

Learning and Teaching in a Changing World

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INTRODUCTION In his audio-taped agenda, David Hawkrige (1995) identified five issues worthy of discussion: globalisation, electronification, commodification, domination, and liberation. Each of these relates directly to learning and teaching in a changing world.

Globalisation: Hawkrige asked if distance education was becoming a truly global activity, rather than the collection of local or national activities seen at that time. He asked if there was any evidence of a growing number of learners in one country studying in another, of policies to recruit learners to study at a distance from other countries. While he acknowledged the cooperation represented by regional universities, like the University of the South Pacific and the University of the West Indies, he wondered as to the prospects for mega universities. He also speculated as to the creation of other institutions, like a university of Southern Africa or an Arab Open University.

Electronification: The term "electronification," coined by Hawkrige in 1995, has not been adopted by others. However, the developments he foresaw in multimedia delivery and online learning/eLearning have been dramatic.

Hawkrige asked how soon the whole world would be wired and whether such electronification would be merely a first world dream – in that access to eLearning in terms of hardware costs and software licences, of training staff in the use of appropriate media and its delivery, as well as the IT skills of learners, would need substantial investment. Without such investment he suspected that the hopes of increased access and equity would be compromised.

Commodification: It was evident in 1995 that within individual countries and regions educational institutions were competing for students. Often the cost of courses for nationals was subsidised by central governments which made overseas recruitment problematic or a two-tier pricing policy cumbersome. Hawkrige wondered as to the growth in the sale of knowledge products, not just within an individual country but across national boundaries. Indeed, in his taped agenda Hawkrige invited listeners to consider where to place a £10,000 investment among commercial distance learning providers, an industry in its infancy.

Domination: Hawkrige suggested that globalisation, electronification, and commodification can readily lead to domination. Powerful educational

providers, like the mega universities and even larger commercial providers, can so easily dominate the provision of smaller, perhaps less well resourced institutions. In such environments customers are typically asked to consider the economics of investing the resources required to develop learning materials for such relatively small groups of learners when the purchase of existing materials would be more cost effective. However, he wondered if there is a danger of the ideologies embodied in the purchased materials being transmitted from one culture to another or imposed on them. Would the recipient cultures be in danger of being deskilled in terms of materials design and system development? Would progressive commitment to a commercial provider irretrievably commit an institution and make them dependent?

Liberation: Hawkrige asked if globalisation would assist in the meeting of a worldwide need, one that would improve access and equity. He asked if electronification would overcome the disadvantages of not only place and time but also access to a world of resources. He wondered if, in a predominantly market economy, commodification would drive down prices of learning materials and support systems. He asked if distance learning would increase understanding of minority cultures and not swamp them.

GLOBALISATION In his book *Mega Universities and Knowledge Media* (Daniel, 1996), the former vice chancellor of the Open University stated that merely to maintain the present proportion of the world population that benefit from a university level education “a sizeable new university would now be needed every week” (p. 4).

A new university is not being opened every week, but the opportunity to study and the resources available are expanding daily—probably equivalent to a new university each week. Search for any item of academic information on the Web or in specialist databases, and marvel at the vast number of sites and resources available. The International Centre for Distance Learning (ICDL) (<http://icdl.open.ac.uk>) has assembled and maintains a database of over 35,000 distance learning courses from over 1,000 institutions in 100 countries. There are courses available from accountancy to zoology, and numerous subjects in between. Subject areas that were once thought could only be taught in a conventional seminar, laboratory, workshop, or clinical setting are now available at a distance. It is possible to follow a distance learning course in perfumery or acupuncture, sport and exercise science, or midwifery—the scope is enormous.

Other databases such as the Distance Learning Course Finder have a record of 60,000 eLearning courses offered by 131 countries (<http://www.dlcoursefinder.com>). The database reveals that one can study for a Master of Business Administration from the University of Athabasca or Indira Gandhi National Open University, from Monash University or Harvard—or an online business course from the 2,700 currently on offer (<http://www.mba-course-finder.com>). In this context it is estimated there are 500 million Internet users at the present time and the growth shows no sign of abating (Ryan, et al., 2000). Prestigious institutions like the Massachusetts Institute of Technology in the United States are making their teaching materials freely available on the Web (the Manchester Institute of Technology

likewise). But, of course, if learners want the qualification that ratifies their learning they will need to register as students and pay the fee!

