Technology and Lifelong Learning: Myths and Realities

A.W. (Tony) Bates
(Note: this paper draws heavily from the author's forthcoming book, *Technology, e-Learning and Distance Education,* to be published by RoutledgeFalmer in 2005)

Introduction

Over the last ten years, distance education has seen some major changes due to the impact of technology, and in particular the development of the World Wide Web and the Internet. In 1995 there were no web-based online courses (although online teaching based on computer-mediated communication software such as CoSy and First Class had been around since the late 1980s). Now, it is estimated that there are approximately four million students in fully online programs in 2003 (Bates, in press).

It is appropriate that this paper is based on a presentation made at the International Council for Distance Education in Hong Kong, because China has over 1.6 million students using computers in distance education (Chen, Liu and Huang, 2003). This is almost the same as the number taking online courses in post-secondary education in the U.S.A. (Allen and Seaman, 2003). Over the next five years, China will easily surpass the U.S.A. in terms of the number of online learners.

Consequently, in a period of less than ten years, there are now almost as many students taking online courses as print-based distance education courses (although the majority of these are in the corporate training sector). At the same time, online learning has penetrated the traditional campus-based institutions. In 2003 there were an estimated three to four million students on campus using some form of e-learning (Bates, in press).

However, it can be seen how confusing the terminology has become. E-learning may or may not include distance education. Distance education may or may not include online learning. This rapid expansion of e-learning has led to many assumptions or myths about distance education, lifelong learning and the use of technology - and some interesting realities that are not always appreciated by commentators or critics of distance education.

In this paper I will deal with seven myths, inspired by a presentation with a similar title by Terry Anderson at the ICDE/CADE conference in Calgary in 2002. My myths or realities are in summary:

1. Universities do lifelong learning
2. Distance education is about access
3. Technology is the answer
4. E-learning replaces distance learning
5. E-learning is a new and better pedagogy
6. E-learning will make money and globalize education

7. Anyone can do distance education.

I will discuss which of these are myths and which are realities, and I will also summarize by discussing the lessons learned.

1. Universities do lifelong learning
In countries where wages are relatively high, there has been a reduction in the need for large numbers of unskilled or semi-skilled manual workers to operate factories and industrial production lines, because of 'outsourcing' and competition from low-wage countries. Some of the missing labour market has been replaced by a need for people to work in knowledge-based industries, in for instance hi-tech sectors such as computing, telecommunications, and biotechnology, and in service industries, such as financial services, health, entertainment, hospitality and tourism.

Many of these knowledge-based industries require a much greater proportion of highly educated workers, and furthermore require a highly flexible and adaptable work force that can continually change as the world changes around them. Thus the new knowledge-based industries require not only up-to-date and recent knowledge, but also workers who are constantly learning, in order for such companies to compete effectively. This in turn has fed the demand for more university and college places, as young people and their parents realize that economic security depends upon a post-secondary education.

At the same time, 'lifelong learning' has become critical for economic development. A competitive, globalized knowledge-based economy depends on continuing improvement and change. Education and training therefore does not stop with a B.A., an M.Sc., or even a Ph.D. Learning is literally for life. Universities and colleges are being asked to respond to this with new programs, new qualifications and new means of delivery.

For most of these lifelong learners, it is not desirable or practical to go back to university or college campuses full time for re-training or up-dating. Nevertheless, at a conservative estimate, the lifelong learning market for formal university and college courses is at least as great as the market for students leaving high school for university and college (see Bates, 2000, pp. 7-13, for more discussion of this issue).

Therefore, if the needs of lifelong learners are to be met, our higher education systems will need to respond to the demands for prior learning assessment, flexible delivery of learning, professional updating requirements, non-credit certification and re-certification, and the measurement of learning outcomes. Distance education and especially online learning are ideal methods to meet this market of working students with family and other commitments.

So far, though, despite steady growth in student enrolments in distance education programs, which suggests increasing demand for flexibility from part-time and lifelong

learners, most research universities are still transfixed on attracting the best of the high school graduates. Because of the gradual increase in class sizes as costs have increased faster than revenues in most universities, professors feel overloaded just dealing with the traditional high school market. 'Why,' asked one UBC professor, 'do we need to worry about attracting more mature students when we are turning away five high school applicants for every place?' The last thing research professors want is more students. Lifelong learning is seen as a distraction from the core business of doing research and getting the best graduate students by selecting the brightest students from high schools.

Thus, to date most universities are not responding to the lifelong learning market, other than through traditional non-credit continuing education programs. These more traditional continuing education programs are usually set up in such a way that that the tenured research professor is protected from the teaching of such programs. However, in a knowledge-based society, it is precisely the latest research knowledge generated by research professors that lifelong learners need to access.

