Bernd Wächter (ed.)

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A Project of the Academic Cooperation Association

ACA Papers on
International Cooperation in Education

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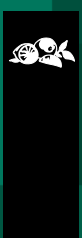

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Introduction

A. Background

The virtual shift in higher education

Higher education has been undergoing major changes in the past years. Often characterised as an "ivory tower" aloof from the ways of the world, it has been thrown into fierce competition in some parts of this world. Education is more and more viewed as a "product", rather than a "public good". Universities are being transformed into the "higher education industry". The paradigm shift towards the commercial and entrepreneurial is also characterised by the emergence of non-traditional providers. Academia, so long amongst themselves in the task of the production and dissemination of knowledge, is being challenged by the corporate sector.

It is fair to admit that this competitive environment is newer to some countries than others. In the US, for example, probably only the extent of competition is really a novel phenomenon. What is – relatively – new everywhere, however, is the fact that higher education goes "transnational", i.e. that universities and other providers enter the "markets" of foreign countries. In a globalised world, higher education is also becoming a globally tradable good (or service). The phenomenon is driven by a strong demand for higher education in countries which cannot provide adequate levels of supply, and by the commercial motive to want to sell courses and qualifications world-wide. "Transnational education" comes in many forms. One manifestation is the "off-shore" operation, i.e. a branch campus of a university in a foreign country. But the dominant mode appears to be already, or at any rate to become, "virtual education", delivered via the Internet.

In the eyes of many, "virtual" or online learning is an educational revolution. The fact that learning comes to the learner, and not the other way around, is being perceived as a quantum leap. Learning becomes (or is anyway said to become) independent of place and time. Educational opportunities suddenly abound, choice becomes almost borderless. For many, online learning therefore became the superior form of higher education. The university as we knew it all along was suddenly stigmatised as the "old" university, a pitiably outdated "brick-and-mortar" institution, which was in no way able to compete with the "new university", the "click university". In obvious parallel to the "old" and "new economy", the prediction was – and often still is – that the "old university" was doomed to disappear.

Internationalisation

In the same period, "internationalisation" became a major trait of higher education, at least in such regions and countries as Europe, North America and Australia. In its self-perception, higher education had always been "international". But reality mostly lagged behind this bold assertion. The mobility of students and faculty was, until recently, a quantitatively very marginal phenomenon. Internationalised curricula are a still more recent trait, as are aspirations for an "institutionalisation" of internationalisation, in other words, the attempt to internationalise every aspect of a higher education institution's operations. These two latter forms of internationalisation really became a noteworthy feature of universities only in the last years of the past millennium.

"Internationalisation" is the key business of the Academic Cooperation Association (ACA) and its member organisations. These members, 20 in Europe and five on other continents, act as "international agencies" on behalf of their respective governments, and provide programmes and funding for the mobility of students and faculty, for the internationalisation of the curriculum, and related matters. It is obvious that a change in the leading paradigm of internationalisation, away from "physical" modes of internationalisation, and towards "virtual" forms, would not leave their work untouched. Together with its Norwegian member organisation, the Centre for International University Cooperation (SIU), ACA therefore decided to explore the implications of the "virtual revolution", in order to assess its likely impact on the present forms of internationalisation, and on its own work.

The Fjaerland conference

The result of this decision was an international seminar, held in Fjærland/Norway, on 11 and 12 June, 2001. This seminar convened some 50 experts on the subject, predominantly from Europe, but also from North America, Australia and Asia. The present publication consists of a selection of papers presented there.

The guiding questions, which ACA was seeking to find answers to, were put to the speakers ahead of the seminar, and thus influenced the presentations. They were:

- will "virtual education" in the medium-to-long run replace face-to-face teaching and learning in higher education? Will the "brick-and-mortar" university disappear or anyway cease to be the dominant type of higher education institution in this process?
- will "virtual education" become the new paradigm of internationalisation? Will it succeed and replace the traditional modes of international cooperation and internationalisation, such as the mobility of students and faculty, international curricula, etc?

- what will be the impact of the “virtual onslaught” on the work of internationalisation agencies, such as the members of ACA? Do they need to substitute their traditional programmes by virtual cooperation schemes, or at any rate supplement them by such offers?

Of course, the way these questions were formulated intentionally overstated the case. The organisers did not expect any simple “yes-no” answers, but hoped that differentiated responses would help them gain orientation in a field in which they themselves were in the role of learners. The rest of this introduction highlights the main findings of the seminar, seen from the point of view of the editor.

B. Findings

Virtual education is partly overrated

As stated earlier, e-learning had been hailed by some as the superior form of tuition, or rather, learning, which would put into danger the existence of the “traditional” university. The fact that it makes possible learning independent of place and time (anywhere, any time, by anyone...) and that it is – supposedly – “learner-centred” (as opposed to the alleged teacher-centredness of face-to-face tuition) was seen as proof of its superiority. All in all, the papers in this publication do not underpin such far-reaching claims. There are differences between authors, as could not be expected otherwise, and some of them, such as Tapio Varis and Knut Olav Aslaksen, see the “brave new world” of online education in a slightly rosier light than the rest. But generally, caution reigns. The “brick-and-mortar” university will survive. E-learning will not put an end to face-to-face tuition. The very high hopes (or, depending on perspective, very desperate fears) are unfounded. A good deal of the enthusiasm over the e-revolution in higher learning might even share the fate of e-commerce: it is not unlikely to turn out as a bubble, and bubbles burst eventually. That does not mean virtual education will simply disappear, however, as can be seen further below.

Challenges to virtual education

First of all, as Peter Scott remarks, online education is not the first deviation from direct face-to-face teaching. Media have been used for a long time. The invention of the printing press marks an earlier landmark in the development of ICT. The Internet speeds up and widens the possibilities of the virtual mode in an unprecedented way, but it does not, as such, add a new quality. Books can also be read independent of place and time.

Second, there are, as Peggy Blumenthal and others underline, a number of challenges that online education is faced with. The first of them is cost. The hope was that online education would be infinitely cheaper than classical

forms of learning. While this may be so in the long run, fast returns on investment are not to be expected. Start-up cost is high. Jones International University, for example, which was founded in 1993, anticipates to be profitable not before 2004. This is relevant news in a sector where, more than in others, commercial motives play an important role. Corporate providers are sure to react to the unfulfilled promises of returns on investment, if no such returns materialise.

Third, there is the challenge of access and equity. Access to computers is rising, with the highest density to be found in the United States. But it is very unevenly divided on a global scale and by social class, creating multiple divisions between "haves" and "have nots". This puts a fat question mark behind hopes that those countries and individuals who are lagging behind most in quality education provision, and who, one thought, could Leap Frog into a new age of enlightenment via the Internet, will actually profit from it. The hopes for the African continent raised in this respect were certainly illusions. But, as Ruben Umaly makes it clear, this goes also for sizeable parts of Asia, the world's largest reservoir of future learners. And, even in countries or continents where access is not a major issue, the use of the new medium presupposes "digital literacy", which, Marja Karjalainen tells us, 87 percent of old people and 82 percent of women do not have even in Europe.

Fourth, quality assurance is a serious issue. Online learning crosses country borders (and many others, too), and therefore easily escapes existing forms of regulation, quality control and accreditation. This opens up fears of fraudulent or low-quality providers. It also makes recognition of qualifications a tricky affair, with effects on customer confidence in the medium. Apart from this, "classical" quality assurance instruments are rarely adequate for online courses, as Robin Middlehurst explains. A new quality assurance methodology for the field of online learning still needs to be developed.

Last, e-universities tend to concentrate exclusively on teaching, and to neglect the two other traditional functions of higher education, research and services, as Marijk van der Wende highlights. That does, at a first glance, not speak against the educational product from a user perspective. It would rather put the "brick-and-mortar" university at a disadvantage, which have to grapple with high costs for research. But can there be, in the long run, high-quality educational products cut off from ongoing research? There is at least a question mark.

E-learning is there to stay

The fact that virtual education will not fulfil all the high hopes attached to it does not mean that it is simply a modish phenomenon which will disappear over time. Online provision of education is there to stay, and will most likely also grow considerably over the coming years. How can this be?

There is an increasing tendency of “mixed-mode marriages”. While exclusive online learning might remain the exception (for the study of young people, that is; see below), “traditional” face-to-face delivered courses will increasingly use electronically delivered components. These can reach from fully Internet-provided modules to the use of low technologies, such as e-mail. Peggy Blumenthal reports that in the US, already some 60 percent of all tertiary-level courses use some form of e-mail to complement face-to-face interaction. We are most likely to see, in the future, many mixed forms, where the traditional way of educational delivery is supplemented in one way or another by electronic means.

More important perhaps, virtual education is there to stay, and grow in importance, because it focuses on a group of learners different from the “traditional” students, namely on working adults, to whose needs the medium seems perfectly geared. Making reference to Robin Middlehurst’s by now seminal report for the CVCP/HEFCE, Marijk van der Wende mentions that these adult learners seek flexible learning instruments, which deliver professionally relevant knowledge in a “just-in-time”-way. In other words, the market for virtual education is in continuing education and training or, as it is called today, lifelong learning. Since knowledge generation accelerates increasingly, and the workforces (of the “developed” world) are rapidly ageing, demand for high-level professional updating of this sort can be expected to further expand.

There is yet another reason why the editor believes that virtual education is there to stay. He was surprised not to find it mentioned by the authors. The general argument runs that, in direct comparison, face-to-face teaching is mostly (though not always) superior to online provision (in the sense of better in quality). But even if this is so, there are surely cases of very poor face-to-face teaching, and very poor courses delivered in this mode. Going one step further, it is probably safe to assume that sometimes whole countries, due to lack of educational reform, for example, deliver traditional products which cannot compare with a well-designed internet-delivered course. Students in such countries are simply the “hostages” of outdated education systems. In the past, the only way out was “emigration”, in the form of study abroad. For these hostages, there is now an alternative. This case also has a bearing on the issue of regulation and competition. Sceptics see regulation as a safeguard of quality and competition as an entrance gate for shady providers. But not all regulation protects the interest of the customer. In shutting out competition, it can produce the adverse effect. A market is not, as some tend to see it, only a threat; it can also be a blessing.

Virtual education is not international

The different authors reached agreement on an important clarification regarding the relationship of virtual education, as in fact any form of “transnational education”, and internationalisation. Virtual education is not inter-

national in nature, or at any rate not by necessity. This is not always acknowledged in the present debate on internationalisation.

The misunderstanding is probably created by the fact that online education, at least when provided transnationally, crosses a country border (it crosses, as Robin Middlehurst clarifies, a number of other borders, too). In all matters related to internationalisation, a border is being crossed too, best epitomised perhaps by students or staff studying or teaching in a foreign country. In the case of all modes of transnational education, this happens as well, but the process is "inverse". It is not the student who travels to the source of learning (the foreign university), but the learning comes to the student. As Marijk van der Wende explicitly remarks, and others, like Peter Scott, implicitly indicate with the question whether there can be such a thing as "virtual mobility", the fact that the source of learning is in another country, and that it is perhaps delivered in a foreign language (English), is not enough to qualify online learning as internationalised. That would require an internationalisation of the content taught or of the learning experience, none of which virtual learning necessarily offers. That does not mean that online education cannot be internationalised. It can be, but, just like "traditional" education, it is not international by nature.

Virtual education will not replace traditional international exchanges and co-operation

Does the above mean that virtual education is not a threat to internationalisation as we know it today? This does not follow necessarily, since, despite the conceptual difference, it might still be that the new type of provision would reduce, for example, the extent of study in another country, since it was no longer necessary to physically move there in order to obtain a degree from the foreign university in question. However, authors did not feel that virtual education would reduce the number of "international" students worldwide.

Peggy Blumenthal points to the fact that while "virtual mobility" is on the increase, so is the traditional form of physical mobility, as IIE's student survey "Open Doors" underscores, in any case for the United States. Peter Scott offers the interesting consideration that virtual learning might actually "whet the appetite" for "real" study abroad, and that the ability or otherwise to satisfy this desire might create a new class system in internationalisation terms. Marja Karjalainen points out that an earlier shift in the EU Erasmus Programme, towards curricular internationalisation and away from the exclusive concentration on mobility, did not result in decreased exchanges. There is also widespread agreement among the authors, even those instilled with an enthusiasm for virtual education, that the physical encounter of people of different nationalities cannot be replaced by whatever else. The spirit of the various statements to this end is perhaps best encapsulated by Peggy Blumenthal's words

But deep down, we remain convinced that IIE's mission of "opening minds to the world" cannot be accomplished without physical immersion in another culture, that painful but educational process of being an "outsider" and realising that one's own perspective is merely one of many ways of seeing and behaving in the world. Travelling in cyberspace is no substitute for travelling across real space...

Virtual education can complement internationalisation

If it is no threat to internationalisation, virtual education can still change internationalisation. It can complement and enrich it. Especially Asta Thorrodsen's example of an international network in nursing studies shows this very clearly. In the joint module of three Nordic universities and an American institution, extensive use is made of ICT, which links students and teachers in four different locations. But Asta Thorrodsen underlines the importance of two joint seminar phases, at the beginning and the end of the module, which brought participants physically together and without which the communication in cyberspace would have been half as successful. This, and further examples, display the added value of the virtual link very clearly: the educational resources, human and material, are widened considerably, and the pooling of different but complementary expertise improves the quality of the educational product. However, it must be noted that, with this example, we have entered the field of cooperation, and we are talking about something very different from an online course delivered by a stand-alone institution. International networking between different learning providers is essential to this approach.

