may be critical.

For institutions, the benefits provided by the ability to partner with other international institutions is important at both an economic and educational level. Developing joint programs allows costs to be shared and risks reduced. Institutions that recognize the importance of internationalizing the curriculum can use on-line courses to bring in not only international instructors but also international students into a program, thus providing economies of scale. One of the most important benefits listed consistently by students in the UBC case study has been the ability to work collaboratively online with students from several different countries. This not only has inherent advantages in terms of learning from each other, but also provides learners with essential lifelong learning skills.

Lastly, the economics of online courses are complex, fascinating and not transparent. Under the right conditions, online learning can not only be cost-effective, but can actually bring in net profits for an educational institution. However, there is no easy money in this business. It has to be earned. This requires quite a different approach to the development and management of teaching. It requires financial systems and financial management that frankly few

higher education institutions have in place or are even ready to contemplate. For instance, it requires up-front investment, development of business plans, project management, financial and technical support to faculty, allocation of revenues to those units that take the risk and do the work, and professionalism and a team approach to course development and delivery. Is your institution ready for this? (See Bates, in press, for a more complete discussion of these issues).

And this is the good side. Limitations to investment in online learning include:

- the need for substantial start-up funds
- the need for additional time for faculty to learn how to use these new technologies and for students to learn to study effectively online
- the need to introduce new administrative and organizational procedures that meet the requirements of online learners
- the need for students to be psychologically ready and financially able to embrace this method of course delivery.

Whether or not online learning can be considered successful and worth the investment will largely depend on the values and goals of the organization. For example, if the organization's focus is on revenue generation or saving money, online learning may not be a good choice, since a large number of online programs are not and cannot be cost recoverable. (They may though be more cost-effective, in terms of learning outcomes for the same dollar spent). Of the three cases examined, only the UBC case was fully cost recoverable, and by only a small margin. If the organization values collaborative learning, increased access for lifelong learners, and the internationalization of the curriculum, then an online program may be of value, even if the costs are the same or slightly more than for a conventional course.

The type of course or course content will also determine the success of an online course or program. Not all courses or course material should be put online. In particular, young students without good independent study habits will find an online course particularly challenging. General principles of good instructional design should apply. The intended market should be taken into consideration and the best interests of the student should be kept in mind.

Finally, in order for an online course or program to be successful, benefits and limitations to the organization and to the student should be appropriately balanced. It is important not only to focus on the costs of developing and delivering an online course or program, but also to focus on potential performance and value added benefits to both the institution and more importantly to the student.

References

- American Productivity & Quality Center (1999) *Today's Teaching and Learning: Leveraging Technology: Best Practice Report* Houston, Tx: The American Productivity & Quality Center
- Bartolic-Zlomislic, S. & Bates, A.W. (1999). *Assessing the Costs and Benefits of TeleLearning: A Case Study from the University of British Columbia*.
<http://det.cstudies.ubc.ca/detsite/researchproj.htm>.
- Bartolic-Zlomislic, S. & Brett, C. (1999). *Assessing the Costs and Benefits of TeleLearning: A Case Study from the Ontario Institute for Studies in Education/University of Toronto*.
<http://det.cstudies.ubc.ca/detsite/researchproj.htm>.
- Bates, A.W. (1995). *Technology, Open Learning and Distance Education*, Routledge, London & New York.
- Bates, A.W., and Escamilla, J. (1997) "Crossing Boundaries: Making Global Distance Education a Reality" *Journal of Distance Education*, 1997, 12(1/2), pp.49-66
- Butschler, M. & Bartolic-Zlomislic, S. (1999). *Assessing the Costs and Benefits of TeleLearning: A Case Study from the Department of Distributed Learning & Employee Development, Kwantlen University College*.
<http://det.cstudies.ubc.ca/detsite/researchproj.htm>.
- Cukier, J. (1997) 'Cost-benefit analysis of telelearning: developing a methodology framework' *Distance Education*, 18 (1), pp. 137-152
- Dolence, M. and Norris, D. (1995) *Transforming Higher Education: A Vision for Learning in the 21st Century* Ann Arbor, MI: Society for College and University Planning
- Katz, R. and Associates (1999) *Dancing With the Devil: Information Technology and the New Competition in Higher Education* San Francisco, CA: Jossey Bass
- Massey, C. and Curry, J. (1999) *On-line Post-Secondary Education: A competitive analysis* Ottawa: Industry Canada/TL•NCE
- Murgatroyd, S. (1992). 'Business, education, and business education'. Moore, M.G. (ed.) *Distance Education for Corporate and Military Training* University Park, PA: Penn State University, American Center for the Study of Distance Education, Readings in distance education, No. 3, pp. 50-63.
- Rumble, G. (1997) *The Costs and Economics of Open and Distance Learning* London: Kogan Page