It is evident that a global market exists for open, distance, and flexible learning courses with consortia being formed to pool their resources and make them even more accessible. For example, those institutions that form Universitas 21 (<http://www.universitas21.com>) collaborate in a whole range of ways from the interchange of students and researchers to course materials. Similarly, the Global University Alliance (<http://www.gua.com>) illustrates how new groupings are being formed to pool their expertise and resources and make them more widely available. Most recently eleven U.K. and U.S. universities have aligned themselves to form the Worldwide Universities Network to develop and market graduate courses for online delivery (<http://www.wun.com>). Increasingly these consortia are being formed to maintain and extend their competitiveness and secure market share. They promote and sell a product developed in a western culture, one that may not be appropriate in other cultures.

The courses assembled by universities are not restricted to adults but are increasingly being made available to able school pupils and to industry. For example the Open University recently conducted a pilot scheme where its courses were available to sixth-form students. It was so successful that the scheme is to be extended to another 100 specialist schools in the United Kingdom. The scheme will further strengthen the competitive edge enjoyed by the Open University and will sit alongside the growing list of internal and external providers, a point acknowledged

by Peters: "Even the conventional student of the future is likely to be engaged in eLearning from more than one provider as the barriers between further and higher education and schools continue to break down" (2001, p. 4).

A product of globalisation is, of course, competition, where entrepreneurial institutions seek to attract the nationals of one country onto courses developed and offered by another. This competition can be fierce and often targets particular groups of learners rather than offering the full range of courses enjoyed by a national of the host institution. For example, in the tiny island state of Fiji which hosts the main campus of the University of the South Pacific, there are fifty external providers who target business studies and information technology. Furthermore, almost half of the business schools in South Africa are external providers and there is no shortage of competing institutions within the Pacific Rim. When the Open University of Hong Kong was established it had over 100 external providers competing for learners in Hong Kong; (Wong & Todd, 2001). It was only by careful targeting of courses, reducing costs yet improving quality that the university was able to resist this pressure and subsequently overcome it.

ELECTRONIFICATION

Electronification is not a term in common use in open and distance learning, but its impact since 1995 has been dramatic and is set to be even more dramatic. At the time of the ICDE workshop Tony Bates predicted, "Those countries that harness the power of multimedia communications for education and training purposes will be the economic powerhouses of the twenty-first century" (1995, p. 249).

Within my own institution, Manchester Metropolitan University, there were no online courses in 1995. However, in the academic year 2001 to 2002 there will be 335 active course areas and approximately 8,000 learners online; over 100 academic staff will be actively involved in assembling online materials for their learners. This increase is mirrored elsewhere in the United Kingdom and around the world. Indeed, it is estimated that in the United States 72 percent of teenagers will be online by 2003 (Stanton, 2000).

The costs of computer equipment, peripherals, and software are major determinants of the use of IT in teaching and learning, especially in developing countries. However, there are developments that offer hope to those who wish to use the technology but cannot afford it. A typical desktop computer with VDU, printer, and modem connection could cost £1000 in the United Kingdom. However, each day hundreds of machines that are broken, damaged, or considered obsolete are either consigned to the "breakers yard" for recycling or to landfill sites. A typical initiative provided by Preston College, a U.K. Further Education College, is also evident elsewhere. The college has developed a training scheme in which it receives such machines free of charge, teaches course participants how to repair and refurbish them to a baseline standard, and then sells them for £200—one-fifth of the cost of a new machine!

A rather different initiative has been made in India where the Simputer Trust has developed the Simputer (http://news.bbc.co.uk/hi/english/sci/tech/newsid_1560000/1560771.stm). This newly designed handheld computer, which has the facility to connect to the

Internet and to other devices such as keyboards, printers, scanners, etc., was to be launched in November 2001 and available in four Indian languages at a cost of US\$200. With a separate Smart card it is possible for a group of individuals to purchase the Simputer, exchange and draw upon the information available on the Internet, and yet retain the privacy of their own information. In contrast the American military is planning to launch, in 2003, its own online provision for military personnel. Based on a consortium of twenty-four institutions, the programme (<http://www.earmyu.com>) will have an estimated 90,000 learners. They will be provided with a laptop computer, printer, Internet connection, and books to study anywhere in the world at any time. It is expected that the U.S. Navy will mount a similar programme.