Those countries where research universities step up to the plate and deliver appropriate lifelong learning will have a major competitive advantage. For this to happen, though, new 'business' models are required. Lifelong learners have usually already had a fully state-subsidized higher education. They are working and can afford to pay the full cost of programs. They are often willing to pay this cost because it means promotion, and a competitive edge in knowledge-based industries. Thus programs for lifelong learners need to be run on a cost-recovery model, enabling additional research professors to be hired specifically to deal with this market. We shall see how this can be done in the discussion of myth 6.

2. Distance education is about access
For about 25 years between 1970 and 1995, distance education was synonymous with open learning and access. This was the period in which large national open universities were created, to provide opportunities for students to access a university education where places were unavailable in conventional campus-based institutions. For instance, when the UK Open University was created in 1969, only eight per cent of students went on to university in Britain; now the figure is closer to 40 per cent and still increasing.

Since 1995, though, with the advent of web-based learning, 'e-learning' or online learning has been increasingly associated with the opportunities to increase revenues and to privatize higher education. This trend of course is very much due to an ideological shift to the right in politics, particularly in the USA, where some Wall Street analysts (e.g. Michael Moe and Henry Blodgett) and commercial companies have seen education as a huge potential market for the private sector.

I will discuss under myth 6 the success or otherwise of this strategy, but at this point it is important to emphasise that for many less economically advanced countries, access is

still a major issue, and distance education still promises an economically cost-effective way to provide access to very large numbers of students.

At the same time, in countries such as Britain, Canada, Australia and the U.S.A., where access is already high and increasing, the need for autonomous distance education institutions is under challenge. For instance, more conventional campus-based institutions, such as the University of Derby or the University of Glamorgan, are moving increasingly into online and distance education.

This issue now is less one of access and more to do with cost-effectiveness. If open universities are not effective and have high drop-out - as some do - cost per graduate becomes an issue. Thus open universities had better deliver on their promise of cost-effectiveness, or the campus-based universities will increasingly move into the area of distance education. At the same time, many institutions are moving into e-learning to improve the quality of teaching, but are often failing because of the lack of quality control procedures found in many open universities. Thus quality and cost-effectiveness are just as important now for many distance education providers as opening up access to higher education.

3. Technology is the answer
This can be put another way: new technology is better than old technology. This has always been a hoary old myth. New technologies do not automatically lead to improvement in the quality of education. Let's look at what's happening now.

We are seeing some major developments in learning resource management platforms, such as WebCT and Blackboard. For instance, WebCT's Vista is a much more powerful re-design of the underlying technology of WebCT, enabling many new functions to be added, such as integration with student management data-bases and systems, and analysis of WebCT transactions, such as use of particular tools and tracking of users. However, the consequence is greater cost and increased complexity.

Because of the higher cost, some institutions are moving to open source solutions. However, while this avoids the need to pay licence fees to commercial companies, there are additional costs in maintaining and changing the computer coding, as open source software by definition will have continuous and ongoing development. As a manager, though, I need a stable and predictable software base for creating learning materials. The cost of development, maintenance and support of open source platforms is at this point unknown.

It is really important that technology does not start draining away the resources needed to design and deliver high quality online teaching, in order to maintain and develop the technology. This is putting the cart before the horse. Education needs less complex and less expensive software platforms, not the opposite.

Another technology that is still sitting in the wings but will become more important as bandwidth to the desktop increases is web conferencing. This enables synchronous communication between teacher and learner.

I can see some real value in adding synchronous technologies to distance learning. For instance, when students are working on collaborative assignments, they often want to get together at the same time to finalise their assignment. Guests visiting a university can be used more efficiently in a synchronous presentation.

However, I see more dangers than benefits at the moment with synchronous technologies such as web conferencing. First of all, because of the lack of bandwidth, the conferencing tends to be more like a broadcast than multiple points of interaction between students. Student-student interaction is very difficult in desk-top web-conferencing as only one person can speak at a time, and this tends to be controlled by the instructor. Therefore all comments get directed to the instructor. The costs of web conferencing are very high. The software is much more expensive per 'seat' than asynchronous software. More importantly, asynchronous technology frees up the instructor while students work with each other or with the learning materials. Thus there are no major economies of scale with synchronous teaching.

Thus we run the danger of reverting to the old transmission of information model *and* increasing costs if we move to this new technology. It will therefore need to be used very selectively and combined with asynchronous approaches to learning, not to replace them.

