

E-learning in Post-Secondary Education, June 5-6 2001, Tokyo

- Report by Donald Hirsch, rapporteur

1994: “Interactive computer communications that may one day become as commonplace as the telephone are already being pioneered by particular groups of users on dedicated networks.” OECD, *Learning Beyond Schooling*,

2001 “Nearly 40% of all [US] college courses were using Internet resources as part of the syllabus in 1999, compared with 25% in 1997 and 15% in 1996”. OECD, *E-learning, the Partnership Challenge*

The closing years of the 20th century saw the confluence of three radical forces for change in post-secondary education. The first was diversifying demand: a sector that once catered mainly for young full-time undergraduates is now having to serve a wide variety of markets, from corporate training to individuals studying part-time for diplomas. The second was new modes of supply: information and communications technology makes it possible to offer education at times and places to suit individuals, supplementing or even replacing face-to-face teaching with “virtual” learning. The third was the prospect of global markets: with liberalising trade regimes and new technical possibilities, institutions that have hitherto been mainly nationally oriented are starting to become part of a burgeoning international trade in education services.

Put these three trends together, and the possibilities for change in the years ahead are mind-boggling. At the extreme, one could envisage a network of multinational virtual universities competing across the world to supply everything from a BA in literature for 19-year-olds to a part-time MBA for senior executives. In such a world, the shape of national systems of education, the role of university campuses, and the structure of faculties – all things that have contributed to the strengths of universities in the past – would be uncertain.

The experts and representatives of 17 countries meeting in Tokyo for the seventh OECD/Japan Seminar, on “E-learning in post-secondary education”, did not envisage such a change to take place tomorrow, or even the day after. Yet they acknowledged that learning modes that a few years ago were little more than theoretical possibilities are now becoming a reality.

The most important underlying change since the OECD’s Centre for Educational Research and Innovation looked at similar issues seven years ago (see OECD 1994, cited above) is that what was then referred to as the “information superhighway”, projected to work properly some time in the unspecified future, has now become a commonplace of everyday life in the form of the Internet. Widespread use of Internet resources by post-secondary institutions does not in itself create effective or interactive e-learning, but (particularly as broadband access spreads) at least establishes an environment for doing so. And the turn of the century saw the evolution of the first respectable “virtual” post-secondary institutions, whose businesses it is to

push the boundaries of learning via the Internet, rather than just employ it as a useful tool where convenient.

The seminar also heard that trade in educational services is already a major business in some countries – yet still a long way from seriously challenging established national postsecondary education systems. The biggest part of this is in the form of students travelling to study overseas. This business has become established over many years, but a newer prospect is the widespread provision of courses and qualifications by providers originating from, and in some cases, operating outside the country of a student who stays at home. New communication possibilities create one of the conditions that could allow such trade to expand rapidly. Two other prerequisites, central to the discussions of the seminar, cannot as easily be taken for granted. First of all the development of systems of quality assurance, accreditation and recognition of qualifications that allows student to buy foreign learning services with some confidence that they will meet their needs. Second, a free trade regime that allows overseas providers fair access to educational markets, subject to any reasonable and non-discriminatory regulation that may be needed to meet the first condition.

In exploring these themes, the experts and national representatives at this seminar considered a range of interconnected issues, which can be summarised as five key questions:

- How important a transformation has already taken place?
- What kind of electronic learning is likely to meet the demands of post-secondary education markets, and offer value for money?
- In considering whether barriers to trade should be lifted, how can quality assurance and recognition of institutions and qualifications be fairly internationalised?
- What kind of post-secondary education systems are countries moving towards (and in what sense will or should national “systems” survive)?
- Can high-quality knowledge production survive a transformation from traditionally structured universities to the more diffuse environment suggested by the virtual economy?

1. The scale of change to date

The intersection of technological, educational and trading developments are still a long way from creating a serious threat to national education systems. Yet the participants in the Tokyo seminar were left in no doubt that each development is real, and that genuine change is underway.

