

# THE VIRTUAL UNIVERSITY

Models &  
Messages

Lessons from  
Case Studies

Edited by Susan D'Antoni

The university –  
current challenges and opportunities

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United Nations  
Educational, Scientific and  
Cultural Organization



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## List of abbreviations

ICT	Information and Communication Technology
IT	Information Technology
MIT	Massachusetts Institute of Technology
UNESCO	United Nations Educational, Scientific and Cultural Organization

# 1. The crisis in higher education

It is now commonly accepted that educational systems around the world face accumulating economic and social pressures, and are unable to meet the needs of increasingly knowledge-intensive economies. Furthermore, with the emergence of the Internet, the education landscape has changed along with that of commerce and sociocultural interaction. Whereas IT merely enhanced productivity or control over information, the Internet is an even more powerful technology that reshapes social and economic relationships.

The uncontrolled growth of information is flooding universities and learners alike with knowledge from many more sources than ever before. At the same time, increasing competitiveness and globalization are creating needs for learning that extend beyond the scope of the traditional degree to a lifetime of learning. The changing conception of knowledge has been characterized as a shift towards a more activity-based, distributed, customized, adaptive and interactive paradigm.

Given these changes, universities have fundamentally to rethink their roles. They need to be reshaped to address the needs of a knowledge-based society. The World Declaration on Higher Education (UNESCO, 1998) summed up the changes required by stating that higher education should be equally accessible to all, be linked in a seamless educational system starting from childhood, provide for lifelong learning, be relevant to society, use diverse educational models, provide for essential staff development, ensure quality, be student-centred, ensure women's participation and embrace the potential of Information Technology (IT) and networking.

The turmoil that universities have experienced over the past 10 years has been caused by the broader social changes that have taken place due to globalization, technological developments and the information explosion. Together they have profoundly altered traditional views about the university. The changes have been felt differentially; some countries are slower to experience them, and some universities are much slower than others to dismantle the walls around their ivory tower. Information and Communication Technology (ICT) has opened up fundamentally new options for universities both in how to run the business of higher education and in the methodologies of teaching and learning.

## 2. Agents of change

So interrelated are the agents of change for universities, that it is impossible to categorize them in order of importance. Each one is both cause and effect, and from the perspective of the university, it is not particularly relevant to disentangle the primary from the secondary elements. Suffice to say that the cosy picture of the university drawn above, while inevitably superficial and never universally applicable in all countries, has evolved almost beyond recognition in less than a generation.

### **Globalization**

At its simplest, the notion of globalization represents a movement away from seeing the world as vast and chaotic to experiencing it as a global village, a sort of intensification of awareness of the world as a whole. In fact, the frontiers that used to divide nations are collapsing, especially in economic spheres, so that goods, services and people are available across the globe in increasingly immediate ways. Similarly, the relationship between knowledge production (i.e. research) and teaching and learning is inevitably changing in globalized conditions. At one level, the globalization of the world's economies is leading to increased permeability of national educational boundaries as well as a greater emphasis on internationalization of curricula. At another, more profound, level we are experiencing the globalization of knowledge.

Many databases, research articles and even primary sources are now openly available on the Internet, and much of the explosion of information in all disciplines is either caused, exacerbated or, at least, encompassed by the Internet. The digitization of data is affecting the very core of what is considered data, and predictions abound that the pursuit of knowledge is becoming synonymous with knowledge that can be digitized.

In the global economy, the race to add value to products and to create new knowledge has led to a hierarchy of countries where some are leaders, some are followers, and many are falling further behind. Countries as well as subgroups within countries can become marginalized or isolated, and their specific knowledge, such as local cultural traditions, may become lost or valueless in the global economy. Traditional educational systems are not meeting many of the new needs, let alone the existing needs of large sections of the population.

### **Connectivity and the impact of the Internet**

The emergence of the Internet as a new communication medium is affecting the patterns of social interaction profoundly. Inevitably, therefore, it is having a commensurate impact on education. For example, the skill of memorization is less valued today, not because it is useless, but because there are so many more important skills for young people to develop. The need to be able to find, analyse and synthesize information matters more than the ability to remember information.