Probably no technology is getting more attention at the moment than learning objects. A learning object can be anything from a single graphic or paragraph of text, a single slide of a physiological cell, a self-assessed test, a simulated laboratory experiment, or a short module of teaching (see for instance, http://www.reusability.org/read/). As well as the object being created in a digital format, a whole set of other data can be digitally 'tagged' to the object, such as verbal descriptors, transaction software for charging a small fee for accessing the source, copyright holder information, links to similar objects, etc. The importance of the 'tags' against each object is that they enable Internet search engines to locate appropriate learning objects matching the descriptors used by the person searching for the object. A course designer then could build a teaching program with many such links integrated within the overall teaching context, without having to create those objects from scratch.

Well, that's the theory. The reality is very different. Learning objects are proving extremely difficult to tag and classify in a way that is not very labour-intensive and hence costly. More critically, there is as yet no successful business model developed that will encourage the extensive development and use of learning objects. At the moment,

development is dependent on voluntary co-operation through projects such as MERLOT. A business model that satisfactorily deals with intellectual property, marketing and revenue-sharing is urgently needed. More attention also needs to be paid to design issues, such as the best way to use learning objects, how to embed them in a learning context, and the degree of control a learner should have in finding and assembling learning objects as part of a learning experience.

I suggest that it would be more useful to step back a little from learning objects and look at the broader issue of content management. In other words, how should we be creating, storing and identifying the digital materials we are creating? Why do we need to do this? How will they be used once stored? What will it cost to store and recover digital materials and how will we cover or justify these costs? There seems to me little point in going to the cost and expense of detailed tagging of learning objects if we don't have answers to these broader questions first. Who knows, at the end of the day we may find it is still cheaper to use people than technology for managing content.

In summary, technology is only the answer if it is cheap, reliable, easy to use and above all helps us meet desired learning outcomes more cost-effectively. If we want to play with advanced technology that does not yet meet these criteria, it should be clearly understood that we are doing research, not course development, and it should be funded and managed accordingly.

I believe in fact we should be giving more attention to researching and evaluating course design, alternative models of course development such as project management, tutor intervention strategies in online forums, and the cost-effectiveness of online learning, than researching the application of the latest technology. Many instructors are not using well the current technology, and until there is better understanding of the educational and design requirements of teaching, new technology just becomes a distraction for many, and even worse, encourages costly high tech applications of poor teaching.

4. E-learning replaces distance education
For some people (see for instance, Harasim et al., 1995; Twigg, 2001; Anderson and Garrison, 1998), distance education is seen at best as a subset of 'distributed' or 'online' learning, and at worse in its print-based or broadcast format as an old-fashioned and no longer relevant form of teaching because of its lack of interaction and inability to create communities of learners.

I believe it is dangerous and misleading to confuse or compound distance education with e-learning. Although e-learning may be used in distance education, distance education is a distinct and still relevant concept in its own right.

For instance, a key question is: do students have access to e-learning technology, and in particular the Internet? In most economically advanced countries, and in many
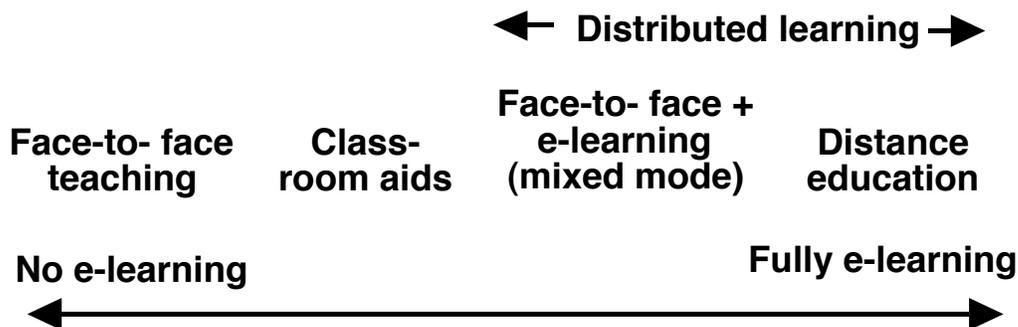
developing countries, the answer for the middle class student will be yes. However, access to a computer continues to be strongly linked to income. Poor people - even in economically advanced countries - are far less likely to have access to a computer, and even less to the Internet (although there is evidence that the gap is beginning to close - see the U.S. Department of Commerce analysis of the 2000 census). Thus the mass media of print and broadcasting are still relevant technologies for such potential learners - and their numbers are massive on a global scale.

Secondly, by far the major use of e-learning is to support campus-based teaching. Bates and Poole (2003) show indeed that there is a *continuum* of e-learning, from pure face-to-face teaching to fully online. Most e-learning is toward the left hand side of the diagram in Figure 1.