First, take e-learning. The countries submitting papers to the seminar gave ample examples of how electronic resources, and in particular the Internet, were becoming a central feature of post-secondary education. A survey completed last year found, for example, that 57% of Canadian universities offer on-line courses – with 3000 offered

in all. In other countries only a minority do, but growth is rapid: one in four of Dutch universities say they provide electronic learning environments, while all but 10% say they have some plans to do so. In Japan, 34% of 4-year institutions use the Internet for on-line learning and 23% more plan to, and 123 institutions have installed a communications satellite system for organising lectures, seminars and academic meetings.

A crucial question, of course, is what is actually meant by an electronic learning environment or on-line course. A very strong consensus at the seminar was over the key role played by an interactive element. Putting a course reading list on the world-wide web might be convenient but did not fundamentally change education. Emailing materials to remote students is not very different from mailing them in the way that correspondence courses have been doing for many years. A key advantage of electronic communication is that it can be two-way, and can involve students in dialogue with their professors and fellow-students without always meeting them face-to-face. This offers huge scope for allowing people to study when and where is most convenient to them. Yet implementation is hard to quantify. It is difficult to determine how many institutions are using communications technology to its full potential.

A relatively new development that takes e-learning to a more ambitious level is the offering of courses principally or entirely on-line. The University of British Columbia, for example, has developed an on-line course-authoring tool, WebCT, and is using it to operate a programme providing course material to Mexico and Latin America. More ambitiously still, the past few years have seen the emergence of the first real “virtual universities”. The seminar heard from one of them, Cardean University based in the United States, which is academically linked to some of the most prestigious universities in the US and the UK – Carnegie Mellon, the London School of Economics, Stanford, and the business schools of Columbia and the University of Chicago. The example of Cardean demonstrated both the potential of virtual universities and the limited level of their current development. So far, its courses are restricted to business and management courses, largely for corporate and executive clients, even though the ambition is one day to offer a wider curriculum to a broader clientele.

A second important indicator is the scale of international trade in educational services. It is hard to produce accurate data, but it has been calculated that, for example, education is at least the fifth largest sector of internationally traded services in the United States. Most of what is being measured here is international student flows, and one participant at the seminar claimed that, if everything could be measured, it might be second or third. Thus, for anyone interested in traded services, education cannot be ignored. It includes a wide range of forms, notably):

- Free-standing programmes operating outside the country of the supplier (such as an MBA school);
- Branch campuses – at which a degree-granting entity is the child of a home institution;
- Franchised operations – using a third party to give a degree – for example a computer company delivering a university computer science degree;

- Twinning arrangements – in which a degree is gained through study in more than one country;
- Distance education, whether through electronic or other means;
- Study abroad;
- Academics giving courses abroad and/or consultants supplying training courses abroad; and
- Sale of proprietary materials such as books, courseware or testing, together with associated services.

If these activities make education an important part of world trade, then conversely, how important is international trade to education? According to the latest indicators, it remains on the margins for most countries: foreign students represent over 5% of the total in only eight (Australia, Austria, Denmark, France, Germany, Luxembourg, Switzerland and the UK) out of the OECD's 30 Member countries. Yet some countries have been taking a lead in exporting educational services, whether through welcoming foreign students or through selling courses overseas. The most aggressive and successful to date appears to be Australia. It has been active both in welcoming foreign students and in marketing educational products, particularly in Asia, taking full advantage of the combination of its cultural advantages as an English-speaking country and its geographical position close to Asian markets. Yet the extent of its interest in trading in educational services is illustrated by one European market that it has tapped effectively. Norway has over 3000 students (fully funded by the Norwegian taxpayer) at Australian universities.