This is only one small example of a bigger change in the kinds of learning that are necessary in a connected world. The change is evolutionary rather than revolutionary, but it is taking place 'before our very eyes'. That makes identifying the really significant aspects of the change sometimes hard to distinguish from the transitory impacts of technology-based connectivity. Nevertheless, a few trends seem undeniable:

- The need to interact with people and information as part of the process of understanding and developing as a learner.
- Passive acceptance of ‘authentic knowledge’ is no longer appropriate. Learners need to be proactive in determining what and how they are to learn, through engaging with ideas and with other learners. One of the keys to this transition is by sharing know-how, by using and adapting what someone else has already learned.
- The acceleration in the production of new knowledge and the consequent necessity of processing more information at greater speed than before.
- The pressures of time are driving an emphasis on durable information and the ability of learners to distinguish this from the ephemeral. Learning and reflecting on learning can no longer be associated only with the classroom. Informal opportunities to learn at work, at home and at play, are gradually becoming as significant as formal courses.
- The globalization of information and access to that information, such that knowing how is more important than knowing that.
- In a world where information is instantly accessible by all, what is valued is how to find, synthesize and apply information.
- The Internet is the current vehicle for this change and underscores the acceptance of knowledge as that which can be digitized and transmitted electronically.

The world of the Internet reflects and perhaps accelerates the increasing privatization of life and blurs the hard and fast line between the real and the virtual. At the same time, it has created communities of communicators, learners and practitioners that rival face-to-face groups in their intimacy, support and learning outcomes.

### **Digital divide**

Across the world, higher education institutions are under pressure to integrate new technologies, particularly online learning, into teaching and learning. Advocates maintain that online learning can cut delivery costs, widen student access and improve the quality of learning materials, and these goals are central to the majority of universities and colleges. In the developing world, additional forces make online learning even more appealing: rapid population growth, an expanding middle class, the rise of knowledge-based economies and limited indigenous higher education infrastructure. The irony is that while online learning might be of most benefit to developing nations, the developing world has generally poor telecommunications infrastructure and insufficient funds to invest in expensive new technology.

Nearly 90 per cent of the world’s Internet users are in the developed countries which together comprise 16 per cent of the world’s population. In Africa and the Arab States, they constitute only 1 per cent of the total, thus revealing that a large percentage of the world’s population remains isolated from the technological advances and is still living in the pre-information age.

The Internet is the archetypal global medium and, in theory, should be the means for realizing universal education and equality of opportunity. In fact, access to the Internet is still problematic on anything resembling a global scale: many course providers have little experience in writing materials for this new environment or in designing and running online interactive courses; students who enrol in professional updating courses have not developed the study patterns or discipline to sustain participation in courses with ‘undemanding media’; and if cultural and linguistic differences are not addressed specifically by course designers, Western English mother-tongue students will invariably dominate online discussions. So

access to the Internet is only the beginning of the digital divide; training, support, pedagogy, language and experience are even greater barriers.

### **Commodification of knowledge**

Another disorienting piece of this mosaic of changes has been referred to as the commodification of knowledge, the valuing of information in economic terms rather than for its social and cultural significance. Where the book, the classroom and the obligatory curriculum typify the old view of knowledge, there has now been a questioning of the underlying assumptions about the fixity and stability of the word, the linear text and the teacher as the authoritative repository of meaning. Globalization and the Internet are influencing the dominant function of knowledge towards a position of serving the socio-economic system, that is, towards the position that knowledge should be produced to serve the contemporary globalized system and to stay ahead in the competitive world markets. Academic research has become orientated to performance, to outcomes and targets, rather than being motivated simply by the spirit of curiosity and free enquiry. The focus is on application rather than contemplation.

Similarly profound changes have occurred in the teaching of knowledge. Cyberspace creates a reader-controlled environment in which the distinction between the reader and writer (and by implication, the student and the teacher) becomes redundant. With cyberspace practices there are no authoritative meanings waiting to be found and learned by the student, rather meanings are negotiable. Hence learners do not simply interpret meanings but actively collaborate in creating meanings, and thus are more able to determine their own paths of learning. Meaning-making itself takes on a different form (Edwards and Usher, 2000, p. 48).

As knowledge has changed its function, so the university has become more consumer oriented, more dominated by a managerial approach and a logic of accountability and excellence. While there is considerable resistance to calling students consumers, universities are increasingly having to regard them as consumers in terms of providing the courses they want, meeting their needs for just-in-time and just-the-right-amount of learning.