Ulrich Grothus and Marijk van der Wende introduce us to other ways in which virtual means can complement activities in the field of internationalisation. Virtual contact can help to prepare a study abroad phase, and to stay in touch with the host university after returning home. Virtual classrooms of learners in partner universities scattered across the globe become possible. For faculty, the new means widen the possibilities of research collaboration. At an institutional level, new forms of international networking with partner universities are a possibility. For the internationalisation of the curriculum, this more advanced form of internationalisation, Marijk van der Wende sums up the opportunities

...it seems that the main strength of ICT in this area is that it allows the richest settings for international learning to become available for all students, including those who stay at their home institution. These settings can be described as the combination of international content, taught and learned in an international classroom, bringing together staff and students from different international backgrounds, with an emphasis on interactive and collaborative learning processes, which support the acquisition of a range of skills. Moreover, it provides an unequalled richness of resources: experts, libraries, databases from around the world,...

Implications for internationalisation agencies

"Internationalisation agencies", such as the member organisations of the Academic Cooperation Association (ACA) will not lose their job. "Traditional" internationalisation is there to stay. This is one of the messages that the authors of this volume convey to us, especially Ulrich Grothus and Marijk van der Wende. The other one is, however, that the agencies need to open up to the world of virtual education and ICT, since internationalisation itself will be changed and enriched by virtual elements, as described above.

An initial task, for some agencies more necessary than for others, will be, very generally, to gain an appreciation of the relevance and the importance that the virtual mode is likely to have for their work in the future. Ulrich Grothus' article is revealing in this respect (as in many others): when he called a meeting in his own organisation to prepare his presentation on the "virtual challenge", many colleagues doubted that the issue was worth their time, given that there were so many "real" challenges to be addressed. A further task for internationalisation agencies is to build a competence in this new field. Many do not have it yet, or not to the extent necessary.

There are, further, a number of challenges to be tackled. The first one is linked to the new type of learner who is the predominant user of internet-based education: the working adult. Most internationalisation agencies have so far concentrated on the "traditional" student. The adult learner is a rather unknown species to them. Lifelong learning and continuing education and training is likewise a *terra incognita* to many.

Second, for agencies in Europe, at any rate, there is a new institutional player with whom the agencies have, by and large, little experience: the corporate provider. Being used so far to a world of higher learning which is predominantly (in some countries: exclusively) populated by public institutions, this requires mental refocusing on a scale not to be underestimated. In parallel to this need, there might be the necessity for agencies to diversify their funding base, to include the corporate world.

Third, it is obvious that the agencies will need to adapt at least some of their funding programmes. They will have to integrate virtual elements into mobility programmes and schemes for curricular internationalisation. In the field of mobility, as Ulrich Grothus rightly points out, this will probably entail a shortening of stays abroad, in compensation for the added-on distance-teaching element.

Fourth, the agencies have an important role as "teachers", vis-à-vis the higher education institutions. They should help them develop "mixed mode" internationally oriented offers, consisting of study (and teaching) abroad and of virtual cooperation elements alike.

Many agencies are already preparing. IIE is an example in this respect. It is about to revamp its network of member institutions into a basically virtual consortium, which will also offer, to members and others in global higher education, a wide range of web-based services. A daring experiment.

Professor Peter Scott
Vice-Chancellor
Kingston University, UK

Physical versus virtual mobility: A paradigm change in international cooperation

1. It is unfair to complain about the title of my address “Physical versus virtual mobility: a paradigm change in international cooperation”. But I do want to ask some questions about the assumption that the two halves of the title are linked – i.e. that the shift from physical to virtual mobility (if it is not a contradiction in terms to talk about “virtual” mobility) and the shift from an “old” to a “new” paradigm of international cooperation are the same (or almost the same) thing. Certainly there have been many changes in the way in which academic cooperation takes place. But are we sure that advances in information and communication technologies are the main driver? I am not convinced. Maybe a more important driver is the rise of the so-called “knowledge society”, which has produced a much tighter fit between knowledge creation and wealth generation. This has encouraged nations (or groups of nations such as the European Union) to see themselves increasingly as competitors within a global knowledge economy. And it is this, maybe, that is the big difference.

2. For the moment all I want to do is to plant this thought in your minds, although I will return to it in my conclusion. In my talk today I plan to cover three topics:

   I To discuss, very briefly, the idea of globalisation – a highly complex and even contradictory phenomenon (which, as I have just hinted, I suspect is the real driver of change – not ICT and its capacity to produce “virtuality”);

   II To compare and contrast “old” and “new” paradigms of international cooperation;

   III To offer some, very tentative, conclusions about the implications of this paradigm shift (in my view, largely the result of globalisation – although I do not deny the potential of “virtuality”).

Globalisation

3. Let me start then with globalisation. It is an ugly word, but everyone uses it. The trouble is that globalisation is used by so many different people to describe so many different trends. The first, and most obvious, of these trends is the growth of an integrated world economy – which is most dramatically emphasised by global capital flows (round-the-clock and round-

the-globe financial markets). But it is also manifest in the development of a worldwide division of labour. The components of manufactured goods are produced anywhere and everywhere. While we sleep, our information is processed in some other part of the world. We have become, in Manuel Castells' phrase, a "network society". Everything, its seems, is connected to everything else. And, despite of what I said earlier, it is information and communication technology that has made this integrated world economy possible.

4. But that is not all there is to globalisation. There are two important qualifications.

   I The first is that an integrated world economy is hardly new. Since the seventeenth century, or even earlier, we have had something approaching a global economy. That is what colonies and empires were all about (and, if we are frank, many of the traditional patterns of academic cooperation were heavily influenced by these colonial and imperial frameworks). What is new is the growth of world cultures and global brands. Both are strongly influenced by the United States – which is why "business" and "media" English has become the world's *lingua franca* (neither of which bears much resemblance to the English of Shakespeare, or even the language spoken by native English speakers!);

   II The second qualification is that, despite the intensity of the new global economy, there are still parts of the world that have been left out. Much of Sub-Saharan Africa is a good example. Globalisation in this uncompromising market form is no longer balanced by the strategic considerations that were so important in the era of the Cold War (and again, if we are frank, we have to admit that these strategic, and ideological, considerations played an important role in stimulating, and shaping, academic cooperation). But all parts of the world are subject to the influence of global cultures and brands. Even the poorest, who have been marginalised by the global economy, are exposed to global culture with all its tantalising images of the "good life", of "success" and "style".

5. The global economy is, essentially, a knowledge economy – in the sense that knowledge encoded as scientific and technological data and expert skills is the primary source of wealth creation; and in the sense that "knowledge" encoded as images, styles, brands and so on is the means by which global cultures are realised and communicated. Of course, now that the so-called "info-tainment" has become so important, it may be difficult to draw a distinction between "productive" and "recreational" knowledge. Computers being used to play video games are just as important as computers being used to process research results, produce management data or control manufacturing processes. Modern society,

above all, is a communicative society – in terms of its fundamental economic structure and of its more creative and playful (even frivolous) habits.

Old and new paradigms of international cooperation

6. In the second part of my talk I want to consider what I call “old” and “new” paradigms of international cooperation. But the contrast, as I have already hinted, is not so much between “physical” and “virtual” mobility as between a set of relationships that are post-colonial or neo-imperial in their basic character – or, more broadly, are essentially determined by geopolitical considerations; and a new set of relationship that are fundamentally economic in character, in the sense that they reflect the dynamics of globalisation and of the so-called knowledge society. Embedded in these dynamics, of course, are the new information and communication technologies – and so the potential for “virtual” cooperation. But they are not necessarily the primary phenomenon.

7. Of course, this contrast between “old” and “new” paradigms is far too simple:

   I I recognise that not all aspects of international cooperation in the past were shaped by the persistence of old imperial connections, or by the rivalry of great powers (notably the rivalry of the two super powers during the cold war), or by the growing tensions between rich “North” and poor “South” (and attempts to reduce them), or by the determination to banish, for ever, the spectre of war from Europe. The “old” paradigm of international cooperation was not all about geopolitics.

   II Nor, of course, am I suggesting that globalisation is an expression of pure market forces, untainted by consideration of national power and super-power politics – or that the knowledge society is a higher form of society in which technology and democracy have been reconciled and produce a power synergy. So the “new” paradigm is not purely about economics either.

   However, I do believe the whole character of international cooperation is changing – and in ways that are illuminated by the idea of a shift from “old” to “new” paradigms.

The “old” paradigm:

8. What do I mean by the “old” paradigm? A number of different elements which I am sure you will recognise:

   I The first is (or was) the recruitment of international students, which was essentially a one-way process. Initially colonial elites came to study at universities of the imperial powers – indeed it was often by

being educated at Oxford or the Sorbonne that they became members of these elites (and a similar thing happened when students from, say, Brazil went to study at Harvard). A little later, with the onset of the cold war, the recruitment of students from Africa, Asia or Latin America became embroiled in the rivalry of the super powers and their closest allies. The ideological orientation of leaders of now independent states was heavily influenced by their higher education. More recently still, the recruitment of international students became a key element in the funding of universities (at least in some countries, including Britain). The erosion of the welfare state, and its consequences for the public funding of higher education, forced universities to behave more entrepreneurially; in a phrase, the privileged social groups in the third world picked up the bill which the taxpayers of first world nations were reluctant to continue to pay.

II The second element is/was staff mobility. Here, too, the same geopolitical influences can be seen at work. The international students who, as members of colonial (and post-colonial) elites, returned to become academic leaders in their own countries – but they retained their links with their imperial *alma maters*. Some, of course, did not return but made their careers in Paris or Cambridge (both in England and in Massachusetts). At the same time during the cold war academic exchange programmes had an avowedly strategic purpose. The rivalry of the super powers took place not only in laboratories where nuclear weapons were developed but in the cultural arena where professors were the most powerful protagonists.

III The third element of the "old" paradigm of international cooperation is, or was, closely linked to this: the development of elite exchange programmes. Nearly all of these programmes had explicitly ideological intentions. One of the most notorious, Rhodes Scholarships at Oxford (former American President, Bill Clinton, was a Rhodes Scholar), had been founded by the British imperialist Cecil Rhodes and was designed to bind together the British Empire, although other "reliable" nations were allowed to participate (Germany until 1914 and the United States). Other schemes, although less blatant about their intentions, served similar strategic purposes: Harkness Fellowships, Marshall Scholars and so on. Through them the next generations of great power elites were socialised into their future responsibilities.

IV The fourth, and final, element had more democratic intentions. In the form of "junior year abroad" programmes in American colleges and universities it was really high-quality "academic tourism". In other, more serious, forms such as the early Erasmus exchanges within Europe it was a concrete affirmation of a new set of relationships. Where once the youth of the continent had marched to war and met

each other in battle, now academic mobility served the same ends (but in much more benign ways). It was how we got to know each other; maybe Erasmus too is a higher form of tourism. At any rate its purpose was political, to give expression to the “new Europe”.

The “new” paradigm

9. The “new” paradigm of international cooperation has different elements, although it has overlaid rather than replaced the “old” paradigm I have just described (and also please bear in mind what I said about the rather artificial, and exaggerated, contrast between “old” and “new” paradigms).

    I The first element of the “new” paradigm is an intensification of international student recruitment. An intensification which reflects the competitiveness of the new global economy. And this economy, of course, increasingly trades in “knowledge” products of all kinds: know-how, patents and, of course, people. So international students are no longer simply pawns in some kind of geopolitical game for diplomatic (and military) influence; nor are they simply recruited because when they return, hopefully as satisfied customers, to their own countries and reach positions of influence they will award lucrative commercial contracts to American or French or British companies; they are now, in a real sense, a primary economic resource. This fundamental change, brought about by the emergence of a knowledge society, has led to two other changes:

        a First, it is not simply that the competition between the established players has intensified but also that new players have entered the game. International student recruitment is no longer the almost exclusive preserve of the former imperial and great powers (or of today’s only super power, the United States). Because this is an economic as much as, or more than, a geopolitical game, many more countries are keen to join in. For example, Malaysia has plans to become a net importer, rather than exporter, of international students. And it is not just new countries; it is also other kinds of organisations such as global mass-media corporations which see new synergies between their core “entertainment” and new “info-tainment” roles (including, of course, providing global academic services);

        b The second change is that new, and more flexible, forms of international student recruitment have developed, some of which do not involve “physical” recruitment at all in the sense of bringing students for extended periods to host countries. New forms are emerging, such as two-plus-two study patterns, which are based on more equal academic partnerships between institutions in sending and host nations; or in-country provision which involves the

establishment of branch campuses (sometimes encountering substantial opposition from existing universities – South Africa is a good example); or – of course – new and more powerful forms of distance education made possible by information and communication technology; or combinations of all three (The British Open University has recently establish a branch in the United States).

II The second element in the "new" paradigm of international cooperation is new patterns of staff exchange and interchange. Perhaps a better way to describe this new phenomenon is in terms of new global flows of scientific personnel (or, if you like, "knowledge" workers). Let me take the most dramatic example. Both the American higher education system and the US high-technology industry depend crucially on the import of highly skilled people, notably from the Indian subcontinent and East Asia. Globalisation has produced two forms of economic migration. The first, which grabs the headlines, is the desperate efforts of people to find work, pushed by the "modernisation" of national economies along unforgiving World Bank lines and pulled by the seductive images of the consumerist "good life" offered by the West. The second is the permanent migration of the highly educated – in which universities, of course, are deeply implicated because they act as both gatekeepers and entry points. Perhaps, in time, the pervasiveness of information and communication technology will substitute "virtual" for "physical" migration – but it has not happened yet on a significant scale. Although some software may be developed, and lots of information processing undertaken, in countries like India, the key jobs are still in the West.