A third indicator of how things are changing is the growth of non-traditional modes of learning. The numbers seem large in absolute terms - for example over 200,000 Japanese students are enrolled in distance education courses. It is not easy to quantify the relative size of off-campus and on-campus learning activity, since much of the former is part-time. However, Australia has calculated that one in seven students enrolled at its universities are "external": attendance is either incidental or voluntary. Nonetheless, it appears that while there are many forms of off-campus learning, in any one country the on-campus mode remains largely dominant. Thus, it would be premature to think of serious threats to the campus-based model – rather at present a wide range of other activities are starting to complement classroom study within institutions.

2. What can technology contribute?

This seminar took a critical look at the role of e-learning, rather than accepting without question that its growth was a logical and inexorable feature of technical progress.

The concept of virtual learning in its purest form was received with some caution. Participants who expressed a view believed that at least some form of face-to-face contact was a desirable element of any course. Moreover regardless of whether it takes place face-to-face, individual attention to student needs and two-way communication were seen as extremely important.

This view seems now to be held equally strongly by proponents of e-learning as by those inclined to be more cautious of its merits. Indeed, the former claim that the opportunities for interaction through electronic means is one of its main strengths. Yet it was also admitted that the “pedagogy of the Internet” remains underdeveloped, and that it has most often been used as a one-way form of communication.

The concept that e-learning should be a medium of two-way communication between teacher and learner is an important development from an earlier utopian view of learning technology which imagined that computers would to a large extent be able to replace teachers. This has a bearing on one of the most important issues discussed in Tokyo: the cost of e-learning.

Cardean University has developed what is widely regarded as a high-quality platform for a virtual university. This has been immensely expensive – the initial investment exceeded \$100 million, and this kind of cost appears to have inhibited even some of the leading established universities from developing such a platform of their own. To recoup the investment, Cardean will have to sell many courses to many people around the world. But in doing so, it will not be able to market on the principle of, say, a software provider – that marginal costs are very close to zero. If students need teacher support, even from a remote site, marginal costs may well be lower than for on-campus courses, but they will not be negligible. This helps explain why Cardean has started out by selling to premium markets, such as business managers, rather than trying to sell courses to undergraduates on a large scale. The economics of type of virtual education have yet to be tested.

These developments raised the important and by now familiar issue of the digital divide. On the one hand, the rationale for those most bullish about the future prospects for multinational virtual learning is the fact that worldwide demand for post-secondary education appears to outstrip supply, especially in poorer countries whose institutions are less developed. It would for example be daunting for some of these countries to finance expansion in campus-based higher education to the levels of participation (20-30% of a student cohort) now typical in OECD countries – so e-learning might help fill the gap. Yet for new virtual universities, the MBA market seems at present a more tempting way of starting to recoup investment than does mass undergraduate education for third world countries. This does not mean that mass markets cannot develop. Some companies already see e-learning as a means of offering opportunities to large numbers of employees that traditional company training schemes could not reach. General Motors, for example, is using e-learning in partnership with Cardean University to make courses accessible to all of its 88,000 managers.

But how do GM and others judge the effectiveness of such a strategy? An interesting question posed at the seminar was how the clients of electronic learning techniques know that they work. The answer appeared to be “through experience” rather than on the basis of any tangible evaluation. Certainly there is a need for better evaluation of which kinds of learning are most cost-effective. But such assessments may continue to prove elusive, partly because technology is always moving on, and partly because it can be hard to compare like with like. The mode of learning cannot be fully divorced from its outcomes; and e-learning’s most vocal proponents claim that it can do things that would not be possible in traditional classrooms, particularly in terms of engaging

students more closely in defining their own learning pathways. But even this claim is based more on conviction than on independent evaluation.

3. Conditions for international trade

The issue of free trade in educational services has been put squarely on the world trade table by the United States, in introducing it as a topic for negotiation in the GATS (General Agreement on Trade in Services) process. The U.S. proposals relate only to higher education, adult training and testing services. They do not involve primary and secondary education. But there remains a concern that the latter may be included in the GATS too. At one level, this can be looked at in terms of free trade rules, as applied to other goods and services, and in particular to the four forms of services trade identified by GATS:

Mode 1: cross-border supply of services (e.g. selling a distance education course to a student in a foreign country);

Mode 2: consumption abroad (e.g. person studying overseas);

Mode 3: commercial presence of a foreign supplier (e.g. a branch of a foreign university);

Mode 4: people travelling to another country to do business (e.g. a teacher from overseas).