COMMODIFICATION There is an international marketplace for teaching and training materials and the means of delivery; it is one that is growing daily. Like all products the cost is related to volume—the more units produced the lower the unit cost—thus favouring large organisations and/or those who can secure a large population for their courses. A major economic argument in favour of distance learning is that its graduates can be produced cheaper than those from conventional institutions (Rumble, 1997). For example, in the United Kingdom the Open University claims to produce graduates at less than half the price of other U.K. universities (a claim that other U.K. universities are beginning to challenge). This is possible because of the limited range of courses that the Open University offers and the large student populations enrolled in its courses. However, it acknowledges that other institutions,

such as the Indira Gandhi National Open University, produce high quality courses even more cheaply.

In this international marketplace the learner is a client who is free to purchase whatever course they wish, from whatever provider they wish. To meet this market huge organisations are being formed—organisations that will represent formidable competition for even the largest mega universities. In January 2000, Time Warner and AOL announced their planned merger to become the fifth biggest company in the world. In the same month, in the United Kingdom, yet another high-street electrical retailer offered its own free Internet service, and ownership of microcomputers increased even further. In Japan mobile videophones became available, and from an online order amazon.com could deliver a book halfway around the world in a few days. In February 2000 the British mobile phone company Vodofone announced a massive takeover of the German company Mannesmann to become the largest mobile telephone operator in the world, with 54 million customers in Britain, Germany, and the United States. (Vodofone is currently experimenting with the latest G3 phones in Japan prior to worldwide distribution.) In announcing this takeover the chief executive commented upon the role of mobile phones in providing access to the Internet and worldwide communication, putting access in the hands of the users. With resources like these, the potential of the knowledge media to create learning environments coupled with talented teachers, the next seven years is likely to see many more innovations.

Consider for a moment a major resource in any course: a book, or more recently

e-books. International publishers are currently developing their e-book lists at an amazing rate. This includes not merely individual titles but the opportunity to download parts of books, and to pay for only the parts a person wants. The American Association of Publishers estimates that the e-book market is likely to be a US\$2.3 billion industry by 2005. Powerful consortia are being assembled to develop/exploit this growth. For example, Price Waterhouse Cooper, Inter Trust Technology, and Adobe Systems are working together to provide access to e-books via Adobe's Portable Document Reader format (PDF). While Adobe Acrobat software may be free, the cost of the e-books is unlikely to be so—that is assuming the learners have the ability and equipment to download, print, and purchase this material.

Countries around the world are recognising the opportunities that are becoming increasingly available and are planning for a growth not only in higher education but also in industry, commerce, and the public services. Within the United Kingdom there has been a significant increase in the use of self-instructional learning materials in the workplace: increasing from 43 percent in 1999 to 63 percent in 2000 (Department for Education and Employment, 2001a). All predictions suggest this will continue to increase, with universities increasingly competing with national and international commercial providers.

DOMINATION There is much talk of the knowledge economy, of the knowledge media (Eisenstadt & Vincent, 1998), and of investment in a country's major asset—its people. But who will provide the fuel for the knowledge economy, who will exploit the knowledge media, who will provide the materials

from which the knowledge and skills can be acquired? Governments will undoubtedly lead through policy initiatives and are doing so. For example, in support of learners over nineteen years of age the U.K. government provides Individual Learning Accounts (ILAs) worth £150 to any learner who is prepared to contribute £25 towards a course provided by an accredited provider. It also allows learners to obtain an 80 percent discount of the cost to purchase the training required. (Unfortunately, due to widespread fraud the scheme was suspended.) Despite these problems, U.K. universities and commercial institutions are beginning to meet this need. In April 2001 in the United Kingdom, the Open University and the University for Industry (Ufi) signed a memorandum of understanding. Anne Wright, the chief executive for Ufi, subsequently stated: "Between us, our complementary missions and good working relationships will ensure that the U.K. is a world leader in flexible and lifelong learning and application of new technologies" (Ufi, 2001, p. 1).

This world leadership is obviously intended to benefit U.K. learners. However, it is also likely to be the base from which these institutions retain a competitive advantage (see Daniel, 1996), and secure a return from the investment by the British government by selling this expertise overseas. Furthermore, it is evident that developments with the U.K. eUniversity will involve a partnership of educational and commercial providers.