III The third element in the "new" paradigm, perhaps, is an intensification of the democratic element within some forms of academic cooperation – but, paradoxically, against a background of growing inequality. Just as international travel (and tourism) were once restricted to the rich and to the elite but are now available to all, so "academic tourism" has become a mass activity – or almost so, because there is still a fairly strong correlation between the international mobility of students and their economic status. There is a group of students whose economic condition is such that they are much less likely to study abroad or take part in international exchange schemes. This is apparent even in the case of well-funded European mobility schemes. This must be cause for serious concern, because most higher education systems now accept that they have a responsibility to promote social inclusion by widening participation to economically and culturally deprived social groups. But, if we see some form of international experience as increasingly being part of the total higher education experience, it cannot be right that a significant group of students is excluded from that experience. This is typical of globalisation and the

knowledge society – for the privileged, or knowledge-rich, opportunities are almost limitless; but the knowledge-poor are worse off than before.

IV The fourth element of the "new" paradigm is the modification of what I called elite exchange programmes – Rhodes, Harkness, Marshall and the rest. The days when one amateur – or, at any rate, generalist – elite spoke to another, similar elite, are over. So too are more altruistic (but also arrogant) attempts to spread French, or British or American, culture to other parts of the world. As a result many of these programmes have been professionalised and also been much more sharply focused. Europeans who went to the United States as Harkness Fellows twenty years ago enjoyed a leisurely peregrination around America and extended exposure to American ways; their successors today, usually mid-career public-policy experts, now spend short intensive periods on highly focused programmes. Or, alternatively, these elite scholarship programmes have been reformulated as key elements within national strategies to boost their market share of the global knowledge business – not just directly in terms of old-fashioned inward recruitment of international students (and the economic benefits they bring to host nations and host institutions); but also because the world economy increasingly trades in knowledge products (as well as people).

V The fifth, and final, element in the "new" paradigm is the development of world languages – by which I do not only mean English (and global English, of course, is not really the same English as I speak and in which I think); I also mean the various products of Microsoft (and its various rivals); and I mean something more general still, the emergence of global cultures – in business, art and design, popular entertainment and so on. These cultures, of course, are hybrid in their origins. They are derived from very many elements of many indigenous cultures, but they tend to be homogenising in their effects – they are, or become, mid-Atlantic, "Western". Education, of course, is a key promoter of these world "languages" and cultures – even when deliberate efforts are being made to sustain multi-lingualism and multiculturalism. Maybe this is a key change. Once academic cooperation and student and staff exchanges were seen as a means of promoting greater knowledge (and, therefore, tolerance) of different cultures; that, I suspect, is how many of us still see and justify such activities. But today such activities may be corroding cultural differences. Certainly I think we are being naive if we imagine that students on Erasmus and now Socrates programmes are solely motivated by a desire to be more familiar with other European countries and cultures; often they are keen to take part in such programmes because they want to pursue pan-European careers in business or government.

Physicality and "virtuality"

10. In the final part of my talk I want to consider how this shift from an "old" to a "new" paradigm of academic cooperation relates to another shift from physical as opposed to "virtual" interchanges – which is the subject I have been asked to address. But, before I do so, I must apologise for offering an incomplete account of academic cooperation. I have not been able to discuss all the many strands in such cooperation – for example, cooperation between institutions which may be much more equal and even-handed than cooperation between nations (if "co-operation" is the right word to describe the massive one-way flows of students by which the rich North is exploiting the knowledge resources of the poor South); or the work of organisations dedicated to promoting academic cooperation. Nor have I really considered cooperation in research. So I accept that I have only concentrated on certain aspects of academic cooperation – and some of you may feel that these aspects are not the most important.

11. Right at the start of my talk I expressed some scepticism about whether information and communication technology – which is generally what we have in mind when "virtuality" is discussed – is really the most important driver of change in the area of academic cooperation. Of course, it is an important driver – but if it is the most important driver I rather doubt. Let me try and justify what I have just said. The first point that has to be emphasised is that "virtuality" is not new. Half a millennium ago in Europe there occurred a revolution (and rather earlier in China) which made it possible to substitute "virtual" academic and scientific encounters for actual, or physical, ones. I am referring, of course, to the invention of movable type, and the exponential proliferation of printed works. You could argue that academic cooperation has been becoming more and more "virtual" for hundreds of years. Knowledge has been progressively institutionalised, first by the church and then by schools and university, thus enabling ideas to be transmitted indirectly and at second, third, fourth-hand. Then the "virtuality" produced by institutionalisation was greatly accelerated by developments in the technology of communications – from manuscripts and printed books, to telephones and televisions, and now computers. The point I want to emphasise is very simple – we should not exaggerate the importance of developments in technology.

12. But let me be more practical – and take the impact of ICT on some of the trends I have described under the heading of a "new" paradigm in academic cooperation. Clearly ICT makes possible distance-learning which, on the face of it, means that there is less reason for students to travel from one country to another – but, at the same time, ICT also foreshortens cultural distance. Time and space are abolished and everything, but

especially the “other”, seems much “nearer”. Now there are two reactions to this intensified “nearness”. One is that, because I can access what I want through my computer or my television (and, of course, all these technologies are rapidly converging), there is no need to leave home. The second is that, precisely because it is so “near”, so “near” in fact that the very idea of the “other” is weakened, I want to be physically as well as virtually “present”; I want to be there. This raises the issues of inequality I mentioned a moment ago. There is a risk that a new division will arise between those who must be satisfied with “virtual” mobility and those who can enjoy the real thing. It can also be argued that the very pervasiveness of ICT may be rekindling the desire for the personal, the physical, the real.

13. Or take some other trends I have mentioned:

    I The trend towards shorter and more focused “episodes” of academic cooperation. Certainly the “virtual” connections created by ICT can reduce the cost of such cooperation without necessarily reducing its effectiveness;

    II The emphasis within the global economy on “knowledge” as a product. Again, if less importance is attached to understanding cultural differences (except to the limited extent such understanding is needed for business or political reasons), “virtual” technologies may be adequate to trade their “knowledge” products;

    III The growth of world “languages” – whether English, Microsoft or movie culture – means that the barriers of language, culture and custom are (apparently) reduced. So “instant” and “virtual” communication may be seen as more feasible.

Conclusions

14. My conclusions, therefore, are ambivalent and, perhaps, ambiguous:

    I First, what I called the “old” paradigm of academic cooperation is being superseded by a “new” paradigm. But this shift owes much more to the growth of a knowledge society and to globalisation, than to the potential of information and communication technology. And “virtuality” is not cause but effect;

    II Second, ICT has merely intensified “virtual” connections between people and organisations; it has not invented these connections, which have existed in less intense forms for many centuries;

    III Third, the detailed effects of ICT on particular forms of academic cooperation are not all one-way; they are not always pushing consistently in the same direction, to greater “virtuality”. There are cases where the opposite may be happening.

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The possibilities and limits of virtual mobility in international cooperation

Introduction

The last time I met with many of you was at a DAAD/IIE conference in New York in January 2000. The title of this conference was: "The internationally mobile academy". According to the various sessions and discussions, this referred (as usual) merely to the international and physical mobility of individuals. In my presentation I then emphasised that it could as well be understood as the academy, the institution itself, becoming mobile. This reading of the theme was at least as important in my eyes. Like it was introduced as the central theme of a conference organised some two years before under the title "The changing role of transnational education: moving education – not learners" (UNESCO/CEPES, 2000).

The issue of virtual mobility is now the central theme of this meeting. And the fact that the "virtual phenomenon" is phrased in terms of a "challenge" and not just as an opportunity seems justified, since it will (and already does perhaps) have an impact on the core role and activities of the national and international agencies involved in international higher education cooperation.

The unavoidable impact of the virtualisation of higher education on international cooperation and the agencies which play a role in that should be considered in the context of the following wider trends:

- The growing demand for higher education worldwide, which, especially in developing and transition countries, cannot be met by national supply. A growing gap which opens a market for transnational education;
- The development of transnational education, which is not the same as international education as we are used to define it. Transnational education is defined as higher education activities in which the learners are located in a country different from the one where the awarding institution is based. But it is not necessarily international in terms of its content or the actual learning experience;
- Virtual or transnational higher education is linked to a growing commercial interest in higher education: the "business of borderless education";
- This commercial or business interest is linked to a paradigm shift in internationalisation. Traditionally the emphasis was on cooperation. Increasingly, the competition paradigm is driving international initiatives in higher education;

- This growing international / global market for higher education goes hand in glove with the emergence of new types of providers, a growing range of stakeholders and a changing role of the government. An in many cases already deregulating government, which is now more and more often bypassed in its traditional function of steering higher education systems by international action. Moreover, these trends are threatening the monopoly of the traditional universities and thus represent a challenge for the higher education sector itself;
- Globalisation, competition and virtualisation lead to greater diversification in higher education in terms of different types of institutions and providers and the move towards more mixed-funding models (public-private). For some, this is a welcome and necessary development in order to add to the financial basis of a rapidly growing sector, which most governments cannot afford to finance from public sources only and as a way to raise quality. Others see it as a major threat to the development of national higher education systems (Lajos, 1998) and as a trend exacerbating dramatic inequalities between universities in the developed world on the one hand and in developing countries on the other (Altbach, 2001). Especially in the light of the proposals for the new negotiation round on the WTO's General Agreement on Trade in (educational) Services these concerns are growing.

These are the main challenges that the higher education sector is facing in this context and these will inevitably have consequences for agencies in the field of international cooperation, which, especially in the case of the national agencies, usually:

- Are well-embedded in the traditional relationship between the government and the higher education sector;
- Have a tradition in cooperation rather than in competition;
- and which (used to) depend to a large extend on public funding sources.

In my further analysis of these trends I will continue to use the concept of "the virtual challenge" in the larger sense, as it is defined in the conference announcement, including ICT-supported educational delivery (or e-learning) and more widely any form of cross-border educational delivery (transnational education).

A closer look at these trends: some research outcomes

It was already in 1996 that John Daniel's (Vice-Chacellor of the British Open University) often-cited book *Mega Universities and Knowledge Media* appeared, stating that in order to keep pace with the growing demand for higher education in certain regions of the world, every week one new university would needed to be established. The financial and logistical impossibility of this option became symbolic for what was called "the crisis in access to

higher education" and formed the main argument for technology-supported distance education as a cost-effective alternative.

In 1997, NUFFIC undertook a research project on *Virtual Mobility: New Technologies and the Internationalisation of Higher Education* (Van der Wende, 1998). From this study it was concluded that since the crisis surrounding access to higher education worldwide is leading to a transnational matching of supply and demand, and since highly cost-effective solutions are called for, the internationalisation of higher education and the use of new technologies become closely interrelated. This is resulting in ICT-supported transnational higher education within a highly market-driven environment. Moreover, official institutions of higher learning no longer have a monopoly on this market, and the steering and monitoring role of national governments is being eroded. This raises such issues as competitiveness, quality assurance, and consumer protection. Furthermore, the impact of ICT-supported transnational higher education on systems in developing countries must be seen as both an opportunity and a threat. The further evolution of systems in these countries may be endangered, ultimately leading to their marginalisation.

A more recent (2000) study on the phenomenon (commissioned by CVCP/HEFCE, undertaken by Robin Middlehurst) entitled *The Business of Borderless Education* provides a closer insight into these trends. It confirms that the growing demand for higher education worldwide is one of the main driving forces behind the development of borderless education. But also that it is actually not a demand for more of the same, but a demand from a new group of learners, working adults, for lifelong, relevant, "just-in-time", and flexible learning opportunities. New providers, such as corporate and for-profit institutions focus on addressing this new demand in particular. This can be seen as a valuable supplement to the existing provision, but the question is whether this type of provision will become a more preferred alternative form of higher education more generally. Furthermore, this report also points to the importance of developing adequate quality assurance and management systems and frameworks.

From US sources (Taylor, 2001) it is confirmed that the clientele for distance education consists largely of part-time students in full-time employment. And that the global competition for students focuses especially on those involved in continuing professional education and lifelong learning. This market is expected to grow substantially. The International Data Corporation expects distance education to grow by 33% each year for the next five years, with an estimated 2.2 million students in 2002. The CEO of Pearsons Media Group, a provider of e-learning programmes, estimates that this year two million people will be seeking a degree online and outside a campus (*The Economist*).

From an Australian study (Blight & West, 2000), carried out in 1999, we can learn that in the Asia-Pacific region the interest for transnational education is growing. In spite of the Asian economic crisis, the interest for Australian

higher education continued to grow in South-East Asia. More specifically, the proportion of students who took this at an off-shore campus in their own country increased (from 18% to 27% between 1996 and 1999), whereas the proportion of students who came to Australia for on-campus programmes decreased (from 76% in 1996 to 67% in 1999). In the same period, the proportion of distance education students remained more or less stable.

An IDP study on transnational education published last year (Davis et al, 2000), showed that by then already 35% of the foreign students at Australian universities studied through transnational education arrangements (at off-shore campuses), whereas the proportion of international on-campus students is still dropping. Most of such programmes concern the field of business administration and economics (51%), followed by health and science. There seem to be not so many courses in IT, which in many cases belongs to the popular subject areas for transnational education (In the US, offerings in IT are number two after courses in business administration). The use of information and communication technology in the delivery of transational education is also remarkably low. In general, Australian universities seem to operate still in a rather physical mode with respect to their overseas or transnational offerings: only two out of the 291 sample programmes are delivered fully online. Most programmes are delivered through face-to-face teaching or supported distance education (tutoring and some lectures are provided).