### **Access and government funding**

Across the world, governments are less and less willing or able to fund universities at the same level as heretofore. Many countries which used to provide free tuition for students have now introduced fees, and academics are having to find other sources than government block grants to fund research. In some cases, funding of education by governments is contingent on extending access to under-represented populations: ethnic minorities, the disabled, females, or people from socially deprived areas. In other cases, governments have funded particular educational initiatives such as virtual universities – either consortia of existing institutions or new institutions set up especially to offer online courses.

All universities are having to adapt to a more competitive environment. In the developed world, the numbers of 18–22-year-olds are falling and in developing countries, there is increasing competition from virtual universities abroad. Universities are having to respond by developing marketing plans, technology strategies and new vision statements about the kind of direction they intend to take in the face of the changing market and funding regime.

### **Lifelong learning and flexibility**

The information age and the connectivity provided by the Internet have led to a reduced ‘shelf-life’ of the undergraduate degree, which is said now to be less than five years.

Postgraduate degrees are increasingly important in many fields and retraining is necessary in almost all. Most professions have introduced mandatory staff development at regular intervals and companies are recognizing that knowledge and knowledge management are the keys to their continued viability. All of these factors have led to a new situation in the United States, where adult registrations for higher education courses now outstrip those from the traditional 18–22-year-old school leaver.

The notion of a ‘job for life’ is a concept from the last century, no longer appropriate for the twenty-first century. At least one prediction is that the average worker will have not just five jobs in a lifetime, but five different careers in a lifetime. Even if we recognize the usual exaggerated scaremongering in such a prediction, it is increasingly apparent that the responsibility for training, retraining, updating and reskilling will inevitably fall more and more on the employee, not on the employer.

Some employers will fund their employees in almost *any* kind of learning programme, as they realize that maintaining an enquiring mind matters more than any specific information acquired. Others insist on their employees, following programmes that, in their view, contribute to the company’s ‘bottom line’. Still others have passed most of the responsibility for learning, in terms of time and cost, to their employees.

The most obvious implication of this demand for lifelong learning is the need for flexible learning opportunities. This is one of the main drivers of e-learning and the adoption of asynchronous interaction technologies. Lifelong learners will inevitably be fitting their learning into and around many other demands on their time. The demand for life long learning also drives interest in modularized courses: the need for short learning opportunities, tailorable to different requirements and personalized to individual learners. Course providers need to offer learning opportunities that are quickly adaptable to different markets, that can be resized, customized or updated, and that can be produced or perhaps assembled in response to changing demands. The emphasis in most e-learning programmes on a student-centred pedagogy is also in keeping with the passing of responsibility for the general ‘health’ of one’s learning on to the employee. Finally, the increasing focus of many online opportunities is much more on the processes of learning than on the content. So, for example, online activities develop skills in communication, working in teams, finding and evaluating information resources, storing, accessing and handling large amounts of data, working with new technologies, updating and refining existing skills and knowledge.

This web of interrelated forces of change has left many universities bewildered and disoriented. There have been predictions of the demise of the university as an institution unable to adapt to current pressures. Counter arguments have pointed out that universities are among the oldest institutions in the world and will evolve in time because they fulfil deep personal and broad social needs. Furthermore, the present e-learning market is immature, and moving from a command structure to a demand structure is bound to bring discomfort, confusion and uncertainties.



### 3. Challenges

These forces of change have resulted in a number of real challenges that universities face as they evolve in tune with the larger societal forces.

#### **Improve quality, increase access, reduce costs**

ICT has been seen as the way out of the dilemma caused by the demand to reduce costs and increase access and student numbers. Online courses cater to the lifelong learning market and can be useful for some minority learners as well. There is much research evidence that online education produces the same or better results in terms of marks as traditional courses, and there is anecdotal evidence that students engage in more interaction in online courses than in campus courses. E-learning is gaining in acceptance, and quality guidelines are being developed and adopted in order to counter the rogue diploma mills that sell degrees or produce very poor online courses.

While corporate trainers have been able to show cost savings in moving to ICT-based training, most universities find that ICT adds to their costs. The more emphasis they place on maintaining or improving quality, the more costly online learning is. The infrastructure, equipment and maintenance costs are only the beginning: new staff, new training and greater workloads add up substantially. One of the problems is the legacy systems that most universities have in place already and that make incorporating online learning an additional cost. Virtual universities starting from scratch may find cost savings easier to make.

So the challenge is to do more with fewer resources, and many universities are seriously trying to do this. Some are setting up spin-off companies to market virtual learning and software to support it. Others are seeking partnerships and consortia to share online teaching resources. Sadly, the solution for some has been to close departments that no longer attract sufficient students.