It is reported that countries take a range of measures to keep out educational imports under all these modes, including:

- Direct legislation and policy
- Refusal by qualifications authorities to recognise foreign credentials
- Telecommunications laws
- Restrictions on movement of people
- Excessive delays in issuing permits for institutions to operate
- Tax treatment that discriminates against foreign suppliers.

Yet it was widely acknowledged at this seminar that liberalisation of trade in educational services would not be straightforward: it is not simply a matter of lifting all such restrictions and letting a free market operate. The nature of education made it different from many traded commodities. Two kinds of difficulty were discussed. One was the importance of internationally supplied educational services meeting certain quality conditions, which are less straightforward to regulate than say the safety of imported food. The other was the desire by governments to use education to meet certain national objectives, and the risk that competition from overseas suppliers might compromise their ability to do so.

Over the first of these difficulties, there was clear agreement that a necessary condition for the satisfactory operation of international competition in the supply of educational services is that students should be able to judge what kind of education they are buying and how it will be regarded within their country, especially by

potential employers. This raised the parallel issues of the accreditation of institutions, the control of their quality and the recognition of qualifications.

These problems arise because it is difficult for students to see, in an unregulated market, what will be the benefits of a given course, and also, regardless of its intrinsic worth, whether the qualifications that result will be valued on the labour market. In countries that have had relatively small and homogeneous university education systems, accreditation has not been a serious issue, quality assurance has been relatively straightforward, and qualifications relatively well understood. A country like the United States has had to pay for its more diverse post-secondary education system with rather greater difficulties in this area, particularly around its somewhat byzantine accreditation system, and these complications are starting to emerge in other countries who are in the process of diversification. In the United Kingdom for example, an emerging National Qualifications Framework aims to apply not just to conventional institutions but also to the broad network known as the University for Industry. Electronic courses pose a new set of issues, since some of the features traditionally associated with sound post-secondary education may be absent.

Such problems multiply when it comes to recognising and certifying quality in the case of foreign suppliers, since their mode of provision might be unfamiliar in the host country. This may not be equally true of all providers: some universities, for example, have relatively long-established campuses in foreign countries that have become locally well known. But in particular new multinational e-learning-based institutions with no physical presence in countries where they have students may be harder to subject to local systems of recognition and quality assurance.

What is the solution? A number of different approaches were suggested at this seminar, without any one being adopted as the best model. One was to create quality control and qualifications systems that are more outcomes oriented than has hitherto been the case. In the UK's National Qualifications Framework, a key principle is that qualifications should be broken down into the smallest units that can be separately certified, each based on a coherent set of assessable learning outcomes.

Another possibility is to develop internationally recognised systems of accreditation and quality control. Such global initiatives are in their infancy, with one of the more prominent organisations, the Global Alliance for Transnational Education, having so far accredited only four universities. Another body, the Center for Quality Assurance in International Education, aims to advise governments on quality assurance for foreign institutions, and in particular promotes globalisation of the professions. One simplified criterion suggested by a seminar participant is to start with the principle that courses should be given equal esteem to that which they enjoy in their country of origin. But it seemed clear that ultimately more sophisticated systems would be needed, and that a priority in extending trade in education would be to work on developing such systems.

Underlying efforts to create conditions in which international trade in services can thrive is the motor common to most moves towards free trade: the perception by certain countries that this would serve their interests. It is no coincidence that the two international bodies mentioned above were initiated in the United States, which can expect to be a big net exporter. Some other countries represented at the seminar, while

not openly hostile to the notion of free trade in educational services, had certain reservations that went beyond the need to create the right conditions.