This is another contrast with the US situation. Data from the National Center for Education Statistics show that in the US already in 1997-1998, 60 percent of the institutions offering distance education (one-third of all 2-4 year post-secondary institutions) used the Internet as the primary mode of instructional delivery (Lewis et al, 2000). Finally, the Australian report also states that quality assurance is an important aspect of this type of educational delivery, which is also recognised to be to some extent controversial.

Back to the European scene again. How is transnational and virtual education seen in this part of the world? A first study on TNE was undertaken in 2000 (Dos Santos) and further investigations were made in the context of the Bologna process (Adam, 2001). TNE, or non-European providers entering the European market, is seen as one of the elements, or threats, which Europe is facing and which calls for increasing the international competitiveness of European higher education, which is also one of the main aims of the Bologna Declaration. The various reports are quite honest in stating that TNE can widen access to quality higher education and that its growth is often a sign that the national systems are not responding to the needs of the students. This can refer to quantitative needs, if the national higher education structure cannot cater for the national demand, or to the type of demand (diversity). Or to the need for more flexible, student-centred, or competency-based learning which is not met by the national system. The main importers of TNE in Europe are Greece, Italy and Spain. The main exporters to these

countries are the UK and the US It is also acknowledged, however, that regulation, quality assurance and recognition are the main problems related to this type of education and that concerted action is necessary in the area of quality assurance of TNE.

This plea was also made in the context of the OECD ministers' meeting in Japan in May of this year. Here, the main policy challenges for governments related to e-learning and TNE in general are also seen in the need for adequate, preferably multiple, quality assurance systems to protect consumers and their interests.

Conclusions so far

From the research reviewed so far we can conclude that:

- The growing demand for HE worldwide is driving the development of borderless or transnational education. It focuses on filling the gap where national supply does not meet national demand in quantitative terms or in terms of flexibility, type of learning approach, etc. This means that it is market-driven and private and does not benefit from public sources. Student fees are thus the main source of income. Exceptions to that, like for free online courses, will be discussed later.
- We should distinguish between different types of demand. In developing or transition countries, the demand concentrates on widening access to higher education for the traditional age group. In developed countries, related to what we call the knowledge economy or society, the demand is rather focused on more flexible types of education, which enable non-traditional target groups, such as working adults, to continue professional education and lifelong learning.
- Proportionally, the demand for in-country delivered transnational education is growing as compared to the demand for overseas study, which obviously is a more expensive option, related to the fact that transnational education is almost by definition provided by developed countries (with high costs for living) into less developed countries.
- Related to the different types of demands and related target groups, the role of technology in transnational education seems to differ. Online distance education is generally acknowledged to be more effective for adult learners, whereas young students have a stronger need for face-to-face support in their learning process. And, as we will see later, the technological possibilities (in terms of computer and Internet access) also differ with respect to the different types of countries (developing, transition, developed) in which the programmes are delivered.
- Transnational and virtual education concentrate on a limited number of subject areas, of which business education is the most important one.
- The growing market of TNE and virtual education has attracted a range of new providers leading to further diversification of the higher education landscape.

- As governments are bypassed in their steering or controlling role by the transnational and virtual character of the new provision, their main concern is quality assurance of TNE and the protection of the consumer. As we shall see later, however, this concern is in various cases mixed with protectionist behaviour favouring national providers.
- Finally, this new type of education which crosses borders in various ways is not necessarily international in terms of content or learning experience.

To put these conclusions into the perspective of international cooperation and the traditional role of exchange agencies in that, I would like to add the following. In a study on international student mobility carried out last year for the Council for Education in the Commonwealth and for the UK's Council for International Education, it was found that it was becoming more difficult for students from developing countries to get a university or college education abroad in the latter half of the 1990s. At the same time, the number of students from more developed or industrialised countries studying abroad skyrocketed, especially in Commonwealth countries such as Australia and the UK. And also that much higher tuition fees for international students than for domestic students continue to be a sore point. During a discussion on this theme in a recent international education symposium held in Halifax, one of the representatives of the developing world stated in conclusion that "Global competitiveness has been achieved at the expense of students from developing countries, ... they are falling further and further behind" (Sherwood, 2001).

Possibilities and limitations of virtual mobility

Now we come to the central theme of this paper, which will focus more specifically on the possibilities and limitations of technology-supported education, in which the use of the WWW plays a central role and which is thus often referred to as online learning or e-learning.

But especially when it comes to the issue of possibilities and limitations, much is still unknown. Many claims on possibilities are made by the advocates, or commercially interested parties, whereas many limitations or possible perverse effects are voiced by the sceptics. To put it differently, there are more views, opinions and speculations on these questions than hard-and-fast research findings. The main controversies seem to be related to the following topics:

Access and equity: The argument that virtual solutions are the only option to deliver high-quality education in developing countries is contested by those who warn about an increase of the digital divide (Gladieux & Swail, 1999). Internet access is extremely unevenly spread over countries and regions (US over 50% of households compared to only 3% in the world at large). And even as it is expected to reach 75% in all advanced countries in five years,

only then the real problem arises, because educational ability and cultural capital are extremely unequally distributed and this inequality is amplified by the Internet (Castells, 2001).

The market for higher education: Whereas some see e-learning and "webucation" as the next great growth opportunity on the market (Drucker, 2000), others consider higher education primarily as a public good and responsibility. Moreover, many questions are raised with respect to how commercial courseware can be developed and exploited in ways consistent with faculty ownership of the curriculum (intellectual property) and how universities could get into the mass market for courseware within the constraints of their own values and structures (Trow, 1997).

The functions of the university: Observations are made that three basic types of universities are emerging: "brick universities,", "click universities", and "brick and click universities", which are believed to become the most competitive and attractive institutions. Related to this is the fear that the traditional functions of the university – teaching, research, and service – could become unbundled, since teaching is the only function that is usually thought of as profitable (Levine, 2000).

Quality and quality assurance: It seems inevitable that international virtual provision will be of mixed quality. Consequently, the question is asked whether students should be protected from potentially poor-quality overseas virtual provision, or whether one should rely on the market to solve the issue (Middlehurst, 2000). Some emphasise that governments should definitely take their responsibility in quality assurance, accreditation and in consumer information and consumer protection, especially vis-à-vis programmes delivered by non-accredited institutions from abroad (Collis & van der Wende, 1999).

Cultural and pedagogical issues: While geographical barriers to access are alleviated by new information and communication technologies, other barriers to access may be newly created. International online education should not be restricted to a range of narrowly commercially motivated courses that are targeted at a global elite. And in order to be able to be attractive to students anywhere in the world, there is a need to develop pedagogy that is able to transcend geographical dispersal and cultural and linguistic barriers (Ziguras, 1999).

The possibilities and benefits of virtual options from the point of view of internationalising the curriculum

Finally, I would like to address, on the basis of my own research, what I see as the main possibilities and benefits of virtual mobility in the context of internationalised curricula and learning experiences (Van der Wende, 2000).

The introduction of information and communication technology, in particular the use of the WWW, opens numerous possibilities for internationalising higher education. These opportunities can be viewed from different perspectives (Collis, 1998).

From the *student perspective* they relate to:

- Enhancing physical mobility: improved preparation for international mobility, improved contact with the home institution while away, and improved contact between supervisors in the host and home institution;
- Enhanced access to remote learning: improved chances to participate in international learning activities, with students and teachers from foreign institutions, while staying (completely or partially) at home.

From the *staff perspective* they relate to:

- Improved opportunities for enriching teaching and mentoring impact;
- Improved opportunities for research and professional interaction with international colleagues.

From the *institutional perspective* they are linked to:

- Increased opportunities for the intake of international students and increased need to adjust services to the needs of these new cohorts;
- Increased opportunities for international consortia, networking and other collaborative initiatives;
- Reduced costs and time demands relating to international travel for academic staff;
- Increased efficiency in information dissemination, with respect to one's own institution and in information access about programmes elsewhere.

With regard to internationalising the curriculum, it seems that the main strength of ICT in this area is that it allows the richest settings for international learning to become available for all students, including those who stay at their home institution. These settings can be described as the combination of international content, taught and learned in an international classroom, bringing together staff and students from different international backgrounds, with an emphasis on interactive and collaborative learning processes, which support the acquisition of a range of skills. Moreover, it provides an unequalled richness of resources: experts, libraries, databases from around the world, which can be directly consulted and used in the learning process.

Various examples of good practice were developed in the context of European projects (e.g. the Open to Europe Project, EUROPACE 2000, etc.). Partnerships of such projects can be bilateral or multilateral, although a certain limit in the number of partners seems to favour active participation of all of them. The content of the course is jointly developed by the partner institutions and combines the areas of expertise and excellence they represent. This process obviously goes beyond the sheer putting together of existing

course modules, since coherence in educational design and theoretical concepts should be ensured. Academic contributions can be made through recorded lectures, lecture notes, presentations of case studies, simulations, interviews, background articles, etc. Students study the course from their home institution and meet with their teachers and work in a virtual and international classroom, in which they carry out collaborative work in small teams. Through this collaboration they benefit from the international context and learn about current developments, systems or approaches in different countries, as their fellow students present these to them or use collected information and data in the assignment. In the digital learning environment, links to international learning resources (experts, libraries, databases, etc.) are provided. Besides the content-related learning achievement, students develop a range of skills related to communication, teamwork, to dealing with intercultural and language-related differences, to advanced search and analysis, and to the use of ICT as such. Monitoring, tutoring and assessment can be organised in the same context.

Obviously, such initiatives can also be found outside the European context. At the same time, European projects are not necessarily limited to a European scope. Even if they focus on European themes and subjects, they may include wider international perspectives. An interesting example of this is a course on competition law of the European Union, which includes input from US competition lawyers, reflecting the EU legislation and analysing the issues and challenges in the European context and their impact on the EU-US trade relations.

Good practice requires of course a number of conditions to be fulfilled. For the use of ICT in internationalised curricula, these conditions include the success factors for joint curriculum development, such as staff commitment, solid international partnerships, high-quality educational design ensuring coherence in the curriculum, policy support and additional funding (Van der Wende, 1997). In addition, the following factors seem to be essential and specific for the use of ICT:

- The educational design should ensure consistency in the conceptual and theoretical approach presented in the course. Besides, it should ensure effective learning processes enabling interaction and collaboration.
- The expertise and skills required for this can usually only be found in a team, including subject experts, technical experts, experts on educational design, sometimes graphical designers, etc. This multidisciplinary teamwork may also require special mediators who facilitate the cooperation between the disciplines and guarantee process coordination.
- Reliable and matching technology among the partner institutions is a prime condition.
- Clear understanding between partners on costs and benefits, including investments, fee policies, intellectual property issues, etc.

Despite the significant opportunities that ICT offers by enabling access for (in principle) all students to interactive and collaborative learning in an international setting and the good practice that is demonstrated in many projects, many challenges still need to be addressed.

First, transnational education does not necessarily mean that the curriculum is internationalised (in content or form). There are certainly examples of missed opportunities in the case of transnational education programmes, which do not accommodate or address the potential benefits of an international student body due to weak or lacking possibilities for interaction and collaboration between students. Or even worse, curricula which are exported without considering the appropriateness and the relevance of the curriculum in terms of content and teaching and learning methods in the specific context of the student's country and culture. Based on what good and bad practice have shown so far, it seems justified to state that high quality transnational education is based on internationalised curricula.

Second, from the student perspective, ICT improves opportunities to participate in courses from different institutions in different countries. In principle, students have a free choice to integrate courses from foreign institutions into their curriculum, or even to compose the entire curriculum in this way, as a sort of a virtual version of the medieval "wanderstudent". This freedom, however, is not systematically supported by recognition mechanisms or credit transfer and accumulation systems, which could make these virtual courses account towards a degree. Consequently, it will be important to facilitate this type of virtual mobility in the same way as physical mobility schemes (e.g. Socrates) provide support to students in terms of recognition of courses taken abroad. Initiatives in this direction are being developed in international networks and consortia of institutions, but basically, and similar to the world of physical mobility, the free mobility of students (outside institutional partnerships or networks) should be encouraged as well. Obviously, it is up to the degree-granting institution to assess the quality of courses taken from foreign institutions through ICT, and to ensure the coherence of a curriculum to lead to a degree. Hence, instead of continuing discussions based on the fear that virtual mobility will substitute physical mobility, it will be important to recognise virtual mobility as a serious and modern form of academic mobility and to enable curriculum integration by adequate credit transfer and recognition measures.

Lastly, from the teacher perspective, there are clear limitations. In order to be effective and to reach the quality objectives of the virtual international classroom, the interaction between students and between students and teachers is key. However, experiences show that this implies that the size of a student group or virtual classroom cannot be too large. In general it would not exceed the size of a physical class in which quality teaching and interaction can take place, i.e. between 15 and 20 students. Consequently, the idea that

virtual courses can be up-scaled without limitation, cannot be confirmed when a quality perspective on the interactive and international dimension is taken. Obviously, this implies that the often-claimed cost-effectiveness of virtual education is not automatic.

Conclusions: implications for agencies active in international cooperation

It seems that the demand for overseas study is growing proportionally less faster than the demand for in-country delivered transnational education. The latter is cheaper than study abroad and, especially in cases of online a-synchronous technology support, it is more flexible than traditional education. This does not imply, however, that the demand for study abroad is not growing in terms of real numbers, which means that the support of physical mobility and exchange, and the role of the agencies in that, is not under threat as such. Moreover, the strong increase in online transnational provision for lifelong learning does not affect the traditional business of the agencies so much. Adult working students are not their prime target group anyway and will not become one because of obvious mobility limitations (families, jobs, etc.).