#### **Modularization of education through use of learning objects**

The idea of making multiple uses of existing teaching material – across different faculties, for different markets, for shorter courses, or for sale to other institutions – is very appealing to universities that have large amounts of capital stored in their academic coffers. Furthermore, students and employers are demanding more individually tailored courses. These tend to be short, targeted topics, or require company-specific case studies, or culturally adapted material. Out of these pressures has come the notion of a learning object: a short piece of learning material that can be combined with others to form a course or learning module. The idea is that the learning objects produced by academics are tagged with appropriate metadata and stored in data repositories that form a pool from which to create new courses. In order to make these repositories accessible across institutions, considerable effort is currently being invested in devising standards for designing and tagging learning objects.

The increasing recognition that good content is very expensive to produce is supplanting earlier hopes that online learning would be much cheaper than face-to-face training or campus-based education. The Massachusetts Institute of Technology (MIT) OpenCourseWare announcement that all course content would be made freely available on the web has further underlined the fact that educators need to focus on the processes of learning and the

supporting and accrediting of learners, and not necessarily or solely on the production of content.

The challenge is to see whether learning objects can be used in higher education to deliver a quality learning experience yet also be easily reusable.

### **Changing role of the faculty/teacher**

At the most obvious level, academics are spending more time in front of a screen than in front of a class of students. It is also a commonplace to note that many academics are 'closer' to colleagues around the world through electronic communication than they are to colleagues in their own building. A new phenomenon is that of the institutionless, online tutor, the virtual itinerant who ekes out an academic career working from home for various institutions, teaching students who never meet face to face. Some of the new virtual institutions 'cherry pick' academics from traditional universities to design or tutor courses for them in their spare time.

Academics, especially those at prestigious face-to-face campus universities, have long regarded distance education as a second-best option for students and a tiresome, time-consuming, third-rate duty for themselves. This attitude is changing very rapidly, partly as a result of pressure from their superiors to develop off-campus provision, and partly from students themselves. Nevertheless, designing a course for the web is quite a change for most academics from preparing a series of lectures. Apart from the need to rethink the content, the visuals and the support mechanism, there is for many the unusual experience of having to work in a team. What was once a very private performance in front of a group of students becomes a team effort often, involving critical commenting on drafts of the web materials.

This form of 'public exposure' is only the beginning of the change from lecturing. Even for academics who already work in distance education, a much more significant change is required to tutor online courses in which students dominate the interactions and the tutor becomes a guide and facilitator. While constructivist, collaborative models of learning are not new, they are certainly the dominant paradigm in most online courses. Even in campus-based courses, it is increasingly difficult to sustain the old transmissive model of university teaching. In most areas of the curriculum, there is a greater emphasis on learning how to find out for oneself than on learning what the teacher knows.

Many online courses attract an international body of students. This has implications for the curriculum, not only in the type of courses offered, but also in the content of all courses offered. A much wider range of examples, case studies and references is necessary, at the same time as a much more careful scrutiny of language and expression. Students using a second language are confused by local expressions, jargon and abbreviations, and international students easily misunderstand references to national events, jokes or other topical items. It is a considerable challenge to prepare stimulating, up-to-date and engaging teaching material that is at the same time inoffensive, understandable and linguistically clear to all cultures. This is the reality of global online teaching.

### **Need for e-learning skills**

The impact of modern technologies has altered very little the popular conception of learning as a transaction between the teacher and the learner. In many countries the predominant view of the learner is as a vessel to be filled and, what is more, a vessel with a limited capacity for taking in information. Yet new technologies are having a significant impact on the whole

learning system, both on the supply side and on the demand side of learning: they undermine assumptions about teaching and tutoring, about learning in one place in groups of similar ages, about the administration, the support and the accreditation of learning.

Many developed countries are on the verge of being able to envisage universal access at all ages to computers, television and telecommunications, with their impact of speed and spread. Modern technology provides information and communication twenty-four hours a day, seven days a week. It disregards time zones and is capable of helping those who are isolated by geography, disability, infirmity or social status. In the USA, Canada and the UK there are universities which have adopted a policy of ubiquitous computing, all staff and students having networked computers at all times, which allows them access to communication, office productivity and research tools.