INSERT FIGURE 1 HERE

Indeed, in my rough survey of distance education and e-learning (Bates, in press), I found that there were between three to four million on-campus students using e-learning, and in the public sector only about 600,000 fully online (i.e. distance) students. Thus in most cases e-learning is not distance education. Distance education tends to serve a very different market from e-learning, although there are some areas of overlap.

Figure 1: The continuum of e-learning

← Distributed learning →

| **Face-to- face teaching** | **Class-room aids** | **Face-to- face + e-learning (mixed mode)** | **Distance education** |

No e-learning   **Fully e-learning**

From Bates and Poole, 2003, p.127

Indeed, the economics of mass media distance education are very different from that fully online learning. The former provide economies of scale; the latter provide economies of scope. The mass media of print and broadcasting enable very large numbers of students to be served at increasingly lower unit costs as numbers increase. However, mass media distance education requires high investment and is dependent on large numbers of students enrolled in each course, which is not always achievable. Web-based learning

enables relatively small numbers of students to be served at moderate cost. There are some economies of scale at the development stage, but because of the high level of interaction required from tutors, the economies of scale flatten out with over 100 students per course. This can be summarized in Table 1 below:

INSERT TABLE 1 HERE

This confusion in the minds of university administrators between e-learning and distance education can have disastrous consequences, as I found out to my own cost at the University of British Columbia. If there is a continuum of online learning, from supporting classroom teaching right through to fully web-based or distance courses, why is there the need for a separate department of distance education? If an academic department is responsible for developing web-supplemented and mixed mode teaching, why should it not also take full responsibility for fully online courses? It was this kind of thinking that has led to the recommended closure of a highly successful department of distance education at UBC.

The senior administration believed a devolved model would be more consistent with the philosophy of decentralized control of teaching and the integration of learning technologies. In particular, the senior administration believed that by transferring the highly valued professionals from DE&T to the faculties, the use of web-based learning in the classroom as well as for distance education would be strengthened.

It remains to be seen how this decision will benefit the students (who were not consulted about the changes) and how the decision will impact on the cost-effective use of resources. Faculties historically had shown little interest in the needs of distance learners at UBC, as most professors were already overwhelmed with increases in the size of face-to-face classes. Staff in DE&T were particularly concerned about the lack of understanding in the faculties of the special learner support needs of students studying fully at a distance, and the loss of a professional centre for distance education course design.

As a result, some of the most experienced DE&T staff left to work in other organizations instead of transferring to other faculties or administrative departments at UBC. Also, there is a shortage of good instructional designers and project managers, and scattered across a large number of departments, their influence will be diminished, especially as most faculty at UBC do not understand or are openly hostile to instructional design and project management.

The challenge then for the senior administration at UBC will be to address the academics' current lack of interest in and commitment to distance education, and issues of quality control and cost-effectiveness in a highly decentralized system. In particular, my concern

is that the specialized services required by students who do not come to the campus will not be provided in a decentralized model.

5. E-learning enables a new and a better pedagogy
This is an argument put forward by a number of writers (e.g. Harasim et al, 1995; Peters, 2002) that e-learning enables a new and better pedagogy. First of all, I don't like the term 'pedagogy', as most distance learners are adults. I like even less the term 'andragogy', so let's settle for methods of teaching and learning.

Yes, I do agree that online learning is a more effective method of distance teaching than print-based or broadcast-based distance teaching. Its most important advantage is that it encourages and facilitates student-student interaction, enabling communities of learners to be created at a distance or in virtual space, thus encouraging or facilitating the active construction of knowledge by learners. Online teaching also speeds up communication between students and tutors, compared with correspondence education, and on occasion allows for direct interaction between students and the creators of the learning materials. Online learning can facilitate the kinds of learning outcomes required in a knowledge-based society, such as critical and creative thinking, collaborative learning, problem-solving, and decision-making skills more easily than mass media forms of distance education. Online learning can also improve the effectiveness of the transmission of information, through online tests and feedback.

However, these advantages do not result automatically from the use of online learning. It needs many of the design principles first developed for print-based distance education, in the development of learning materials, in the moderation of discussions, and in learner support and counseling. Perhaps more importantly, it is not necessarily pedagogically better than or even different from face-to-face teaching.

I therefore Peters is over-stating the argument when he claims that virtual learning is a paradigm shift, at least in terms of current practice. Six of Peters' ten 'functions' of virtual spaces (presentation, storage and retrieval of information, communication, collaboration and browsing) are not unique to virtual spaces. Computers may make these functions more efficient, but they do not necessarily change the quality of the experience. Similarly with respect to his 'six activity fields', computers again may make these activities more efficient or convenient, but most of these activities are also 'experienced in real learning spaces.' For instance, discovery learning is not dependent on a computer (ask any parent of a young toddler).