However, the new types of transnational and virtual education and also the strong economic rationale behind the recruitment of foreign students turn mobility, be it virtual or physical, more and more into a business. The internationalisation paradigm is shifting from cooperation to competition. This is illustrated by the growth in fee-paying overseas students versus the narrowing access for students with low purchasing power from the South. This confronts the agencies with questions on their role and mission. Especially those involved in both development cooperation and international student recruitment have to address the balance and possible tensions between these various roles. The main challenge is how they can contribute to the economic objectives of their own country and higher education system on the one hand and to their social role of widening access for non-elite groups on the other.

The economic and business rationales also imply that a new range of actors and stakeholders become involved. Which raises questions with respect to the strategic partnerships of the agencies. Furthermore, the changing role of the government and the increasing competition, also for the agencies themselves, forces them to consider the diversification of their funding basis.

As has become clear from the research and all the issues and views that we discussed, the recognition and quality assurance of the new forms of transnational and virtual education are a main problem and concern. The agencies, especially those who have the role of a NARIC/ENIC are called on (by various international organisations and platforms) to contribute to the solving of this problem especially through cooperation with agencies for quality assurance and, in the case of Europe, with their European body ENQA. In this

way, the agencies could play an important role in the area of consumer information and protection.

And last but not least, all these virtual developments necessitate the agencies to develop substantial competence and expertise on ICT in higher education within their own organisation!

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A public policy approach to international mobility

When I called a meeting at DAAD in order to prepare my contribution to this conference, one of my colleagues wondered why we should bother about a "virtual challenge" as long as there were enough real challenges around. Marijk van der Wende seemed to confirm that point of view when she said yesterday that the new trends "do not seem to threaten our traditional business".

The new media may not threaten the business of academic mobility agencies at this point, but they are going to change it. The purpose of this paper is thus to draw some lessons from what we have heard these two days, from the point of view of an organisation the main function of which is to implement a number of public policies.

As in most European countries, the public policy approach of our organisation reflects the fact that institutions are mainly funded by governments in order to provide higher education as a public service. The notion of education as a public service refers, of course, to national students in the first place, but there is a strong tradition and a wide-spread feeling that the same level of service should be offered, as far as possible, to those who need it worldwide, and particularly so in the developing countries.

In such a setting, however, institutions have little, or indeed no, *financial* interest in the provision of education, virtual or real, to international students. There are, of course, other, non-material, reasons to attract students and scholars from abroad: the educational and academic benefit of having brilliant people at one's own institution is obvious. One important function of organisations such as our own is to enable and encourage institutions to do things that they might not be able, or indeed interested, to do for lack of financial means.

What are then the policy objectives that governments want to implement through organisations like DAAD? Let me point very briefly at some fields of public policy that are relevant to our work and that convince parliament and various government departments to fund our programmes.

Foreign cultural policy aims at bringing the future elites of foreign countries in early and lasting contact with Germany. We expect that study and research in Germany will help our foreign guests to understand, and hopefully like, us better and convey at the same time a better understanding of foreign cultures to both academics and the general public. Another objective is to sup-

port the learning, and use, of German as a second or third language in foreign countries.

In the framework of *educational policy*, international academic cooperation should help young Germans acquire a knowledge of foreign countries and prepare them for work, and life, in a multi-cultural context. A more recent objective, now figuring very high on the political agenda, is to maintain the competitiveness of German higher education on international educational markets. The number and performance of foreign students is now also being seen as a benchmark for the quality of the education that we offer to students, national and international alike.

In *development cooperation*, academic programmes aim at the transfer of knowledge that is urgently needed in developing countries and at the development of self-sustained systems of higher learning and research there.

In the year 2000, the German taxpayer, through DAAD, spent approximately 185 million Euro to implement policy objectives like that. The Foreign Office contributed 109 million (59 per cent) to our budget for foreign cultural policy and the Ministry of Education and Research 54 million (29 per cent) for the internationalisation of German higher education, including study and research of German nationals abroad. The Ministry for Development Cooperation gave 19 million (10 per cent) for the transfer of higher learning to, and the development of higher education systems in, developing countries. The EU and other donors accounted for another 34 million.

Most of the policy objectives cited above have traditionally been achieved through physical mobility. Individuals, of course, do not move in order to do German foreign policy a favor, but for their own personal and academic benefit, mainly, because the knowledge they seek or the research facilities they need are not available in their own countries.

That may change with the development of virtual education if, and when, the same educational, research and cultural resources would be made available on the screen of your computer at home. *The traditional vectors of the public policy approach to international mobility might thus be undermined by virtual education to the extent that it replaces, and not only complements, physical mobility*. We might find it harder to convince individuals to move, and governments to fund physical mobility, if the additional benefit was too small in comparison to logging in at a virtual university.

That is, however, far from sure. To the contrary, new communication technologies may even encourage more, if not longer, mobility and open up new target groups for international education that we would not have been able to reach by traditional means.

If virtual education will not replace physical mobility, its development is rapidly changing the framework we work in. We will have to adapt to the new con-

ditions and use them to implement the same policy objectives as ever in a more efficient way.

Let me share with you a few reflections on what current developments might mean to an organisation such as my own:

First: At least in the next few years, virtual education will complement, rather than substitute, the classroom experience, and, thus, physical mobility. It may help to make physical mobility more efficient. For example, new technologies should be used to facilitate language learning before moving to another country. Electronic communication helps to effectively prepare a period of study or research abroad. Keeping in touch after returning back home is now easier, and institutions use their homepages and bulletin boards to that purpose.

Second: Personal contact and physical mobility will remain essential for a wide range of purposes: it is difficult to imagine that physicists and biologists would experiment only virtually, nor can the discourse of philosophers and social scientists wholly rely on e-mail. But the time needed and the place most appropriate for personal contact may change: such contact will tend to be shorter and it will more frequently take place in the "customer's" home country rather than in the country that provides the educational resources. Local support units for distance learning and short compact seminars will thus probably be a major field of activity in years to come.

Third: Virtual education will open up international educational resources to new target groups. It will thus accelerate social developments that are under way anyhow, such as a greater variety in educational biographies and the trend to lifelong learning. People will return to educational institutions after a number of years spent in their professions more easily if they need not move to a university town and change completely their social environment. At present, most international grant programmes target very specific groups in standard biographical situations, e.g. doctoral students in their late twenties. We shall need to reshape our programmes to cope with new audiences that we would not have been able to reach with traditional methods of teaching and learning.

Fourth: As in the past, the political and cultural side-effects of learning in an international context will depend first and foremost upon the quality of the opportunities offered. Whilst not every personal contact leads to lasting friendship (many leaders of fundamentalist movements have been educated in Western Europe or spent long periods of time here), excellent and accessible virtual education may be a decisive factor for the global image a country (or a continent) wants to project of itself.

Fifth: It remains an open question, however, whether virtual education allows for the variety of learning cultures that traditional institutions have provided. Is it feasible to transform the intense personal contact of an English universi-

ty into an electronic tutorial or the early access to research that has always been typical for German universities into a *Hauptseminar* on the Internet? Or will the use of the new media lead instead to a kind of educational uniformity? In my impression, the Internet is so far much more of a sixth continent than the projection of any single culture, including the American one.

Sixth: Virtual education may offer, on the other hand, more opportunities for the adaptation of courses to different social, cultural, and linguistic environments than we could ever provide for foreign students coming physically to one of our universities. It is probable easier and less expensive to adapt a *virtual* course in economics to the specific needs and backgrounds of students from developing and transitional countries than to develop such a course at any one, much less all, of our existing universities.

Seventh: Public agencies such as ourselves will have a role in helping institutions to develop a meaningful combination of distance education and personal contact for a global audience and to adapt courses and material to different contexts. Our help will often be needed for the provision of personal contact with European teachers overseas as well as for the organisation and funding of shorter periods of training in Europe. All these activities will require public funding in much the same way, and for similar target groups, as has physical mobility in the past.

Virtual education will challenge some of the traditional means we have used to implement public policy in international academic cooperation. But it also provides us with new instruments to make the exchange of staff and students more efficient. And it could give new audiences wider access to the academic, personal and cultural benefit of international education.

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Virtual mobility and Australia's market-driven approach

In this presentation, I want to look at where virtual mobility sits in the Australian context of international education, which has been described on the programme of this conference as the "market-driven approach". I think Australia's take-up of offshore or transnational education and online delivery is to a large extent a response to the market – but I do not agree that the total approach of Australia to international education has been, or is, market-driven.

Let me set the Australian context for international student mobility – then focus on the "offshore delivery" phenomenon before outlining some of the activities and research initiatives on online delivery – and pose the question as to the benefits of online or virtual delivery?

The Australian context for international mobility

Australia has always needed to use different modes of delivery of education. It is a vast country, just about the same size geographically as the US, but with a small population of fewer than 20 million people. Australian educators at all levels have a history and culture of using the "school of the air" (using broadcasts) and correspondence courses (sent by mail) for delivery. Some universities have been established in Australia with specific missions involving distance education. Issues of access and equity, rather than the market, have tended to drive these different delivery modes.

Australia is a country which has always been open to international influences. The openness is wide-ranging and philosophical, manifesting itself in areas as diverse as Australia's development assistance to its region, its push for free trade and its immigration programme – and multicultural society. Humanitarian issues, rather than the market, have driven Australia to take in proportionally very high numbers of the world's refugees.

Education makes up a substantial component of Australia's development assistance to its region. For the last 50 years, Australia has sponsored overseas students for study in Australia and for the last 30 years, it has provided technical assistance through cooperative programmes of institutional development to universities in Asia and the Pacific. Development assistance issues, rather than the market, have driven Australia to educate at its cost something in excess of 50,000 students from Asia and the Pacific under what we used to call the Colombo Plan.

In 1985, however, the Australian government did recognise that education had the potential to be a significant export industry, and Australia moved

from aid in education to trade in education; and to a new policy of internationalisation from 1992 on, away from concentration on exporting student places to a recognition of the wider activities involved in international education and the wider benefits which flow from seeking to internationalise our education systems.

Nevertheless, Australia has made a commercial success of exporting education. We claim with some pride that education is now Australia's eighth largest export, bigger than wool. It is this commercial success that gives us our reputation as being market-driven. In 2001, there are over 126,000 international students studying at Australian higher education institutions in Australia, 16% of our total higher education population.

International students have been the "driver" of Australian internationalisation of higher education – and have contributed significantly to the changes in our curriculum.

Transnational/Offshore/Online

New modes of delivery – at offshore campuses, whether teaching done by Australian faculty or by local staff, through distance education sometimes supported by online delivery, and by exclusive online provision – have grown strongly in Australia over the past decade but particularly in the last four or five years. As a result, Australia today has more than 45,000 international students enrolled in its universities who study in another country, particularly in Malaysia, Singapore and China. This development has, I believe, been largely a response to the market. The following factors have beeen decisive in this:

- Home country governments and students looking for in-country options following the economic crisis – and in some cases for political reasons;
- New private institutions looking for articulation programmes in which students did part of their degree at home;
- Students wanting accelerated programmes which allowed them to remain in jobs in-country;
- Non-English-speaking students (particularly in China) were a big market which did not have easy access to Australia (visa barriers);
- Australian institutions were familiar with the Asian markets and with potential partner institutions.

IDP's study of Australian institutions' offshore delivery developed a model which predicted that there would be a growth in online delivery (removing the necessity for face-to-face teaching provided by Australian faculty).

Online activities and research

Most Australian institutions now offer courses online for either domestic or international students. There is an increased number of courses delivered exclusively online to international students well in excess of 100, with the

University of Southern Queensland, for example, offering 37. There are also university consortia (often of international composition) which have developed to focus on online delivery. Examples are Universitas 21 and Thomson Learning or the Global Alliance Network.

Some research findings

Glen Postle, University of Southern Queensland/ Flexible Learning Models (not yet published)

Fourth and fifth generation models of flexible learning through distance education and associated delivery technologies.

The fourth generation – The Flexible Learning Model – involves interactive multimedia online, internet-based access to WWW resources and computer-mediated communication.

The fifth generation – The Intelligent Flexible Learning Model – adds automated response systems and campus portal access to institutional processes and resources.

Critically, the university assesses the fifth generation model as having institutional variable costs approaching zero.

But, in this unpublished work, the university already is expressing concerns about access and equity issues.

“The Rolls Royce of educational delivery is possible with online education, but only if the students have their own Rolls Royce garaged in the computer room. For students from equity backgrounds that are fortunate to have access to computing facilities, we are not talking about Rolls Royce delivery but minimum standards of delivery.

The University believes that its move to online delivery better enables the University to respond to issues about how different generations of distance education can support the needs of non-traditional students. Running counter to this is the equity constraint of access to the technology that can deliver that pedagogy.”

Shirley Alexander, University Technology Sydney
infrastructure; systems approach to online delivery; appropriateness of online to subject matter and type of student (practical material good on the web; not appropriate for inexperienced students).

Dale Spender
Critically questions whether universities will play any part in the expanding learning/earning business – e-learning:

Universities have:

- The wrong definition of students;

- The wrong organisation of information;
- The wrong packaging of information;
- The wrong notion of service;
- The wrong notion of standards;
- The wrong medium.

Spender, D., The Business of Learning
presented at the Australian Institute of Management in Sydney on 21 March 2001

IDP Study in Progress
Quality; infrastructure; marketing; business models; financial considerations; student performance and outcomes. Scope of online delivery offered by Australian institutions (to be published October 2001 as research report on online delivery).

