

Coach Education in the 21st Century :

Challenges and Opportunities

**Plenary address presented at the
“International Coach Education Conference”
University Of New South Wales, 2 December 1999**

Professor James C Taylor, University of Southern Queensland, Australia

Introduction

The rapid rate of technological change and the rapidly growing number of education and training institutions now embarking on Internet-based delivery means that more institutions are involved in distance education than at any other time in history. As institutions throughout the world increasingly offer courses via the Internet, there will emerge a global lifelong learning economy in which organisations will face global competition for students, especially those involved in continuing professional education. The emergence of the global lifelong learning economy could well act as a catalyst for overcoming the institutional inertia that typifies the organisational culture of many education and training institutions. This transition from the Industrial to the Information Age was encapsulated by Dolence and Norris (1995), who argued that to survive organisations would need to change from rigid, formula driven entities to organisations that were “fast, flexible and fluid”.

The Big Picture : Technological Development and Globalisation

More than sixty years ago, an Austrian economist named Joseph Schumpeter (1934) presented a model of development based on a continuous shift in resources from declining to expanding industries. He postulated that every 50 years or so technological revolutions would cause ‘*gales of creative destruction*’ in which old industries would founder and be replaced by new industries. The technology pundits argue that the information technology revolution could be much more significant than any previous revolution. Certainly, the pace of change is much greater.

It is estimated that the Internet reached 50 million users in 5 years compared with radio that took 38 years to reach the same number, and television which took 13 years to reach 50 million users (Hayes, 1998). Recently, Ira Magaziner, President Clinton's former chief adviser on the information economy, predicted that the Internet would have one billion users by the year 2003. The impact of the Internet and the WWW is already having a major impact on the growth of international business through massive developments in e-commerce.

The processes of education and training seem unlikely to escape the influence of such significant global developments, especially as the cost of access to information communication technologies continues to fall, a further indicator of the rapid pace of technological change. For the past twenty years, the cost of computer processing has

dropped an average of 30% per annum. One estimate suggested that computer power now costs only .001% of what it did in the early 1970s (Woodall, 1997). This decline in costs has also been evident in the telecommunications industry. Since a fibre optic cable can now carry 1.5million conversations simultaneously, the cost (and to a lesser extent the price) of an international telephone call has plummeted dramatically. Indeed, it is widely predicted that the marginal costs of telecommunications will tend towards zero, so that the cost of transmitting, though not making, a call from the Sydney to London will be the same as a local telephone call. As Cairncross (1997) has predicted, 'The death of distance as a determinant of the cost of communications will probably be the single most important economic force shaping society in the first half of the next century' (p.28).

What does all this mean for education and training institutions? Such questions have no immediately obvious answers, but paradoxically, the death of distance could well lead to the proliferation of distance education operations. Predicting the exact nature of the specific impact of technological change on education and other aspects of society has, however, always been something of a risky business.

History has demonstrated that predicting the consequences of new technology is remarkably complex. Apparently rational people in responsible positions have been proven to be spectacularly lacking in foresight. For example, as Woodall (1997) pointed out: in 1876, the Western Union Telegraph Company was given the option of buying the patent on the Bell telephone, but declined. Similarly, in the 1940s the Chairman of IBM predicted that the world market for computers would be approximately five. Even as recently as 1977, the CEO of Digital could not comprehend why anyone should need a personal computer.

In the field of education and training, predictions have been less dramatic and largely ignored, since education changes very gradually over a long period of time. It will be particularly interesting to monitor the responsiveness of this sector, especially as it is widely accepted that education must lay the foundation for the success of the global economy. To fulfil this critical role, education must embrace the new technologies, but as we all know, educational institutions tend to change very slowly. There is, however, one notable exception. Institutions with a serious commitment to distance education have been at the forefront of adopting new technologies.