Commercial organisations are competing to transform your existing material into self-instructional material (increasing online teaching materials), but at a cost. For example, Knowledge Pool (<http://www.knowledgepool.com>)

develops materials via a traditional course team approach, but also includes an accounts manager. The company will not only transform your materials into online materials but will provide online tutors, assemble frequently asked questions, and provide online assignments. In a Follow the Sun network of staff, Knowledge Pool also offer 24 hour, 7 days per week, 52 week per year support for the systems and your learners.

Other commercial organisations such as Pearson Education (<http://www.pearsoned.com>) and Educational Multimedia Corporation (<http://www.educationalmultimedia.com>) offer similar services. Pearson Education will provide the plug-in cassette that provides an instant online course—developed elsewhere but which, they claim, will map onto your course objectives. The claims for such commercial organisations are great. For example, Educational Multimedia Corporation's Website states, "We ensure an increased return on your learning investment by maximising knowledge retention through continuous interactions" (2003).

For those wishing to exploit the new media, an early decision will involve deciding which virtual learning environment (VLE) to adopt or whether there is a need to create your own. While guidelines and criteria are available that will allow users to assess which VLE is likely to be most appropriate for them (Inglis, Ling, & Joosten, 1999), commercial companies are working hard to maintain and even increase their market share. You may benefit from the competition between providers such as Blackboard, Lotus LearningSpace, First Class, Web CT, etc. The benefits of a standard, supported platform

with features resulting from massive investment in the VLE may need to be balanced against the learning and teaching restrictions they impose. However, the recent report from the Commonwealth of Learning (Farrell, 2001) argues that developing countries may fail to exploit the potential of online learning due to the lack of a reliable communications infrastructure. We will wait to see whether wireless communication systems like Bluetooth (<http://www.ericsson.com/bluetooth/default.asp>) will offer a solution.

LIBERATION Access to higher education and the ability to study “at any time, at any place, and at any pace” can be liberating. It not only can provide the knowledge and skills that the workplace requires, which may secure a better future for those who benefit from it, but can provide insights that can change a person’s life forever. The sheer number of opportunities available to learners is staggering. In the 1960s higher education in the United Kingdom, as in many countries, was an elitist system; about 8 percent of eighteen-year-olds entered university. By the 1980s in the United Kingdom this had risen to about 15 percent, and today it is about 30 percent. The U.K. government target is to expand provision to such an extent that 50 percent of eighteen- to thirty-year-olds will have benefited from higher education by 2010. In many developing countries, with a population profile that includes a significant proportion of people aged under thirty, a similar target will be difficult to achieve.

To meet this target, U.K. universities will have to recruit learners without the traditional qualifications and from other than upper socioeconomic groups. Furthermore, financial support for U.K.

learners is such that only the poorest receive grants—judged by many to be inadequate for the purpose—while others receive loans they will need to repay. The challenge is clear: universities will have to recruit from previously disadvantaged and under-represented groups, and reconsider the financial support of learners, if these targets are to be filled and if an increased proportion of the population is to be given the opportunity to experience and succeed in higher education.

The U.K. government’s drive to widen participation has resulted in several initiatives to raise awareness of the benefits of higher education, increase recruitment and retention, and ensure student progression. The Higher Education Funding Council for England (2001) invited all institutions of higher education to submit their Widening Participation Strategies and Action Plan. The three-year funding period will be marked by the specification of specific targets, milestones, and procedures to monitor performance. In addition, the drive to encourage closer links between schools, Colleges of Further Education and Higher Education, is being funded also by the U.K. government via the Excellence Challenge, a £150 million scheme initiated in April 2001 to bridge the current divide and ease progression.

However, two factors may militate against these aspirations: the skills the learners need to succeed in higher education and the funding of it.

Functional literacy and numeracy, and increasingly IT literacy, are key skills; they are major determinants of progression and success in further and higher education, and subsequently to success in work and day-to-day life.