But only the individual can decide to learn and to develop a combination of knowledge, skills and understanding. The technology merely facilitates. The impact of modern technologies, and their rapid spread of availability to everyone, is, unlike the impact of any other technologies on learning, raising profound practical questions at every point in the learning process.

The new technologies place control of the learning process in the hands of the learner. The learners can choose the time, the place and the pace of their learning. The level, too, becomes an individual choice: e-learning is a learner-driven system.

Universities in countries with limited resources for e-learning face very difficult problems in trying to equip their students with the skills, experience and online opportunities that the country needs to develop as a knowledge-based economy. In Asia, the proportion of the population participating in the Internet revolution is small but the rate of growth is rapid. In countries where the infrastructure is reasonably well developed, pressure is growing to use e-learning because of the growing number of foreign universities offering virtual courses. In Africa, industry is taking a lead in fostering ICT-based education, and international agencies have also played a key role in promoting e-learning.

There is growing certainty that, at the very least, what should be learned in schools is how to learn, to become a discerning learner, and to be equipped with the knowledge, skills and understanding to become an effective citizen.

The new technologies are a powerful force in achieving these objectives because they provide everyone with the means, hitherto undreamed of, to access information. Information is thus universally available. What matters more today is the capacity to use it. Learning how to learn has always been the 'Holy Grail' of teaching; learning how to e-learn is equally challenging.

### **Supporting e-learning**

Support services for online students are a critical success factor in e-learning and are essential for meeting quality standards applied to online courses. Online learners who are seldom or never physically present on campus need the same access to library resources and services as on-campus students. The institution is obliged to ensure access to an extensive array of electronic library resources and support staff. Other facilities that are also necessary include: IT support usually in the form of a telephone help desk, electronic submission of assessments, and online registration, administration, and tutoring.

One of the implications of the use of ICT in all forms of higher education is the issue of increased workload. There is mounting evidence that both the development of online materials and the tutoring of students online are more time consuming for academics than the traditional lecture. While many 'early adopters' of technology have turned enthusiastically to online teaching and have devoted more than the normal number of hours to becoming experts in their fields, the question arises as to whether this is sustainable in the long run.

### **New kinds of institutional leadership**

E-learning initiatives require a change in leadership style and approaches within universities. The turbulence created by the depth and degree of change in universities has meant that effective leadership of educational institutions has never been more important. In keeping with the nature of the changes, university leaders in the digital age need to understand institutional cultures and deal with the inevitable dissonances that arise. Obviously they need to be technology literate themselves and to demonstrate the value of collaboration, teamwork and communication at all levels of the organization. They also need to take risks and be opportunistic, managing change is necessary but not sufficient. Changing times call for flexibility and adaptability. Just as students need support in developing as independent learners, so faculty need support in facing the changes in their role, in the curriculum and in the institution.

The impact of technology on the whole institution is of such magnitude that the leaders of the university cannot delegate decisions about technology strategy to the information officer. For most universities the senior team needs to IT issues and to integrate them into the strategic vision of the university. Institutional leaders must develop and support this vision and communicate it to the whole university community. They then need to ensure institutional alignment of support structures and policies.

## 4. Opportunities

Despite the enormity of these challenges, ICT presents a number of opportunities for universities, which suggest a way forward for their evolution.

### Growth of virtual universities and partnerships

Every day there are announcements of new companies being formed to market online and distance-taught courses, or new partnerships among existing institutions to broker courses and programmes both nationally and internationally. Just like airline companies, universities around the world are ‘partnering up’. There are a variety of reasons for forming partnerships or consortia of universities:

- sharing resources, costs and infrastructure to deliver e-learning;
- competing with international providers;
- reducing duplication among existing universities.

Some of these initiatives are government sponsored, but many others are developed without any government assistance. Particularly common are partnerships between universities in developed and developing countries.

*Such partnerships can also act as a means of entry into the global e-learning market for less economically advanced countries. The partner institution from the less economically developed country brings adaptation to local culture, language benefits, local or national accreditation, sharing of costs and risks, and access to neighbouring markets or markets with similar language and culture. These are all considerable benefits for the partner from the more developed country. (Bates, 2001, p. 54).*

However, a partnership is not a magical solution. It requires careful attention to the initial construction and to the continual maintenance of the relationship between the two institutions. Both universities need to make a commitment to collaboration and to be ready to alter existing organizational arrangements or patterns of behaviour. It is not an easy solution, but without strategic partnerships, universities will find it difficult to compete with the mega-market spaces that are emerging in the higher-education landscape.