Four Generations of Distance Education : Pedagogical Perspectives

Distance education operations have evolved through the following four generations: first, the Correspondence Model based on print technology; second, the Multimedia Model based on print, audio and video technologies; third, the Telelearning Model, based on applications of telecommunications technologies to provide opportunities for synchronous communication; and fourth, the Flexible Learning Model based on online delivery via the Internet .

As Bates (1991) has highlighted, there are two very different types of interactivity in learning: social and individual. Social interaction between learners and teachers needs to be balanced with the individual student's interaction with teaching-learning resources, including textbooks, study guides, audiotapes, videotapes and computer assisted learning programs. He argues that the view that students in conventional institutions are engaged for the greater part of their time in meaningful, face to face interaction is a myth, and that: "for both conventional and distance education students, by far the largest part of their studying is done alone, interacting with textbooks and other learning media" (Bates, 1991, p.6). One of the strengths of the Multimedia Model of distance education is that it has concentrated efforts on improving the quality of the student's individual interaction with learning materials, such as specially designed printed materials, audiotapes, videotapes and computer-based learning packages, aimed at teaching concepts and cognitive skills associated with clearly defined objectives in the context of a coherent curriculum.

Distance educators have also recognised the need to provide opportunities for social interaction to support effective learning. They have therefore tried to simulate face to face communication through the development of instructional systems based on technologies such as audio-teleconferencing, audiographic communication systems, videoconferencing and computer mediated communication (CMC). These technologies can support contiguous two-way communication between students and teachers. Alternatively, residential schools or local tutors have been used to provide the social interaction that can facilitate effective learning. It is worth noting that the necessary balance between social and individual interactivity will vary from course to course and will be a function of such variables as the subject matter, the specific objectives of the course, the structure and quality of the learning materials, and, very importantly, the student target audience. An overview of various characteristics of distance education technologies is presented in Table 1.

Models of Distance Education and Associated Delivery Technologies	Characteristics of Delivery Technologies				
	Flexibility			Highly Refined Materials	Advanced Interactive Delivery
	Time	Place	Pace		
First Generation - The Correspondence Model <ul style="list-style-type: none"> • Print 	Yes	Yes	Yes	Yes	No
Second Generation - The Multimedia Model <ul style="list-style-type: none"> • Print • Audiotape • Videotape • Computer-based learning (eg CML/CAL) • Interactive video (disk and tape) 	Yes	Yes	Yes	Yes	No
	Yes	Yes	Yes	Yes	No
	Yes	Yes	Yes	Yes	No
	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes
Third Generation - The Telelearning Model <ul style="list-style-type: none"> • Audioteleconferencing • Videoconferencing • Audiographic Communication • Broadcast TV/Radio and Audioteleconferencing 	No	No	No	No	Yes
	No	No	No	No	Yes
	No	No	No	Yes	Yes
	No	No	No	Yes	Yes
Fourth Generation - The Flexible Learning Model <ul style="list-style-type: none"> • Interactive multimedia (IMM) • Internet-based access to WWW resources • Computer mediated communication 	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	No	Yes

Table 1: Models of Distance Education - A Conceptual Framework

In many contexts, including continuing professional education, the clientele for distance education consists mainly of part-time students in full-time employment. Distance educators have, therefore, had to provide teaching-learning resources (printed study guides, audiotapes, videotapes, computer-based courseware, etc) of high quality that could be used at a time and in a place convenient to each student. In effect, these “flexible access technologies” (Taylor, 1992) allow the student to turn “the teacher” on, or off, at will as lifestyle permits. Similarly, access to the Internet facilitates interactivity, without sacrificing the benefits of flexible access, since it can be used to support asynchronous communication. Such flexibility has a major pedagogical benefit - it allows students to progress at their own pace. Thus varying rates of individual progression can be accommodated, unlike in typical conventional educational practices where the whole class tends to progress at the same pace in synchronisation with the delivery of information through mass lectures and tutorials.