Peters, discussing the communications functions of e-mail, electronic noticeboards, and computer conferences states (p.98) that 'the innovations here go far beyond the forms of communication in traditional studying.' Again, though, on close examination of his argument it could be argued that *in educational terms* these electronic functions merely

replicate what happens in real space in schools and campuses. They do not provide a new learning experience. For instance, if we have face-to-face classes of one teacher to twenty students, could not all the functions of online communication be easily replicated in a real classroom? Or is there for instance a *qualitative* difference between asynchronous written communication online and spoken discourse in a classroom? If so, what is gained and what is lost in educational terms? Peters is silent on this issue.

The real difference between e-learning and classroom teaching is its flexibility. Students and teachers do not have to be together at the same time. But this is a shift in an *organizational* paradigm, not in 'pedagogy'. In pedagogical terms, the needs of students are the same, whether they study in real or virtual space. They need to read, observe, think, practice, receive feedback, and be assessed. They need encouragement, criticism, and advice.

My criticism is quite different. The problem with e-learning and online learning is that generally we have merely replicated the classroom environment in virtual space, and have not exploited the potential advantages that virtual space can offer. This is what happens when any fundamentally different technology comes along. When the movies started, they were used mainly to record music hall acts. It was only when directors such as D.W.Griffith developed new production techniques unique to film at the time, such as panoramic battle scenes, flash-backs, dissolves, etc., that the new medium became fully exploited. So far, the potential of e-learning has generally been under-exploited in our fear of moving too far away from classroom-based models of teaching. We need to develop designs of virtual learning to facilitate learning outcomes that best fit the requirements of a knowledge-based society, and this will probably require unique and original design of virtual learning.

6. E-learning will make money and globalize education
Of all the myths, this is probably the most laughable, but as with most myths, there is nevertheless a small kernel of truth at the heart of the myth. In the late 1990s, there was nothing less than an e-learning frenzy. E-learning proved to be a classic example of the 'boom-bust-bounce' phenomena associated with revolutionary new technologies, such as the railways, the motor-car and the Internet. The American consultancy firm, Gartner, first graphically illustrated the phenomenon with a curve, which could be applied equally well to e-learning (see Figure 2)

Figure 2: The 'boom-bust-bounce' phenomena of revolutionary technologies

INSERT FIGURE 2 HERE

Driven by the hype of Wall Street analysts such as Michael Moe and Henry Blodgett, e-learning was seen as the next 'killer application' of the Internet (a phrase coined by John Chalmers, the CEO of Cisco Systems). It is

understandable that commercial companies such as equipment suppliers and publishers such as Thomson should want to take advantage of a new commercial opportunity that had global potential. However, what is more surprising is how many prestigious institutions were seduced into seeing e-learning as an easy way to make a fast buck. New York University, Columbia University, University of Chicago, Temple University, Cornell University all jumped on the 'for-profit' e-learning bandwagon. Even the British Open University attempted (for the third time) to establish a for-profit operation in the U.S.A.

These projects all crashed and burned. The loss on each of these projects was between US$10 million to US$20 million. In the case of the British e-University, the loss was a staggering £62 million (almost US$100 million). To put this in perspective $20 million would have been sufficient to fund UBC's distance education operation for 20 years.

Most of the institutions that lost money did not really understand the business of e-learning and the underlying cost structures of quality distance education. Nearly all the institutions that lost money (and the management consultants that advised them) were new to distance education. The main misunderstanding was to believe that e-learning was primarily about commodifying content. Although content is important, it constitutes probably less than fifty per cent of the operational costs of a successful high quality online distance education operation. In particular, interaction between students and teachers is essential. The costs of learner support seem to have been under-estimated in many of the business plans. Furthermore the business models of the prestigious universities were developed on the basis of keeping their main operation, and in particular their tenured research faculty, isolated from distance education, what one might call the quarantining of distance education. It is hard to feel sympathy for public and not-for-profit universities that looked for a quick profit while holding their noses about the business they were investing in.

Such operations also raise some disturbing ethical and credibility issues. One example is Universitas 21 Global. Universitas 21 is a consortium of seventeen public universities, mainly from Britain and British Commonwealth countries. Driven by the leadership of Alan Gilbert, the Vice-Chancellor of Melbourne University, Universitas 21 entered into a partnership with Thomson publishing to create an online, distance operation called Universitas 21global. This is an independent company, managed by Thomson, in which the seventeen universities are primarily stock-holders, each having invested US$500,000 to establish the company. However, the majority of the stock (and hence the controlling share) is owned by the Thomson Corporation. Thomson has one of the largest holdings of university textbooks through its affiliated companies. Although the logos of each of the seventeen universities will appear on degree transcripts of Universitas 21's diplomas, there is no obligation for Thomson to use any of the academics from the seventeen institutions. Indeed, at least one member institution will not accept credit course transfer from Universitas 21 into

its own degree programs. The degrees are accredited through another Universitas 21 holding company, Universitas21 Pedagogica, which is run by a former Vice-Chancellor of one of the member institutions. As Ryan and Steadman (2002) so gently state:

> 'It is unclear how U21pedagogica, the accrediting body of the U21 universities, can call on sufficiently wide expertise to validate proposed programmes without the deep expertise that a comprehensive university uses in its usual accrediting procedures, which proceed from departmental level, where the expertise resides, through the various academic bodies of the university.' (p.25).