Impacts on International Mobility
New technologies – impact for non-mobile student – diversity, flexibility, internationalised curricula.

For students:
- access/flexibility: time and place?
- diversity?
- rich learning resources?
- internationalised curricula?
- international linkages?

For institutions:
- cost/benefits? intensive resources?
- improved courses/delivery options for home students?
- global reach?
- new types of students? courses? lifelong learning?
- survival?
- Renewed/dynamic institutions?

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Virtual education and physical mobility: The Asia-Pacific experience

Before I start, I would like to express to ACA and SIU my heartfelt appreciation and gratitude for the kind invitation to be a presenter at this distinguished conference.

Definitions

In this paper, the term "virtual educational institutions" refers to two types of institutions. First, those which are fully internet-based, i.e. which use the Internet for the whole cycle of instruction, from registration of students and course delivery, through to evaluation and certification. Second, institutions which operate in a dual or combined-mode system, where the virtual part is either a complement (mandatory) or a supplement (not compulsory). It also includes those institutions using multimedia and other communication means in distance/borderless education delivery.

The definition of "Asia-Pacific" follows the geographical delineation of UNESCO and therefore includes Iran, the Eastern parts of the former Soviet Union, the countries of the Indian subcontinent (India, Pakistan, Bangladesh, Nepal, Bhutan), the countries of East Asia (China, Japan, Korea) and of South-East Asia (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam), as well as Australia, New Zealand and the Pacific Islands.

Features of Asia-Pacific and their implications in virtual education and physical mobility

If there is one word that adequately describes the region, it is "diversity". The region consists of massive landmasses, mountain ranges, flat territory, deserts, forests, archipels, volcanoes ("ring of fire"), typhoon belts, and modern cities. This diverse topography makes it difficult to "wire" the region. In many rural areas, there are still problems of access to telephone lines, and there are no decent means of transportation. Thus, physical mobility may be difficult even within one and the same country, and much more so between countries.

There is also great heterogeneity in racial origins of the people and hence an equally variable culture, value system, way of life and languages. Although

there seems to be a unanimous acknowledgement of the value of education in improving the quality of life, there is still a preference for males to be educated first, and the older child getting priority over the younger ones.

There are hundreds of languages and dialects in the region. English is therefore the only common foreign language used, but at different levels of competency.

The region has been colonised by many European powers and by the United States of America. Thus, there are still remnants of this colonisation to be found in the education systems of most of the countries. For example, the dominance of private education institutions in the Philippines can be traced to the pioneering work of Spanish religious orders who educated the native population, while the Indian continent and Malaysia as well as Brunei follow the British system.

Due to varying degrees of socio-economic development of the nations in the region (agriculture-based, semi-industrialised and highly industrialised societies; megalopolises, impoverished rural areas and urban slums), there are also varying degrees of sophistication of educational facilities and of attainment of basic education for all. In many cases, only a small number of those who started the elementary grades can proceed to the university. Many of the higher education institutions are state-owned. The other extreme, already mentioned earlier, is the case of the Philippines, where 85% of all education institutions are privately owned. Parallel to these differences in ownership and control, there is of course also no single policy for the use of modern technology, such as the Internet, in teaching. Availability of and access to even basic communication systems (such as telephone lines) is also not the same everywhere; some rural areas do not even have a dependable supply of electricity.

The region is also characterised by varying degrees of political stability. In some countries, the budgetary allocations for defence are higher than those for education.

Obviously, all of these conditions contribute to very varying degrees in the provision of virtual education.

Virtual education in the region

Indian Subcontinent

Hardware: On the Indian continent, as well as in Japan, China, Singapore and to some limited extent in Malaysia and Thailand, there are a number of large computer corporations which provide PCs and the various accessories required.

Even if the sale of PCs is on the rise and the number of telephone lines is increasing, the proportion of users is still relatively small compared to the

large population. The cost of a PC is still prohibitive for an ordinary worker's family. For example, a PC costs about 70,000 Rupiah and a telephone line costs about 10,000 Rupiah a year, while the average income is only 6,000 Rupiah.

Software: India is the dominant producer and exporter of software in the region. Bangalore is the "Silicon Valley" of India. India's relatively advanced position is due to a good competency in English, mathematics and computer science, as well as to a large talent pool.

IT institutions: The Indian Institute of Technology (IIT) is a consortium of six autonomous universities in India, which "produces" about 300 IT majors per year. However, 90% of those migrate to other countries, and the rest are absorbed immediately by local industry. Very few remain to initiate work on IT applications in other fields, such as education. Universities usually cannot afford the salaries and perks offered by private companies.

Because of a scarcity of trained personnel, the use of computers in schools and even in universities is still relatively low. Computers are usually used in computer and IT education only, but not in other disciplines. Use of computers at home is also still low when compared to the totality of potential users.

Internet access: There is a great variation in the extent of access to the Internet. It is a government monopoly in India. Good quality access is available only in capital cities. There is still the problem of limited bandwidth and bad connections between telephones and PCs.

Multimedia: The use of radio, TV and also of printed material is very popular and effective. They therefore have a high potential for use in education and information dissemination. However, literacy levels remain low in the whole country.

East and South-East Asia

Cyber populations: According to one statistical source, 150 million people are connected to the Internet worldwide. 23.9 million, or 16%, of these, are from Asia, and 60% of those from Japan. It is expected that this number will rise, though. However, even if Japan has the highest number of users in the region, the Japanese are not the top users in the particular field of education. This may be partly explained with a conservatism of the education system, and also with problems with the mastery of the English language. The number of education-specific users of the Internet in Malaysia and Singapore is higher, which can be explained by their superior knowledge of the English language. It appears anyway that the degree of the use of the Internet for educational purposes is closely linked to a good English language competency. China and Japan still have some problems in standardising their characters in the computer. Other Asian languages are hardly used.

Competition with foreign universities: Some local universities partner with foreign universities, especially from neighbouring countries such as Australia and New Zealand, for the provision of virtual or dual-mode education. In some cases, the foreign universities compete with local ones and are by-passing local education regulations.

Regional efforts at collaboration: A number of regional organisations have formed consortia of various kinds, which provide virtual courses or dual-mode education. The South-East Asian Ministers of Education Organisation (SAMEO), which runs several training centres, is now developing modules for online delivery. There is a move to create an Asian Virtual University for Science and Technology (AVUST) under the sponsorship of ASEAN and UNESCO. A feasibility study is underway to assess the practicality of establishing a virtual university for the greater Mekong subregion. The Association of Universities of Asia and the Pacific (AUAP) runs a network project called APDMEN (Asia Pacific Distance and Multimedia Education Network). The participating universities share some modules and jointly undertake personnel training measures in the use of ICT for teaching and learning.

Cyber Courses: Some universities in China (including Hongkong and Macau), Singapore, Thailand and Malaysia offer courses via the web. For example, Tianjin University of Technology offers nine courses. Japan prefers the use of satellites for educational broadcasting.

Korea is probably most advanced in the application of ICT in education. Its ministry of education developed a strategic plan (1997-2002) on the use of ICT in education. It equips many classrooms with multimedia network systems and provides computers to teachers. It also supports the development of software and databases. Multimedia has been gradually introduced since 1997 even in primary and secondary schools. The Korea National Open University, which was established in 1972, is the only distance teaching university offering bachelor degrees for adults using multimedia, video conferencing and the Internet together with face-to-face tuition. The Virtual University trial Project (1998) consisted of eight conventional universities and the Korea National Open University offering 80 web-based virtual courses for undergraduates and professionals. There is also cooperation between universities and media corporations in establishing a future virtual university called the Open Cyber University.

In South-East Asia, Malaysia has a private university, the Universiti Tun Abdul Razak (UNITAR, established 1999), with internet-based support for home study and face-to-face support through nation-wide training centres. Located in Cyberjaya, within Malaysia's multimedia super corridor, it offers both degree and sub-degree courses in business and ICT-related courses.

Singapore is the most advanced among ASEAN nations in the use of ICT for education. Having the advantage of being small and relatively rich, it has

many PC owners and generally a good level of English language competence. There is one single resource for Singapore's coordinated approach to integrating new communication technologies into education: a nation-wide broadband network that delivers interactive multimedia applications and services to everyone in Singapore. In 1991, the Singapore Polytechnic was established. It offers 51 modules in engineering, IT and business.

In Thailand, the biggest provider of distance education is the Suhkotai Thammathirat Open University. Its internet-based provision is limited, however, with the majority of courses using some other form of multimedia. Suranee University of Technology, the first autonomous public university in Thailand, is a dual-mode institution, which will be offering borderless programmes in nearby provinces in the near future. The National Technological University uses multimedia and satellite broadcasting materials developed by partner institutions in the United States in the fields of engineering, business and management.

In the Philippines, only the University of the Philippines has a separate "open university programme". However, it predominantly still uses traditional media, with only some models being under preparation now. Many private universities in the capital city have IT facilities and supplement face-to-face delivery with internet-based tuition. There are many private IT schools, but the quality of their programmes has not been properly assessed.

Australia, New Zealand and South Pacific

Since Australia and New Zealand will be dealt with separately in this conference, I restrict myself to the South Pacific Islands.

The most significant provider of distance and virtual education in the Pacific Islands is the extension unit of the University of the South Pacific in Suva, Fiji. A satellite and high-frequency radio system connects the five centres on different islands, with supplementary use of the Internet.

The Pacific Islands region has to deal with the problem of four time zones, which are spread over the international dateline. Generally, the use of modern technology is very limited.

Limitations of virtual education

Many countries in the region, especially such with large rural areas, cannot afford the high start-up cost for both hardware and software. This is considered to be a considerable social problem, since it creates and widens the digital divide between the "haves" and the "have nots". The rate of obsolence of both hardware and software is high, and it is all but easy to keep up with the technological development.

In many places, the communication (telephone) facilities are still limited, and some areas do not even have a reliable supply of electricity.

Academic staff are not everywhere sufficiently technology-literate. Students are also often hesitant to undertake independent study. They lack the enhanced self-discipline and responsibility required in virtual learning. Their preference is clearly for face-to-face learning.

Among students, parents and employers, the perception is still prevalent that the quality of graduates from virtual universities is inferior. It is also felt that the perceived lack of interaction between students and faculty in this type of education results in a deficit in social skills.

The resistance to change is still strong, which manifests itself by the clinging of many to the old educational philosophy, with its structured and directed learning. “Brick-and-mortar” universities tend not to recognise credits earned by virtual study.

Students tend to be overwhelmed by the information available on the Internet. They still need very strong guidance to identify useful information and apply it to the solution of problems.

Overall, the advantages of borderless learning, in the sense that learning can take place independent of time and space and is therefore learner-centred, have not been perceived yet. There is no recognition of the possibility of customisation to the needs, capabilities and interests of the student.

It may still take some time before virtual education will take firm roots. The first stage is likely to be a combined mode of delivery rather than a full substitute of traditional face-to-face methods by fully-fledged virtual learning.

Physical mobility

Most mobility in the region takes place in the form of bilateral university exchanges, based on partnership agreements. The only scheme promoting mobility on a larger scale, and on a multilateral basis, is UMAP, the “University Mobility in Asia and the Pacific” programme. Membership in UMAP is open to higher education institutions and consortia of such, not to individuals. At present, 27 organisations and institutions take part.

The principles of UMAP student exchange are the following: students on UMAP must undertake formal study at the host institution, of a minimum of one and a maximum of two semesters; tuition fees are waived; credits earned at the foreign university are accepted by the home university; the exchange is open to both undergraduate and graduate students.

The programme is organised through a central secretariat at the University of Tokyo, and the international relations offices of the participating institutions. Each institution pays a membership fee to the secretariat.

Conclusion

Virtual education and academic mobility in the Asia-pacific region are in their early developmental stages, with different levels of development in line with the socio-economic, political and technological development stage reached by individual countries. The realistic option for the near future is that virtual education can complement, but not substitute, the face-to-face mode of delivery. The social aspects of “real” person-to-person interaction are deemed as very important for the complete development of the student.

One of the strategies to speed up the use of IT in education is through networking, i.e. the creation of working groups which share resources, expertise and technology. This way, the digital divide between the “haves” and the “have nots” can hopefully be reduced.

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Virtual and physical mobility: A view from the US

What follows are some preliminary thoughts from an American perspective on the challenges and opportunities for international cooperation posed by e-learning, distance learning, remote education, off-site learning, or whatever we decide to call this process by which someone learns electronically, outside a traditional classroom setting. From the US perspective, the good news is that while virtual mobility is rapidly expanding, so is physical mobility. The data that IIE collects annually and publishes in *Open Doors* (with support from the US State Department) offers clear evidence of this expansion, at least in terms of student flows to and from the United States. A quick review of this data seems to suggest that we are not talking about a trade-off between physical and virtual mobility, but more likely a rapid and steady growth in both in the years ahead.

Last year, US campuses hosted just over half a million international students, and at least another 74,000 international scholars (not including the many more based at research institutions or hospitals). After several years of minimal growth, the number of international students rose by 34,000 students, or almost 5% increase, which is a slower growth rate than many other host countries, but still a very large absolute number, and many of them headed for US community colleges, which is the fastest growing sector in terms of hosting international students in US higher education. Community colleges' international enrolments have grown 40% since 1993, vs. a 15% growth rate for the rest of the higher education sector over the same period. Many of the international students who came to community colleges were "adult learners", often sponsored by companies or governments, who are also seen as promising targets for distance learning programmes.