While the Correspondence Model has a long history, it is generally accepted that most of the technology enhanced distance learning developments have occurred over the past twenty-five years. Indeed, it is fair to say that the fourth generation Flexible Learning Model of distance education is only just beginning to have an impact in many contexts, but it has several important pedagogical features, which will serve to promote its rapid acceptance and application.

At the University of Southern Queensland (USQ), (<http://www.usqonline.com.au>) the essential features of a fourth generation electronic teaching and learning environment support a learning process that is interactive, non-linear and collaborative. These features include the use of an interactive study chart as a basic navigational tool, which sets the broad parameters of the subject matter content to be investigated, and lists a number of exemplary references. References are electronic and hot linked via specific URLs. Additionally, the students are free to surf the Net for supplementary teaching-learning resources that meet their specific needs. They are also able to download assignments, with those of sufficient quality being added to the teaching-learning resources database for reference by future students. The interaction with courseware materials is, however, only one element of the interactivity built into the USQ pedagogical approach. Interaction with other students, teaching staff and other experts, who act as mentors, is achieved through the use of computer mediated communication (CMC), using a Web-based discussion group. Students are encouraged to communicate through various electronic conferences, established for specific topics as well as for informal social interaction.

Fundamental to online pedagogy is the effective use of asynchronous CMC for ensuring effective interactivity, which is generally regarded as a key facet of face-to-face teaching and learning. It is worth noting that there is a qualitative difference between a traditional on-campus tutorial (real-time verbal communication) and computer conferencing (asynchronous written communication) with the reflective and precise nature of the latter being very different from the spontaneous and less structured nature of oral discourse in either a face-to-face, video or audio teleconference context. "The reflective and explicit nature of the written word is a disciplined and rigorous form of thinking and communicating it allows time for reflection and, thereby, facilitates learners making connections amongst ideas and constructing coherent knowledge structures" (Garrison, 1997, p.5). Computer conferencing is not just another technology, its capacity to re-humanize distance education represents a qualitative shift which has the potential not only to reshape learning at a distance, but also to pervade conventional education systems, including current approaches to coach education. Further, the move to online coach education will be stimulated not only by pedagogical enhancements, but also by economic considerations.

Coach Education Online : Challenges and Opportunities

Although a detailed cost benefit analysis of various technology/pedagogy interfaces is beyond the scope of the present paper, it is worth noting that variable costs tend to increase or decrease directly (often linearly) with fluctuations in the volume of activity. In traditional distance education delivery, the distribution of packages of self-instructional materials (printed study guides, audiotapes, videotapes, etc) is a variable cost, which varies in direct proportion to the number of students enrolled. Internet-based delivery, however, changes significantly the institutional costs associated with students gaining access to learning experiences. Once courseware is online, it may be accessed by an unlimited number of students at "virtually" no cost to the institution. In this sense, it becomes a fixed development cost. The variable cost component of online delivery is then a function of the number of online tutors that may be needed to manage the interactivity through the online discussion groups.

One of the aforementioned key features of fourth generation distance education, the effective use of discussion groups, is constrained in an important way. It is all essentially a function of what Daniel (1999) recently referred to as the "cottage-industry model", which reflects the

traditional working practices of education and training organizations, wherein the same individual does everything including teaching, providing academic support and assessment for a group of students. In effect, the current applications of fourth generation Internet-based delivery tend to generate resource allocation models similar to tutorial-based on campus teaching. Indeed, it is still a fear of many teachers embarking on Internet-based delivery that they will be overwhelmed by email requesting support from individual students. While such fears can be allayed by the use of "one-to-many" communication systems such as bulletin boards, mailing lists and threaded discussion groups, the underlying resource model is not significantly different from conventional on campus teaching, with a staff member being necessary to manage groups of approximately 20 students to maintain a reasonable quality of interaction and academic support.