Put in a less gentle way, how can a publicly accredited and funded research university allow its seal to be used for a degree program that may have had no input from its own professors?

However, the kernel of truth within this myth is that there is money to be made in niche markets, and there may indeed be cases where it is ethical and in the public interest to operate on a for-profit basis in online learning. For instance the University of Phoenix Online does a good job for its 26,000 students in the corporate vocational and management education area. Queen's University in Canada runs a successful for-profit MBA program, delivered partly by video-conferencing. Athabasca University in Canada also offers a very successful online MBA.

It is probably right that lifelong learners who have already been through the public post-secondary education should pay full fares for continuing professional education. A good example of a for-profit online continuing professional education program is the joint Master in Educational Technology offered by UBC and Tec de Monterrey of Mexico. The partnership in online learning between these two institutions has lasted since 1996; the master's program opened in 2002. The four core courses that all students must take are jointly developed, and available in English and Spanish. Students can then choose a further six elective courses. Electives are independently developed by each of the institutions in their own language. Currently there are over 200 students in the joint degree program. For those that do not meet the English requirement for the joint degree, Tec de Monterrey offers its own master's program in Spanish, using the same course materials. This also has over 200 students.

Students pay approximately US$850 per course, so the full master's degree will cost US$8,500. The program is run on a full cost-recovery model. This means that all costs, including the cost of hiring new research professors and all the universities' overheads, must be recovered from fees or externally funded scholarships. To finance the program, money was borrowed from the university and repaid with interest from the fees. This enabled new professors to be hired before the program began. The business plan has built in a 15 per cent margin

for risk (or profit), and contains a detailed schedule of payments back to all the departments that incur costs as a result of the program. This online program has proved itself sustainable while maintaining high quality input from the academic side - an example of the 'bounce' following the 'bust'.

There are several lessons that can be drawn from the boom-bust-bounce period of e-learning. Perhaps the most important is that students want the real thing. Even a brand name such as the University of Chicago will not sell if it is not a genuine University of Chicago degree offered by University of Chicago professors. Secondly, students are conservative in their choice of institution. Even though the Master in Educational Technology attracts students from over 30 countries, most have some affiliation with one of the two institutions. For instance, 20 per cent of the students enrolled in the courses delivered in English are on-campus UBC students or resident in Vancouver. Another 24 per cent come from the rest of the province, and 23 per cent come from the rest of Canada. The remaining 33 per cent come from other countries, and are critical in moving the program from loss to profit, but often they have studied previously at UBC, or their parents are alumni, or they are Canadians living overseas.

The most important lesson perhaps is that we need different financial strategies and funding models for different markets. Furthermore, as student tuition fees increase, and students start to work to pay their way through college, e-learning and distance education become more popular with students, as these methods provide more flexibility. These methods also start to attract the interest of Deans, because as tuition fees increase, they cover more than the marginal cost of an extra student. This means that once courses are developed, even for undergraduate students there is a small profit for every distance education enrolment.

Also, students want the real thing, which means it is not a good idea to isolate the 'star' professor from distance education. This means finding real incentives to get them to participate, such as reduced teaching loads in face-to-face teaching, for example. Integrity does matter; institutions dilute their brand-name at their peril.

7. Anyone can do distance education
There are three types of academics that cause me grief: ostriches, geeks and amateurs. Ostriches will say: 'The only teaching that counts in a university is a one-on-one face-to-face discussion between a student and a wise professor': the Socratic dialogue. Other ostriches bemoan the large classes and the dirty, unwashed modern undergraduate. Welcome to the world of mass higher education. We are not going back to the days when only a tiny elite of rich white males could go to university. The challenge for the modern university professor is to find cost-effective ways to teach large numbers of students to a high quality. This is your job, guys.

The second group are faculty who have discovered technology, the geeks. They are at the leading edge of technology. They are very enthusiastic but the emphasis is on the technology, not the teaching. Usually they graft the lecture method on to the new technology, adding cost without any increase in quality. They are often 'Lone Rangers'. Their activities should really be seen as research rather than a sustainable teaching, although students still are the unfortunate guinea-pigs.