### Blended learning

Any media-related term that is popularized undergoes the following trajectory: at first it is a buzzword; then it becomes overused so that its early adopters move on to coin new words and concepts; and finally it either dies out completely or finds its rightful place as signifying a particular idea or practice. Already the early adopters of e-learning are looking around for new words or are adapting the term to cover new meanings. M-learning, meaning mobile e-learning ‘on the road’ or anywhere outside the office, is the latest buzzword. Meanwhile, e-learning is being redefined as ‘enhanced’ learning or even ‘experiential’ learning.

These substitutions for ‘electronic’ reflect a realization that it is not the electronic nature of e-learning that captures its true value, but rather the opportunity to integrate working, learning and community into the workplace. Furthermore, the earlier e-learning adopters have come full circle in rejecting an ‘either-or’ view of learning online versus face-to-face. So-called

*blended* solutions often offer the most satisfactory outcomes: fifty-fifty models of face-to-face and online learning can combine the best of both worlds; even 75 per cent online with one face-to-face or residential meeting is successful in overcoming the limitations of online learning while benefiting from its overall cost-effectiveness and flexibility.

Importantly, blended approaches can encourage participants to make *better* use of face-to-face contact in the knowledge that preparation and follow-up can be conducted online. Totally online courses should be reserved for those contexts in which it is impossible or unreasonable for learners to come together – typically international events and training courses, or projects in which learners cannot leave their operational setting. Synchronous technologies provide a partial substitute.

What does this mean for the continued investment in face-to-face and residential facilities for higher education? On the one hand, blended solutions to learning have strong pedagogical justifications: exposure to ideas through several different media definitely improves understanding and assimilation. On the other hand, the provision of multiple media is more costly. Some distance-teaching universities have found that students are very positive about electronic tuition, but are less happy when it is a complete substitute for face-to-face tutorials. This has left the institution with all the costs of managing physical *and* technology-based support.

As students adjust to the notion and to the practicalities of learning online, and as the number of students with home access to the Internet grows, these replication costs may be the inevitable price of change and innovation. With each passing year, more and more administrative and tutorial services are being offered online, with greater and greater value evident in the investment in online infrastructure. However, in higher education, just as in the workplace, there are areas of the curriculum, types of experiences, and forms of tacit knowledge that for the foreseeable future still require face-to-face interaction as the primary delivery mode.

### **Open Source and Open Courseware movement**

The announcement that MIT was going to make its course content freely available on the web marked a new step in the evolution of the university. It underlined the growing realization that content is not (or at least no longer) the primary focus of teaching and learning. Content can be given away free; what matters is the support of students and the nurturing of enquiring minds and the development of independent learners. In theory, this Open Courseware movement should be a great opportunity for universities in developing countries, as they can build on the expertise of other academics and concentrate on supporting learners rather than producing content. In fact, the whole Open Source philosophy is driven by a strong belief in the importance of freely available, non-proprietary software and, by extension, courseware.

The Open Source model of software production has grown out of a community of developers, who contribute pieces of code, fixes, and improvements to an ongoing software project, for example, an operating system. The code of the software is then regularly updated to incorporate contributions that have been deemed useful by the community into official releases. There are several key principles to the Open Source model. Firstly, the code is freely available. Secondly, the contributors provide their services for free. Changes to the code are decreed by perhaps one person or a committee, but this usually arises out of acceptance by the community as a whole. With Open Courseware, the idea is that any university can contribute to the pool of materials and draw on materials in their own teaching.

In terms of courseware, this movement is only in its infancy, but it holds considerable potential for all universities in evolving to more cost efficient working practices, less redundancy and greater equality of opportunity.

### **Growth of local study centres and telecentres**

One of the ways in which both developed and developing countries have sought to meet the demand for increasing access to higher education is through the use of local study centres. Sometimes called community learning centres or telecentres, these sites have different characteristics in different countries. In many cases they are connected directly with a university and provide a venue for tutorials, access to resources and a local presence. In other cases they are funded by development agencies or other private means and provide access to a wide range of learning opportunities from different institutions.