There is no reliable way to predict whether these numbers will continue to climb at the same or higher rates. Some of you may recall the confident predictions in the 1970s, that within a decade American campuses would host over one million international students. In the 1970s Iran topped the list of sending countries, and it would be almost a decade before China would be sending any students our way. Today, China is America's largest source of international students (with 54,000 enrolled on US campuses last year), and Iran has less than 2,000 students on US campuses. With the exception of the Southeast Asian countries whose economies are still recovering from the monetary crises of recent years, flows from the top 15 sending countries have risen fairly steadily, with numbers of students from India increasing 13% last year, and students from Mexico up 10%.

Student flows from Europe have experienced ups and downs, given the major changes in academic mobility within the EU, and growing numbers of students from Eastern and Central Europe have tended to compensate for ebbs in Western European flows to the US But flows from Western Europe are also rising again, and overall numbers from Europe have remained fairly constant, with Germany and the UK remaining among the top 15 sending countries to the US. While it would be foolhardy to predict, I am willing to guess that numbers of international students in the US will continue to rise, barring major economic or political crises in key sending countries or serious missteps by the US government which would make US study much more expensive or harder to access.

In terms of flows from the U.S. to other countries, close to 130,000 U.S. students received US credit for study abroad according to the latest *Open Doors*, a number which is rising at a rate of 15% a year but still has a long way to go before any of us is satisfied. Europe remains by far the largest receiving continent, with the UK by far the largest receiving country (at 27,720) – primarily because American students optimistically believe that they speak the same language as their British hosts. English language programmes in other countries also attracted large and growing numbers of students to the Netherlands (up 34%), Australia (up 23%), and Ireland (22%). We also see steady rates of increase for students heading to Spain (up 18%), Italy (up 11%), France (up 7%), and Germany (up 9%). Numbers to non-traditional destinations such as Latin America, the Mideast, and Asia also continue to rise, with Costa Rica and Israel now among the top ten hosting countries, closely followed by China and Japan. The steady broadening of destinations, and fields of study, auger well for the likely continued upward trend in numbers of US students abroad. The bad news is that as the numbers increase, the average length of overseas sojourn declines, with almost half participating in programmes of only eight weeks in length, and most of the rest in semester long programmes. Less than 10% study abroad for a full academic year.

Since its founding in 1919, IIE's mission has been the promotion and facilitation of academic mobility. In the 1920s, as America began to close its doors to new immigrants, IIE's founders designed and successfully lobbied for a new category of non-immigrant student visa, to insure that academic mobility could continue. We continue to fight for that principle today, and have opposed legislation that would impede those flows with unnecessarily regulatory or financial hurdles. For over 50 years, we have administered the Fulbright fellowships in cooperation with the US Government, as well as other scholarship programmes for foundations, corporations, and governments outside the US Recent legislation created a new fellowship programme, aimed at helping financially needy American students study abroad (called the Gilman Scholarships) which the State Department has selected IIE to administer, and which provides a $ 5000 scholarship to supplement selected

students' existing federal financial aid. Another major new initiative which will stimulate worldwide international academic mobility is the Ford Foundation's International Fellowship Program, through which developing country students from "under-represented groups", who have been systematically denied access to graduate education at home, can receive graduate fellowships for study anywhere in the world. IIE will be assisting the Ford Foundation in the implementation of the programme, along with locally-based NGOs around the world.

IIE has also been a leading source of information and data on study abroad. Our annual directories and IIEPassport website are heavily used by study abroad offices and offer students the widest range of information on study abroad options. IIE surveys like *Open Doors* help policy makers monitor trends and consider options. Putting our study abroad directories online was of course a high priority for IIE, and our IIEPassport website was recently selected by Forbes Business Magazine as its Spring 2001 study abroad website pick. But the reality is that non-profit agencies like ours are hard-pressed to keep up with the "dotcoms" in terms of technology or financing strategies for web-based products, and we have therefore recently made an alliance with a well-respected for-profit called EDU.com, to insure that the IIEPassport site remains financially viable and technically at the cutting edge. Increasingly, I believe that IIE and many of our colleagues in this room will be expanding our use of the web for information dissemination, because it is a cheaper, faster, and better way to provide such information to our core constituencies. Beginning last year, we put the entire *Open Doors* publication online (plus a lot of data which never made it into the print edition), allowing us to print a much slimmer and cheaper volume. The online version is also available months earlier than the final hard copy; its URL is www.opendoors-web.org

Despite our growing dexterity with online information dissemination, we and other exchange organisations have been a lot slower to use the web for "exchanges" or to fully embrace the concept of virtual mobility. We are taking baby steps: developing electronic applications for almost all our major exchange programmes, but still need to retain paper format for those who cannot connect to the Internet. Video-conferencing and web-based orientation materials help to improve the pre-departure preparatory experience, just as "virtual" reunions maintain linkages once they have been established during the exchange programme. The Council for International Exchange of Scholars (that part of IIE which manages the Fulbright Faculty Program) recently organised in collaboration with the Hong Kong America Center a "virtual" conference using DVC technology, so that Fulbright lecturers in Japan, Hong Kong, and Taiwan could compare their experiences and learn from each other and from colleagues elsewhere how to improve their effectiveness in teaching in an Asian context. Last year, the Fulbright Program mounted a live webcast conference based in Taiwan, but with participants

across Asia and the US, to discuss teaching of American studies in Asia. The conference included bulletin boards and threaded discussion groups, and remains posted on CIES's website. We are experimenting with a number of other uses, including online delivery of some of our more technical training courses (in energy and the environment), and the linking of students in classrooms around the world with peers in similar fields in the US.

But down deep, we remain convinced that IIE's mission of "opening minds to the world" cannot be accomplished without physical immersion in another culture, that painful but educational process of being an "outsider" and realising that one's own perspective is merely one of many ways of seeing and behaving in the world. Travelling through cyberspace is no substitute for travelling across real space and becoming "a foreigner" – which my dictionary reminds me means being "out of doors". IIE's president, Allan Goodman, has committed our organisation to helping double the number of U.S. students going abroad within five years. Among other IIE initiatives to support that goal, he has contacted the Presidents and Chancellors of each U.S. college and university, urging them to require incoming freshmen to bring a passport to campus, just as they currently require freshmen to bring a computer to campus, as a key tool for academic and professional success.

As committed as we are to physical mobility, we are also realists, and acknowledge that the majority of American students will never travel abroad during their academic career or perhaps during their whole life. Within the European Union, the chances are much higher for the average student to study outside his or her country, but in the developing world, this opportunity will likely remain a rarity and a huge privilege. Allan Goodman recently offered the following statistical metaphor to a graduating class of U.S. students:
Imagine the world represented by a village of 100 people, sharing the statistical characteristics of today's much larger global village. 80 of those people live on the poor side of town, 70 have no access to safe drinking water, 50 have yet to use a telephone, 30 will not complete primary school, and only one will get a college education. Every hundred years, one member of the village will study abroad.

With those figures in mind, it becomes less fruitful to debate the relative merits of physical vs. virtual mobility if we hope to offer the rest of the villagers any glimpse of the world outside their borders. So, we all need to focus on how (rather than whether) to harness the benefits of remotely delivered education to extend the benefits of learning across cultural and national boundaries to the largest possible number of "villagers".

While I am no expert in the field of distance learning, let me share briefly a sense of its scope and range of uses in the United States, much of which I learned from a recent conference organised by the Global Alliance for Transnational Education (GATE), sponsored by Jones International University, one of the largest and most prominent of the American private for-profit institu-

tions that deliver degree programmes and training remotely. (JIU, founded by entrepreneur Glenn Jones, is also one of a handful of US universities without walls that has received regional accreditation in our system.) At the conference, we were told that 60% of all tertiary-level courses in the US now use some form of e-mail to supplement or replace face-to-face interaction with the professor, and that 40% of all courses have their own website. We also heard how heavily corporations are relying on online training to upgrade their employees' skills, and to help develop qualified future workers through technical training developed online in secondary and tertiary institutions, through programmes such as the Cisco Learning Academy.

US campuses are also of course racing to become online providers of education. But contrary to Peter Drucker's prediction that distance learning will become a "cash cow" for elite universities, there seems to be some countertrends as well. One of America's most prominent research universities, the Massachusetts Institute of Technology, recently announced that over the course of the next ten years, it will post virtually all its courses on the web, and make them available free of charge, including lecture notes, syllabi, exams, simulations and (if faculty are willing) even video lectures. Their motivation? Perhaps as simple as believing in the traditional role of universities as repositories of knowledge, and the desire to share that knowledge freely. Or perhaps a decision to try to drive out the growing amount of inferior and expensive coursework being offered by others by providing a higher quality product for free. (Of course, only the coursework is free; the MIT credential still costs the same -or more-than if you enrolled on campus.)

Community colleges as well as large state-funded universities deliver an increasing share of their courses online, especially for "non-traditional students"- mainly American adult learners whose timetable or location make it impossible to attend class. While there are some "free" or very inexpensive study options available online, there are also many examples of higher cost tuition, especially for the executive MBA programmes delivered remotely which are often more costly than the campus-based alternatives. Within the US at least, e-learning is not necessarily a bargain, but certainly a convenience – and likely to be incorporated before long in the offerings of almost every tertiary institution in America.

Looking overseas, the picture is more complicated. There are certainly a growing number of US universities experimenting with the off-shore delivery of courses and degrees electronically, often in partnership with local institutions. A recent survey of 95 US embassies abroad reported some form of US-provided distance education in 20 of the surveyed countries, alone or in partnership with a host-country institution. One example of this phenomenon is the Global University Alliance, whose 10 member universities offer their own courses and those of other member universities to students around the world, but primarily to students in Asia. Just as Asia represents the major

sending region for international students on US campuses (accounting for close to 60% of international student in the US), it also represents the destination for most U.S "branch campuses" and the target of most "distance learning" programmes being marketed globally.

The obvious reality is that the growing numbers of secondary students graduating in China, India, Southeast Asia, and elsewhere simply cannot be accommodated by the higher education infrastructure in their country, nor can our own institutions of higher learning absorb them – even if they had the funds to make their way here. In the past decade, branch campuses and "sandwich programmes" seemed the ideal solution, but branch campuses ended up being more costly than anticipated, more vulnerable to resistance by the local higher education establishment, and less agile in coping with economic and demographic shifts that might alter demand over time. The bursting of Japan's economic bubble meant the end of many of the branch campus experiments there. IIE's early study of this phenomenon, entitled *Profiting from Education*, accurately predicted many of the problems which confronted these early experiments, but failed to predict the biggest problem that neither the Japanese investor nor the US partner would be able to make enough profit to justify the continued expense.

Distance education, on the other hand, has a much greater ability to respond with relatively predictable levels of investment to the demand for higher education around the world, and the agility to shift its marketing targets when economic or regulatory problems in one country change the business model.

While e-learning seems the obvious high-tech fix for this problem, very basic issues remain unresolved. The Big Three of these problems are Cost, Quality, and Access.

Cost

While the goal of most universities is not to make money, many in the US did hope to find some financial benefit in distance education. The title of a recent article in the Chronicle of Higher Education says it all: "Is Anyone Making Money on Distance Education?" Studies conducted at six major U.S. universities showed that none of them has yet made a profit on this enterprise, and that most are hoping at best to break even and not lose too much money. Jones International University, which I mentioned earlier as one of the largest of the U.S. for profit institutions in the distance education field, has operated at a loss since its founding in 1993, and does not anticipate becoming profitable until 2004.

A study by the Alfred P. Sloan Foundation shows that few schools even know how to capture the data on the costs of distance learning, much less how to make it profitable. And success in one field does not necessarily mean the model is transferable. The University of Maryland spent about US $ 1 million

to develop an online MBA programme, that is close to recouping its costs, but they have scrapped an engineering management programme that appeared unlikely to break even in a short enough timeframe.

Quality: This issue is an especially big one internationally, one that currently muddies the field and clouds our ability to predict the success of distance learning as a vehicle for international collaboration. Because of the flood of shoddy or fraudulent e-learning products currently on the market, ministries of education around the world are moving with extreme caution in recognising or approving distance learning degrees or in promoting this model domestically or in partnership with foreign institutions. In Thailand, where higher education is undergoing major expansion/experimentation (including the creation of 10 pilot community colleges), degrees earned electronically are still reviewed on a "case by case" basis, not just each provider's case but each student's case!

Hong Kong's Academic Council has developed guidelines for evaluating distance learning programmes, as have many other accrediting agencies around the world, to help protect its students from the flood of dubious quality courses being offered. At the same time, Hong Kong universities hope to become a major online course provider for the mainland of China. But they and all of us are still dealing with vague standards and "guidelines", with the issue of accreditation and formal assessment of quality still largely uncharted territory, into which distance learning providers move at their peril.

The eight US regional accrediting commissions recently developed a set of "Best Practices for Electronically Offered Degrees and Certificate Courses", for shared use as they accredit these programmes in the US. Most likely, they will apply the same criteria to distance learning programmes offered abroad that are designed to result in a degree from the home institution in the US (www.wiche.edu/telecom/). It is clear that the lack of quality assessment mechanisms will be a major hurdle to international collaboration in this field.

Access: Obviously the main appeal of e-learning is that it dramatically expands access. But it also limits access to those who have computers, who speak the language of the Internet (which remains mostly English), and who can cover the connection charges or have a cheap Internet café nearby. As I noted earlier, there is a real divide between those offering online learning for free and those charging even more than the traditional costs to students who study off-site.