Such hesitancy derived from a mixture of fear of cultural domination and a perception of education as at least in part a public good: the level and character of people's education affects not just themselves but those around them. For this reason governments legitimately aim to promote well-being among their citizens by providing or regulating the provision of certain types of education that are normally compulsory (for children at primary and secondary level), as a more or less widely accessed initiation into adult life (e.g. initial higher education) or serve as part of a system of lifelong learning that can be easily accessed by all citizens (e.g. municipal adult education). There is, for the time being, a consensus in GATS negotiations that primary and secondary education are "off limits" for free trade, and the terms in which post-secondary provision might be opened up will be carefully discussed. But public interest could never be a valid excuse for total protectionism – otherwise countries would ban everyone from studying abroad. Governments need to become clearer about exactly what public objectives they wish to retain for education systems, and recognise the huge scope for private services to be provided beyond this (or indeed within the framework of public regulation supporting collective goals), whether from home or foreign suppliers.

Yet it would be wrong to portray the present debate as a straightforward tussle between free-traders and protectionists. What was striking from this seminar was that neither the strongest advocates of free trade nor those most sensitive to its risks took an extreme position. The former recognised the public interest argument, the latter argued more for a careful approach than a resistance to freer markets. For example a delegate from Canada, a country that has more to fear than most from cultural imports, advocated a loosening that was gradual enough for smaller nations to develop a capacity to compete, rather than permanent protection. Finally, it should be noted that not all delegates agreed that restrictions on trade were really a significant barrier at present: one argued that the much bigger challenge for the time being was to create an environment in which traded educational services could thrive.

4. Relating technology and trade to changes in post-secondary education

Underlying the discussion in Tokyo about the advent of e-learning and the spread of international trade in educational services was the ongoing debate about the character of post-secondary education itself. It is by now well accepted that institutions are having to change to serve new markets, but the debate continues about how they can best do so. While this seminar could not remotely hope to resolve the many issues that arise, it shed some light on a few of them.

One conclusion of the seminar was that e-learning highlights an issue facing higher education institutions more generally – the pressure to provide "just-in-time delivery" to its clientele, rather than to set its own rules, timetables and content criteria. It was accepted on the one hand that this principle could not be taken to an extreme: in maintaining quality standards, universities could not simply treat each student as a client and say "what do you want to learn?" or "what kind of certificate would you like us to grant you?" Yet neither could institutions take their clients for granted, and

in many cases they would need to compete with private organisations, in some cases from other countries, to supply educational services. The challenge was to convince their clients that keeping to standards is a means of maintaining quality, rather than simply a way of setting learning agendas according to the interests of institutions rather than their students.

A closely related theme was the issue of public and private provision. The debate about competition from other countries helped bring out issues around the position of national public institutions versus private competitors, particularly in countries where the most prestigious institutions are public, so well-regarded institutions from abroad may well challenge them more fundamentally than private domestic ones could do. At one level, the discussion seemed to imply a dichotomy between the “public service” mission (e.g. offering bachelor degrees to secondary school leavers) being guaranteed by a domestic public university system and the scope for other institutions to provide a range of other services (e.g. corporate training) with largely private benefit. Of course, when presented in this way the dichotomy turns out to be a wholly false one. It is difficult neatly to distinguish purely public purposes (undergraduate degrees bring both public and private benefit), and quite clear that a single institution can supply a complex array of courses to different clients. Moreover, it is often hard to classify any one sector as wholly public or private, and virtually all public institutions use a range of privately produced materials and services. Thus, while the seminar accepted the need to identify and support public *purposes* in national education systems, a simplified division of sectors seemed undesirable.