As a means of providing access to e-learning, telecentres are the latest refinement of the local learning centre. Telecentres offer communal facilities for services such as videoconferencing, access to the Internet, telephone, fax and e-mail. While access to technology is a major element in the telecentre concept, the provision of a meeting place for students is also important. Most centres are able to be flexible in responding to changing demands for different learning options and in catering to diverse needs in the community for education at all levels. Nevertheless, these centres face real challenges in terms of their sustainability and their ability to satisfy local educational needs. The cost of equipping and staffing these centres remains prohibitive in many developing countries:

*The issue of costs is also a hindrance to developing learning spaces. The costs associated with using ICT are also prohibitive in many developing countries. While the unit costs of hardware and software are being lowered in terms of the US dollar, the worsening exchange rate of developing countries means that there is no appreciable drop in the costs. The successful use of multi-purpose centres for virtual education relies on trained and professional support. Often learners require support, whether online or at the centres where they access the learning materials. This support, however, is often lacking in developing countries where, to date, very few scholars are familiar with teaching and support in an online environment. This situation poses a threat to being able to deliver online learning as well as to the development of online courses that are context-specific to a country or region. (Naidoo, 2001, p. 21)*

### **Move to a student-centred pedagogy**

It is surely not a coincidence that the movement towards a student-centred pedagogy has gathered force just as the technologies to support such a move have taken hold. The Internet has been called a disruptive technology, that is, one that significantly changes the way people and systems operate. Teaching online is not a process that can be controlled in the way that face-to-face lecturing can be. In the online environment, the teacher becomes a facilitator, guide or even expert resource, but no longer the sole determiner of the student experience. The Internet is too vast, the impact of student-to-student communication too great, the asynchronicity of the environment too ephemeral to control. The learner now decides when and where to log on, how to work through the course materials, what resources to draw on, whom to work with collaboratively, when to contribute to discussions, and so on. While this self-directedness is hugely welcomed by many students – and particularly those who are confident, self-motivated and resourceful learners – it is not universally successful with all learners. Those who have poor study habits, lack self-discipline or motivation, have been

educationally disadvantaged, or are driven almost solely by extrinsic reasons for wanting a degree, tend to find the student-centred pedagogy bewildering, too demanding or too much hard work. In any case, students do need a gradual process of learning to be self-directed. They need training and practice in ICT skills of searching, analysing and managing web-based resources; they need a student-friendly online environment that encourages and rewards interaction, and they need supportive tutoring to help them adapt their study patterns from linear working through textbooks and lecture notes to interactive engagement with ideas, resources and other students.

The opportunity this presents to universities is first of all to reduce the annual presentation of content through lecturing and move to greater engagement between teachers and students. While threatening to some academics, this move can be inspirational and refreshing for many others. Second, the focus on peer learning and collaborative activities can release faculty time for interaction with students through e-mail or group conferencing. Third, the increased engagement of students with the learning process can reduce drop-out rates and improve satisfaction ratings.



## 5. The global marketplace for higher education

Given the challenges and opportunities facing universities, it is important to ask questions about the emerging global marketplace in higher education.

### How extensive is the market for global e-learning?

Predictions about the size of the global e-learning market abound and the hype surrounding the importance of entering the e-learning market space is hard for universities to resist. Nevertheless, it is now apparent that many of the ‘early adopters’ have ceased to exist and announcements of closures of e-learning ventures have been all too common. In fact, as Farrell points out in *The Changing Faces of Virtual Education*, the virtual education agenda is evolving:

*It is no longer solely, or even primarily, about technology. The focus now is about whether or not it is appropriate to the institutional vision and values, what operational issues it will create for the organization and how the costs can be managed. This changing agenda is partly due to the fact that there is generally more experience with results of ICT use in education. However, it also reflects the fact that the debate has become of more concern to the mainstream decision-making process within institutions, rather than being isolated to a specific, and more peripheral, part of the organization such as the ‘distance education’ unit. (Farrell, 2001, p. 145)*

Competition from virtual universities, corporate universities and other private providers of e-learning will continue to erode the traditional student base of universities in both developing and developed countries. However, the lifelong learning market is significantly larger than the traditional undergraduate population of school leavers, so the market for e-learning is expanding all the time.

### What are the barriers and benefits of virtual courses?

For most academics, designing a course for the web is quite a change from preparing a series of lectures. Apart from the need to rethink the content, the student activities and the support mechanism, there is for many the unusual experience of having to work in a team. What was once a very private performance in front of a group of students, becomes a team effort, often involving critical commenting on drafts of the print or web materials.