Developed countries like the United Kingdom do have extremely high levels of literacy, numeracy, and IT skills—but they are not universal. Indeed recent findings from the Basic Skills Agency (Department for Education and Employment, 2001b) revealed that in the United Kingdom seven million adults are functionally illiterate and enumerate. Of these four million are aged between twenty-six and fifty-five years—the very group that one would expect to be the most productive members of any community. These adults are a significant part of the population who risk exclusion. To meet this need the U.K. government is investing £1.5 billion over three years to redress this deficiency. The strategy, based on an orientation interview, will be to provide a combination of face-to-face teaching, drop-in centres, and self-instructional material for use in the home. The recently established provider Learndirect is providing a range of self-instructional and online courses for these learners. It estimates that since its inception it has provided teaching and training materials for over one million learners. In concert the National Institute of Adult Continuing Education (England and Wales) launched a campaign in 2001 to provide 5,000 bite-sized courses. It was intended that the courses would be free, typically one to three hours of study time, and targeted at adults. They succeeded in assembling almost 20,000 such courses in less than two months (<http://www.learndirect.co.uk/bitesize/>)!

Lack of literacy, numeracy, and IT skills is likely to inhibit the learners (McMahon, et al., 1999). Others have demonstrated (Kirkwood, 1995) that access to low-tech media, television, radio, audiocassette playback—in a home setting where there are family demands on this equipment—can hinder study.

This problem is compounded where learners may not have ready access to computing equipment. Indeed, in a study involving 800 university students (McMahon, et al., 1999) it was reported that ready access to a computer accounted for 50 percent of the variance of student attitudes to online learning. Students who do not have ready access to computers are frustrated and the result is negative attitudes to online learning (Crotty, 2000).

An increasing proportion of learners take part-time employment during their study to offset the cost of study. This obviously puts them under increasing pressure to make time for study. In a recent report from the Open University Centre of Higher Education Research and Information and the University of Central England Centre for Research into Quality (“Students Strive to Stave Off Debt,” 2001), it was revealed that 60 percent of U.K. students work during the academic year in an attempt to reduce the cost of their study. They worked approximately eleven hours per week in term time, with 80 percent working in vacations. Furthermore, those students from poorer backgrounds, identified as in the bottom two social classes, formed a majority of those undertaking work. Other studies at Northumbria University (“Student Jobs May Be Cause of Failure,” 2001) indicated that less affluent students were more likely to work in term time, were from lower socioeconomic groups, obtained lower grades, and were twice as likely to fail their course.

CONCLUSION Since the agenda presented by Hawkridge, there have been significant changes in the education environment. These include funds expended, participation, and impact of the new media. The U.S.

brokerage house Merrill Lynch estimated that the global expenditure on education and training increased significantly to US\$2 trillion in 2000, with 50 percent spent in Europe, 33 percent in the United States, and 15 percent in developing countries. Furthermore, the global number of learners is set to more than double in the next generation from an estimated 70 million today to 160 million by 2025. Among these it is estimated there are four million distance learners. Open, distance, and flexible learning is not only a global activity, offering a huge increase in the opportunities available to learners, but one that is increasing.

Electronification has proceeded at a pace. The robustness of Web-based systems now means that learners can study from any place on the globe, combining media that are most appropriate to their needs. The development of wireless communication (such as the Bluetooth system) may offer opportunities and flexibility previously associated with science fiction. However, as globalisation and electronification increase so does commodification. The cornucopia assembled by the universities and commercial providers of the world appear to be available to those who can afford it. There remains the fear that powerful institutions, and their consortia, may become even more powerful. Furthermore, there is a danger that those ideologies embodied in teaching and training materials provided by external institutions may come to dominate vulnerable cultures.

However, there are developments that suggest the future is indeed bright. For example, in the United Kingdom, Learndirect (<http://www.learndirect.co.uk>) collated almost 20,000 free

courses, in bite-sized chunks, to over one million learners and demonstrates that distance learning can contribute to the liberation of learners—in giving them access to a world otherwise closed to them. The Learning and Skills Development Agency (“Youth Will Get Learning Call on the Mobile,” 2001) launched its three-year M-Learning Project, based on a mobile phone and designed to deliver key skills, links to education and training, and careers advice to sixteen- to twenty-four-year-olds. It aims to redress poor literacy and numeracy amongst this non-participating group of learners.

In the intervening period since 1995, it was argued:

The question is becoming, not whether flexible learning can enhance the cost effectiveness of traditional teaching (important though that question is), but whether a university will survive and prosper in the next century without rapidly integrating the various dimensions of flexible learning into its process, culture and values. (Moran, 1997, p. 181)

Perhaps it should be added that if access and equity were to remain key items on our agenda, the provision of open and distance learning material to provide skills of numeracy, literacy, and IT would be the major means of achieving this.

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