The third group I have much more respect for, and these fortunately constitute the majority of faculty, at least at UBC. These are the amateurs in the Latin sense of the word. They love teaching. However, they themselves are untaught in the field of education. In this sense they are not professionals. They do their best without the necessary time and training to make them expert, although, as in sport, there are exceptional individuals who are amateurs. They do not have the time though to master instructional design, the educational applications of new technologies or project management. Unfortunately, because of their lack of knowledge of these areas, the tradition of academic autonomy, and their focus on research, they are often reluctant to work in teams with other professionals. The result is often poor quality e-learning materials. In the past, few academics attempted to offer distance education courses on their own. However, as academics have drifted into e-learning, there is now a growing tendency for them to think that it is a small step to offering the program wholly online. This raises concerns about the quality of the learning materials, learner support and program coherence. None of the lessons learned from dedicated distance learning design are therefore applied. So, yes, there is a body of expertise specific to distance education. If that expertise is ignored, disaster looms, as we saw under myth 6.

University and college teaching is an area where teachers receive no training. The Ph.D. is training for research, not teaching. However, over the last 50 years a huge body of knowledge has been developed about what leads to effective teaching. This is largely ignored by university teachers, whose training is based on the apprenticeship model of following the best examples of their own university teachers, using predominantly the lecture mode.

The problem is that the use of technology for teaching raises the bar in terms of the knowledge required to teach effectively. The traditional way of dealing with this issue has been through faculty development seminars. However, there are severe limitations in this approach. First it is voluntary, and many faculty decide that their time would be better used doing research. Second, there are few rewards for improving one's teaching. Good teaching may be a stated criterion for tenure and promotion but the reality is that in research universities it is the research publication record that counts. Third, much of the faculty development focus is on how to use the technology, training skills such as html or loading materials into WebCT. This is not a good use though of the time of highly qualified subject experts.

Ideally, every university teacher should do a post-graduate certificate in education before they are allowed to teach. However, this is not going to happen. An alternative is the team approach, working with other professionals such as instructional designers and web programmers. This allows subject experts to do what they do best, focus on content, and takes from them a great deal of the grunt work associated with developing online courses. It also ensures that technology is more appropriately exploited, thus justifying the cost and effort.

Furthermore, it is not just academics who are struggling with technology for teaching; so are university administrations. A report by the Coimbra group of universities (2002) commissioned by the European Commission to explore why take-up of e-learning has been so slow in European universities indicated that university senior administrators often did not understand the technology and in particular did not have adequate strategies for the planning and implementation of e-learning and distance education. In other words, they need training, too.

What professional distance education provides then is the added value of high quality at reasonable cost. It does this through identifying clear academic goals and priorities for distance learning, instructional design that takes account of different learners' needs and exploits the benefits of technology, project management that ensures a cost-effective production and delivery process, accurate costing and business planning, and course evaluation and maintenance; in other words, quality assurance.

Conclusions
Distance education plays a unique and important role in post-secondary education. It opens access where there is a scarcity of places on campus, and it serves well the needs of the increasingly important lifelong learning market. New technology, in particular the asynchronous use of the web and the Internet has added value and improved the quality of distance education, where students have access, and increasingly in most developed countries and for many in developing countries that access is now there. However, there is still a huge market for the more traditional mass media-based open universities, particularly in the less economically advanced countries.

New technology can add value if used selectively and appropriately, but it needs to be used with caution. Synchronous technologies and learning objects for instance currently raise more questions than answers for distance education. Access and cost remain critical criteria for technology selection.

It is a mistake to consider that distance education can now be replaced by e-learning. Quite apart from the markets that cannot be served through e-learning, even fully online courses require different approaches to course design, learner support and student administration from on-campus courses supported by e-learning. In an ideal world, distance education should be just one of several delivery options for an academic department. The reality is that at least in

research universities, distance education is not seen by academics as a core activity deserving as much attention as the students in class. For these reasons, separate departments of distance education (perhaps integrated with other central units such as faculty development and technology support) are still needed.

Lastly, new technology raises major challenges for academics. To be exploited properly, major changes are needed in methods of working. Technology raises the skill level of the workforce and this needs a combination of training, team work and project management, It is these cultural changes that are likely to be the biggest barriers to the use of new technology, and for this reason alone, it makes sense to keep distance education as an activity separate from the other teaching areas.

Quality is now the key issue for teaching at universities. Distance education has knowledge, skills and techniques that are of increasing value to the on-campus use of technology for teaching. But its target groups are significantly different from the full-time on-campus student. For these reasons, distance education remains a unique and highly satisfying profession.