This form of ‘public exposure’ is only the beginning of the change from lecturing. Even for academics who already work in distance education, a much more significant change is required to tutor online courses in which students dominate the interactions and the tutor becomes a guide and facilitator. This constructivist, collaborative model of learning is hardly a new phenomenon, but it has become the dominant paradigm in most online courses. Across many areas of the curriculum, there is a greater emphasis on learning how to find out for oneself, rather than on learning what the teacher knows. This change is unsettling for the teacher and also requires a new attitude to learning on the part of the student.

Nevertheless, there are many benefits. The pioneers of the new online learning courses report renewed interest in and even excitement about the rewards of working closely with students, nurturing an environment for learning, guiding students through the maze of online resources

by good course design and interaction in online discussions. Some have found a new career, often towards the end of a traditional one, reworking their tried and true teaching strategies for the new medium of the web or, in some cases, multimedia CD-ROMs. In fact, there is evidence that one of the main elements in the success of many technology-based courses is the renewed attention given to the teaching and learning processes that these technologies have demanded of academics. Instead of repeating the same content in lectures year in and year out, the academic can distill the ideas into course content either through print, the web, or multimedia. Then the focus can be on the more dynamic and interactive side of learning.

### **Is this a win/win or win/lose process for developed and developing countries?**

The Internet, and in particular web-based education, has the potential to enhance access to knowledge (leading to technological leapfrogging) and to help universities break out of outmoded and poor teaching methods. However, it can also exacerbate social inequality if the poor do not have basic access to the rich information resources of the web. There is no doubt that globalization has allowed some virtual universities in developed countries to make learning opportunities available to students in developing countries (Tschang and Della Senta, 2001). For countries or institutions with minimum levels of Internet infrastructure, significant resources are available through the Internet in the form of public-domain software, data, documents, courses, digital libraries, course curricula and other web materials.

However, it is clear that simply having access to courses and software on the web will not solve the individual learners' problems in developing countries, and may even present barriers. Systems developed in technology-rich countries often will not fit with traditional cultures, systems or economic conditions in technology-poor countries. Furthermore, while it is often assumed that IT and other technologies have no cultural context, many technologies and their uses actually have a destabilizing effect on traditional cultures. Finally, language is another barrier to shared access to digital resources. Language-translation technologies are perpetually 'just around the corner' and as yet a translator that works across many languages and multiple contexts is still a long way off.

It seems, therefore, that while virtual education could play a democratizing role and provide benefits for both developed and developing countries, this vision is still more aspirational than real. Bates concludes that:

*e-learning is not the answer to many of the most pressing educational problems faced particularly by poorer developing nations. Other strategies, such as open universities, can provide greater access and more cost-effective delivery of education.* (Bates, 2001, p. 117)

## 6. Conclusion

The changes that universities are already undergoing are not just inevitable and necessary, they are actually beneficial from the point of view of many students, employers and even academics. The focus on students, new methods of delivery, access, flexibility and connectivity are positive directions and are breathing fresh air into many of the less credible corners of the concept of a university. The role of the teacher/trainer/tutor is changing rapidly, but there is no evidence that the role is diminishing, it is rather evolving. E-learning is empowering the individual learner so that the teacher is no longer the gatekeeper of knowledge. E-learning has reinforced the importance of informal learning and helped to bring about a convergence between learning and working, between learning and communicating, and between learning and entertainment. Universities have the possibility of emerging from this time of turmoil with more robust procedures, more respect from the community and more commitment to the goals of society.

## References

- Bates, A. W. 2001. *National strategies for e-learning in post-secondary education and training*. Paris: IIEP-UNESCO.
- Edwards, R. and Usher, R. 2000. *Globalisation and pedagogy: space, place and identity*. London: Routledge.
- Farrell, G. (ed.). 2001. *The changing faces of virtual education*. Commonwealth of Learning. Vancouver: The Commonwealth of Learning.
- Naidoo, V. 2001. The changing venues for learning. G. Farrell (ed.), *The changing faces of virtual education*. Vancouver: The Commonwealth of Learning, pp. 11–28.
- Reddy, V. and Manjulika, S. (eds). 2002. *Towards virtualization*. New Delhi: Kogan Page.
- Tschang, F. T. and Della Senta, T. (eds). 2001. *Access to knowledge: new information technologies and the emergence of the virtual university*. Oxford: Elsevier Science.
- UNESCO. 1998. *Higher education in the twenty-first century: vision and action*. Final Report, World Conference on Higher Education, UNESCO, Paris 5–9 October 1998.