Nevertheless, depending on the target audience and associated pedagogical design of the courseware, Internet-based delivery not only has the potential to increase access to learning opportunities, but also has the potential to generate significant economies of scale. It is this latter economic consideration that has led to the considerable amounts of venture capital that are currently being poured into online education and training organizations. This commercial influence is reflected to a greater or lesser degree in the following web sites:

<http://www-rohan.sdsu.edu/dept/coachsci/index.htm>

<http://www.teamdiscovery.com>

<http://www.coachesedge.com>

<http://www.iafc.org.au>

When compared to conventional face-to-face coach education, the operational scale of effective pedagogy is limited by the need to achieve the right balance between the capacity of the available staff, time, space and facilities and the number of participants. In effect, the cost effectiveness of the typical face-to-face course is a function of the number of participants that can be managed either as a single group, or as a series of small groups. To a large extent, it is a function of the volume of activity that can be accommodated at a particular site, and it is therefore a variable cost. Because of human and physical infrastructure constraints, it also tends to limit access. For example, the Australian Coaching Council (<http://www.ausport.gov.au/acc/home.htm>) currently runs a Graduate Diploma in Elite Sports Coaching. This course runs at two sites: the Australian Institute of Sport and the Centre for Physical Activity and Sport Education (CPASE) at the University of Queensland respectively. Because of infrastructure and funding constraints, enrolments are limited to about 35/40 per annual cohort, with about half of the students at each venue. Depending on the demand for the course, its availability online along with a range of other award courses and associated effective marketing, could transform the ACC from an organization that is primarily dependent on Government support to a successful commercial entity in its own right. Ultimately, such a claim would need to be put to a reality test through the development of a detailed business plan, but given the nature and structure of the existing course, the development of an online coach education business seems worthy of further investigation.

Conclusion : Coach Education in the 21st Century

The Internet-based fourth generation Flexible Learning Model of Distance Education has the potential to provide students with a valuable, personalized pedagogical experience at much lower institutional cost than traditional approaches to distance education and conventional face-to-face education. As with other forms of continuing professional development, it is inevitable that coach education will be significantly influenced by the inexorable forces of technology and globalization. The major challenge to the leaders and managers of coach education is the extent to which organizations, like the ACC, can be sufficiently fast, flexible and fluid to grasp the business possibilities for sustainability, autonomy and continuous

improvement that are offered by online education and training initiatives in the Information Age. Or will the emerging business opportunities created by the global lifelong learning economy be seized solely by new commercial organizations?

References

Print References

Bates, AW (1991). 'Interactivity as a criterion for media selection in distance education'. *Never Too Far*, 16, 5-9.

Cairncross, F (1997). "The death of distance". In O. Morton, (Ed.), *Exploiting the Information Age*. London: Profile Books.

Daniel, J (1999). 'Distance learning in the era of networks: What are the key technologies?' Paper presented at the Pan Commonwealth Forum on Open Learning , Brunei, 1-5 March.

Garrison, R (1997). 'Computer conferencing: The post-industrial age of distance education'. *Open Learning*, 12, 2, 3-11.

Schumpeter, JA (1934). *Theory of economic development: An inquiry into profits, capital, credit, interest and the business cycle*. USA: Harvard University Press.

Taylor, JC (1992). 'Distance education and technology in Australia: A conceptual framework'. *ICDE Bulletin*, 28, 22-30.

Taylor, JC (1995). 'Distance education technologies: The fourth generation'. *Australian Journal of Educational Technology*, 11, 2, 1-7.

Woodall, P (1997). "Making waves". In O. Morton, (Ed.), *Exploiting the Information Age*. London: Profile Books.

Electronic References

<http://www.ausport.gov.au/acc/home.htm>

<http://www.coachesedge.com>

<http://www.iafc.org.au>

<http://www-rohan.sdsu.edu/dept/coachsci/index.htm>

<http://www.teamdiscovery.com>

<http://www.usqonline.com.au>