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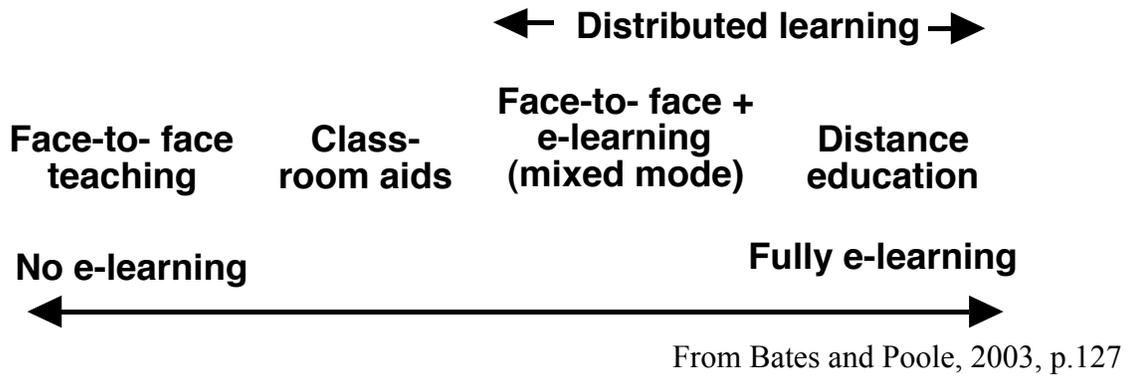
Figure 1: The continuum of e-learning

← Distributed learning →

Face-to- face   Class-   Face-to- face +   Distance
teaching   room aids   e-learning   education
                              (mixed mode)

No e-learning   Fully e-learning

From Bates and Poole, 2003, p.127

Table 1: Comparison of advantages of mass DE vs e-learning

Mass distance education	**E-learning**
Higher access	Lower access
Lower quality (less interaction)	Higher quality (more interaction)
Lower cost	Higher cost

Figure 2: The 'boom-bust-bounce' phenomena of revolutionary technologies

Extrapolated from Gartner

Investment in e-learning

1996   1999   2004   2012

Take-up of e-learning
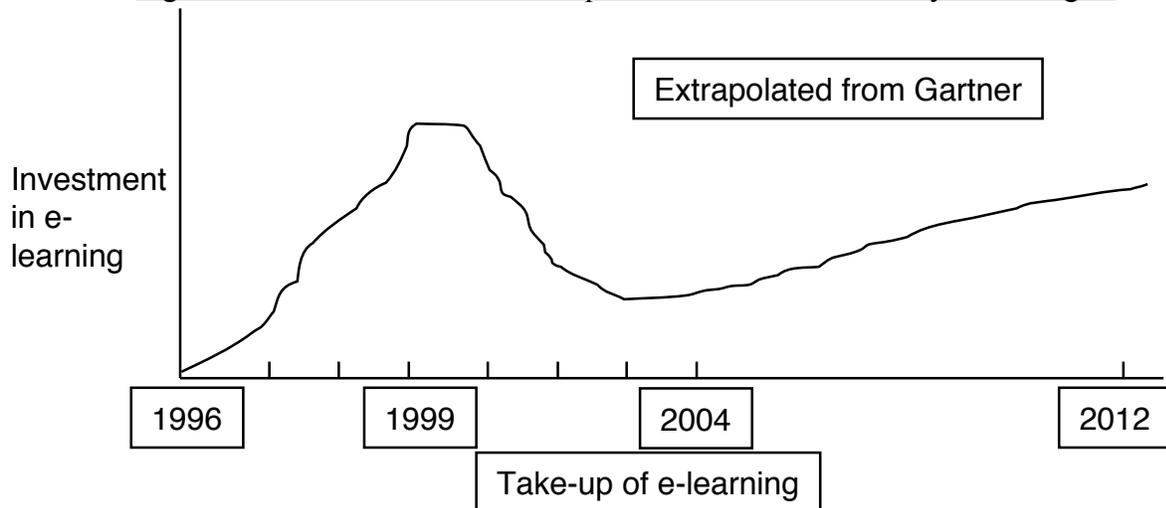
Learn what is lifelong learning and why it's important. Discover how to adopt lifelong learning in your life. Difference between lifelong learning and continuous learning. The reality is that most of us have goals or interests outside of our formal schooling and jobs. This is part of what it means to be human: we have a natural curiosity and we are natural learners. We develop and grow thanks to our ability to learn. Lifelong learning recognizes that not all of our learning comes from a classroom. For example, in childhood, we learn to talk or ride a bike. As an adult, we learn how to use a smartphone or learn how to cook a new dish. These are examples of the everyday lifelong learning we engage in on a daily basis, either through socialization, trial and error,