If this breaking down of distinctions is leading to a more seamless system of post-secondary education, can and should national “systems” survive? The clear answer from this seminar was “yes” – although they will constantly need to define and justify their role, rather than taking it for granted. As well as continuing to guarantee the “core”, it was clear from the examples from the countries represented that national-level co-ordination could help support the infrastructure for the development of new opportunities in post-secondary education. A good example was Japan’s National Institute for Multimedia Education, which as mentioned above, has brought together 123 post-secondary institutions to install a communications satellite system, the Space Collaboration System, for organising lectures, seminars and academic meetings. Such initiatives can in particular help smaller institutions who could not afford their own e-learning infrastructure to compete and to develop up-to-date delivery techniques within the national system.

5. The integrity of knowledge systems

A final question that simmered throughout the discussions in Tokyo was whether high-quality knowledge production will survive a transformation from traditionally structured universities to the more diffuse environment suggested by the virtual economy. Universities represent an age-old model for knowledge production and dissemination, combining research and teaching in well-esteemed institutions. They have certainly not been perfect, especially on the dissemination side, and purveyors of e-learning claim to be playing their part in improving this performance. But nobody seems quite to know whether an explosion in dissemination might critically undermine a system essential to high-quality knowledge production.

This issue came out most clearly at the seminar in discussions about intellectual property. Patent and copyright laws exist to ensure that individuals and institutions retain an incentive to invest in knowledge production. Easy international reproduction and dissemination of knowledge potentially undermines such a system, since intellectual property rights become harder to enforce. The mass pirating of movies on DVDs in some East Asian countries was cited as a parallel example.

These difficulties could play themselves out in at least two ways, with different implications for the traditional university. When MIT recently announced that it would in the next ten years make all its course materials available free on the internet, it was trying to make a plea against the progressive *privatisation* of knowledge, for example through virtual universities that needed to ensure that the services they provided went only to those who paid for them, but also by universities in general building closer links with private industry. In this sense, MIT was making the point that knowledge itself should be free. Universities traditionally have been able to take this stand partly because they have had sources of income that do not depend on selling knowledge directly – in the form of core funding, student fees or research grants from public bodies willing to allow results to become public. Of course, the economics of such systems are changing, but not enough to prevent MIT from taking this principled stand.

Free knowledge, however, is not the same thing as free learning. The participants at this seminar recognised, as does MIT itself, that putting course materials on the Internet would not enable computer users everywhere to learn what students do who enrol at MIT – a course of study consists of much more than just the supply of a set of materials. But to the extent that universities like Cardean may soon be able to bring the resources of prestigious universities to much wider audiences in the form of real courses rather than just courseware, could the interests of these traditional institutions come to be undermined? The reputation of universities such as Oxford, Harvard or Tokyo – and to an extent that of their professors – has hitherto been bolstered by the exclusivity of access to their wisdom. It may even be argued that the quality of their output is enhanced by the need to retain and justify such exclusive status. Such a system is not necessarily the only route to quality: in other markets, it is possible to sell to a large number of clients because one's product is seen as the best. But it would take quite a transition for this to become the model in higher education, and along the way one might expect a degree of resistance from those with an interest in the present system. None of the participants at this seminar ventured to make forecasts in this respect, but many will be watching closely how alliances such as that between Cardean University and a consortium of prestigious campus universities develop in practice.

Conclusion: watch this space

This seminar heard important warnings against “cyperbole”: the tendency to exaggerate the degree to which electronic communications will change the world. E-learning is as far today from challenging campus education as educational imports are from threatening the far greater volume of within-border learning. Yet there is no doubt that both these phenomena exist and are growing rapidly in some countries. And the world is starting to take an interest.

The keen participation in the seminar was itself an indicator of how national governments and others are becoming aware of the importance of trends in e-learning and educational trade to the long-term future of education systems. In particular, the educational community is realising that it cannot dismiss commercial developments in e-commerce and trade in educational services as peripheral, but needs to become involved with the debate that helps shape the conditions under which such new activities operate. Most significantly, Education Ministers are keen to keep a close eye on these trends. Meeting in Paris earlier this year, they requested that the OECD monitor developments and report back. The eyes of many ministries will be watching this space, whether with excitement or with trepidation.