There is much more to be said on each of these issues. But let me briefly turn to the benefits and opportunities of e-learning, lest we be too daunted by the challenges. Not surprisingly, the benefits are just the flip side of the challenges: Cost, Quality, and Access.

Cost: Moving bodies is just too expensive, and unrealistic for all but the chosen few. IIE has for the past six years been building a Global Engineering

Education Exchange, to promote the mobility of engineering undergraduates between 74 institutions around the globe. We are excited about the progress we have made, but at best this model will allow only a tiny fraction of US engineering students to participate. Where faculty at participating universities have developed jointly taught courses delivered electronically, or collaborative projects that their students can work on together by e-mail and on the web, they have engaged the entire class, not just a lucky few, in the process of understanding that culture makes a difference, even in the field of engineering, in how courses are taught, how students work together, and how structures and civilisations are built. The impact on social science and humanities courses are even more obvious. None of this ignores that what they have learned remotely is only a fraction of what could be learned *in situ*, but in terms of cost-efficiencies, you cannot argue against e-learning.

Nothing can beat the costs of the world-wide web for sharing information and reaching new audiences. IIE will be relying more and more on this technology in its plans to expand its membership services dramatically, creating an International Education Knowledge Network that will be a one-stop source for university policy-makers, administrators, and faculty members around the globe. In consultation with European colleagues, through ACA and other consortia, we hope to develop online communities to discuss issues of concern such as quality assurance, international marketing, and yes, the relative merits of physical and virtual mobility. We will link to other sites where key materials are posted, such as the papers that this conference will be generating. Increasingly, conferences like this one will post their papers on its website, either in lieu of a final conference publication or to supplement it – to avoid the costs of printing thousands of copies of a book that only hundreds may read. Our own web-based networking is being underwritten by foundation grants, at least initially, but the web also offers other opportunities for generating revenue. Attracting “advertising” to underwrite web-based products has proven more challenging than many anticipated, but it is at least a possibility, an option that is much more limited in traditional information formats.

Quality: The creativity unleashed by the web, and by e-learning is mind-blowing, with streaming video and three-dimensional modelling and discussions that can leap over time zones and even over language barriers, as translation by computer becomes more reliable. Again, it is not the same as being there, but for a class in the middle of the US to be able to watch French TV, or have an e-mail relationship with classmates in Japan, or work in real-time projects with Mexican lab partners, is still astounding to me. Each programme that IIE currently administers will, I am sure, have added e-learning components within a few years, dramatically expanding its outreach and deepen its long-term impact on participants.

Access: While international access is constrained by the lack of computers or unreliable Internet access in some countries, there are many other

cheaper and simpler kinds of distance learning as well – ranging from the use of radio broadcasts to remote villages, to live TV and videotaped delivery of seminars via The World Banks new Global Development Learning Network. However it is done, students who have such access reap huge benefits at minimal cost, as their classroom is internationalised by “classmates” who log on across the globe. New kinds of programmes are reaching new audiences who have never considered coming to the US for study: a new “business English” programme being offered on the web by Columbia University’s School of Continuing Education is providing self-paced learning supported by Columbia university tutors, at a price that is similar to on-campus instruction but reaching large numbers of professionals whose career success depends on the ability to write in English, clearly and effectively, but who may have no possibility of an overseas study period.

Another unanticipated benefit of remote access is how it frees some students from the inhibiting realities of their classroom setting. Recent studies confirm that women, and others who may not always feel comfortable speaking out in class, are freed by technology to participate vigorously electronically. Students with certain kinds of learning disabilities who may function poorly in the classroom may blossom by learning in another venue and format. But at the same time, it is becoming clear that e-learning takes a level of discipline, motivation, and patience that “traditional learners” may lack. For those 18-22 year olds, it appears from early studies that nothing works as well as the rigid schedule and eyeball-to-eyeball contact of the traditional classroom.

On balance, it is clear that virtual mobility is a valuable tool for extending physical mobility and one that international exchange agencies cannot ignore... but also that its limitations are not likely to be overcome by faster modems or higher tech solutions. The US State Department has recently published a list of over 100 world leaders who studied at US colleges and universities, ranging from Kofi Annan to Vicente Fox to King Abdullah of Jordan and Gloria Macapagal Arroyo of the Philippines. While their US stay may not have converted them to the American point of view (if there is one), it certainly helped them better understand our culture, our concerns, our strengths and our weaknesses. I am prepared to assert that their sense of what America is could not be obtained surfing the web. And for US students, many of whose Congressmen have yet to travel outside the country, that trip across the ocean remains the very best way to “open minds to the world”.

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Nursing and IT: A Nordplus network. International collaboration through net-based distance education

Education is one of the most important elements we bring to the future. With more advanced technology the world has become smaller and our everyday life has become exposed to multicultural streams. Technology is about to fade out distances, making international collaboration easier, which is of utmost importance. Traditional education and teaching, where students come to college after high school and move on to graduate school thereafter, is no longer the dominant reality. Students today are older, many of them already have work experience. But they feel the need to acquire new skills to meet the demands of a changing workplace. To have to move a family over a long distance in order to obtain an education is difficult. Traditional classroom education, with one-way teaching, is not suitable for these students. To be able to sit down at home, to go to the nearest computer lab, turn on the TV in the videoconference centre at school, share ideas with classmates in a country next to yours or across the Atlantic Ocean, and discuss relevant nursing issues with them, is a more appropriate learning form for them.

The above description reflects a few achievements of the joint course “Informatics in Nursing and Health Care” of the universities of Iowa (US), Iceland (Reykjavik), Oslo (Norway) and Örebro (Sweden), held in the spring semester of 2000. Distance learning with advanced telecommunications technology made the course possible. This included live two-way videoconferences, e-mail contact, WWW-based interaction, and in-class communication between students and students and teachers in four countries at the same time.

International collaboration can lead to various results, some foreseen, others not. When a new master’s degree programme in nursing was established at the University of Iceland in autumn 1998, collaboration was sought with Dr. Connie Delaney, Associate Professor of nursing at the University of Iowa, USA, for a course in nursing informatics. Dr. Delaney is a leader in the field of health informatics with considerable experience in distance education. Prior to the course described here, her experience with distance education had, however, been more or less limited to the State of Iowa.

1 in collaboration with Conny Delaney, College of Nursing, University of Iowa, Iowa City, USA; Margareta Ehnfors, Örebro University, Sweden; and Cornelia Ruland, University of Oslo, Norway.

In the beginning, Delaney and Thoroddsen intended the course to satisfy the University of Iceland's need for informatics content for its new master's programme in nursing and the University of Iowa College of Nursing's desire to develop international clinical research and teaching opportunities. In discussions with colleagues from Sweden and Norway, Dr. Margareta Ehnfors and Dr. Cornelia Ruland, it became evident that an interest in this kind of course and experience was wider. A network between the four schools was therefore established.

The nursing informatics course

In the University of Iceland's master's programme in nursing students are required to take five to fifteen out of 60 credits at a foreign university. The credit systems in the four schools are different. After comparison and discussion, the course was set to be worth nine ECTS credit points. The credits from the course could therefore be easily transferred from one system to another. In the three Nordic countries, the course counted as an elective course in nursing. The number of participants in the course was 60, of whom 15 came from Iceland, 30 from Iowa, eight from Norway and seven from Sweden. Students participating needed to have access to the Internet and e-mail, and a basic knowledge of standard software, such as Word and Excel.

To give the reader some feeling for what a course in nursing informatics is all about, it must be stated that primary attention was given to:

- databases and information systems to support patient care and knowledge development;
- electronic health care records;
- clinical, educational, research and administrative computer applications; and
- policy, legal and ethical issues.

Specific emphasis was on incorporating expertise from the four universities.

The course drew upon a variety of telecommunication and computer-based technologies, but also on face-to-face communication. In the first year, WebCT courseware was used throughout. In the second year, "Beyond The Curve" software was used. Each student maintained a home page and interacted regularly via e-mail and bulletin boards. Real-time chat room discussions were held and regular online office hours for student-faculty interaction were provided. All course readings and assignments were accessible on the Internet. The grade book function supported self-monitoring of student progress. Although English was the primary language used, students were encouraged to use their respective native languages as well. Three two-hour interactive video conferences, scheduled at one-month intervals, enriched the web-based course. Students submitted course assignments and shared projects electronically. All four faculty members collaborated in review and grading.

Teaching methods

Face-to-face communication through interactive videoconferences was one of the teaching methods. Discussions, lectures, and invited speakers are examples. The group met with some of the leading scholars worldwide in the field of nursing from Iowa, learned about the innovative and progressive work Norway is doing in the field of telehealth and telenursing, and about the VIPS model developed in Sweden and the national health sector databases in Iceland, to name only a few. ISDN technology was used in the beginning. Although the group was generally satisfied with this technology, delays occurred in the transmission of sound and pictures. The dialogue between countries was therefore not ideal. Netmeetings were therefore later held with the use of a new technology, IP-technology. National Research and Educational Networks (NREN) plays a role there. The Icelandic RHnet is connected to NORDUnet in Denmark with a 45 Mbit/s, which itself is connected to TERENA with a bandbreadth of 2,5 Gbit/s. TERENA is the research and educational network for Europe and the United States. IP-technology is cheaper than ISDN, and sound and image transmission is much better, which is its greatest benefit. All communication became far more natural. Those involved were no longer dependent on bandbreadth and the availability of telephone lines.

> *Online chat or chat-rooms give students and faculty the possibility of sharing thoughts, opinions and to discuss issues in some depth. At least four or five groups can chat at the same time, one group in each chat-room. Most of the dialogue took place in English, especially when the whole group participated, but students from Iceland, Norway and Sweden often communicated among each other in their native language. When using chat-rooms, everybody needs to be on the net at the same time. Time differences between countries can therefore create problems. Good typing skills are needed by participants to be able to participate effectively. Chat-rooms are not suitable for big groups.*

Bulletin boards make information available at all times, with everybody having access. It is independent of time and language, simple in use and easy to learn. Communication partners can be identified by their name. The bulletin board is easy to organise, for example by subjects. However, chaos can be created if users do not apply the organisation rules of the board and information can get lost in many messages or entries, which were around 2,500 at the end of the course.

> *In any form of teaching, the human factor plays an important role. Regardless of the advantages of technology, human interaction will always be important. For this reason, the course entailed, at the beginning and the end, a one-week meeting of all Nordic students and faculty, which was held in Reykjavik, Iceland. The week introduced students to the course and the technology used. All students had access to computers and Internet connections through their respective universities, and several had access to computers either at home*

or at work. Technical support for all students on the programme was provided by the University of Iowa. In addition, each of the cooperating universities supplied local support.

Nordplus

The Nordplus programme made this initiative possible. The four faculty members applied for a Nordplus grant in February 1999 and received a subsidy of 100,000 Norwegian crowns. Nordplus is a programme of the Nordic Council of Ministers, with the objective of enhancing cooperation between higher education institutions in the Nordic countries, of increasing Nordic cohesion and kinship, and of improving the quality of education. It funds, among other activities, intra-Nordic mobility of students and faculty. The course started in January 2000. The Nordplus grant covered travel and accommodation costs for six Nordic students for two separate weeks in Iceland, and travel expenses of faculty to and from Iceland as well. The remaining six students managed to find funding elsewhere or paid from their own pocket, in order to be able to take part. Nordplus also provided funds for technology and connections, which was important. The largest cost item was the ISDN connection between the four (at times five) different locations, as well as travel.

Long term benefits of the course

With the help of technology, this course brought education to students in four countries in a very effective way. A whole new world was opened up with the help of new technologies hitherto unknown to the students. They exercised learning by doing, by utilising technology for their own growth and benefit. They experienced a shift from teacher-centred education towards student-centred learning which, from a pedagogical perspective, is very important. The students, all of them nurses older than the average graduate student, were able to identify and share similarities and differences in nursing education in different countries with the help of WebCT. With its bulletin boards and chat rooms, WebCT makes interaction between students easy. Discussions between students were lively and interesting, new perspectives were opened and experience was shared. Innovations went far beyond using tools for downloading information or studying lecture materials available online. The course was essentially about developing skills in acquiring knowledge from ever-expanding electronic information sources, and eliminating distance in time and space, which are valuable elements for the today's world. One of the students summarised this nicely:

In this course, we are introduced to using technological means for studying. I have now learned how to find and contact other people working in my field of nursing on a worldwide basis. The discussions on bulletin boards and chat rooms have been very interesting, especially when different cultures have met

– really cross-cultural: USA, Iceland, Norway and Sweden. With this teaching method, I can be in courses from different countries in the same semester – giving me a more international view on the subjects and giving me new ways in combining my studies – not limited to the location of the University. Most important is that, through technological means taught in this course, you get access to the leading persons in the nursing field you are studying. The last point will last beyond the course. (Gudmundsdottir, E.)

Participants in the course became very aware of the fact that there is, on the one hand, a large terrain of commonality of issues between countries and, on the other hand, a unique quality of each culture in nursing informatics and the practice of nursing. Combining resources and bringing together students from four countries with different cultural backgrounds and languages was a novel and unique undertaking. It was important, therefore, to learn from this experience. Students, encouraged to share their experiences in a two-hour group discussion and in course evaluation surveys, applauded the multicultural course format and reported that it provided them with new ways of thinking and cooperating. Country borders and time mattered little when sharing information and ideas in cyberspace. The course had provided them with colleagues from other countries and lasting collaborative relationships for the future. It should also be mentioned that the course was awarded the Sigma Theta Tau International (STTI), Region 2 Education Technology Award for Computer-Based Professional Education in April 2001 by the Honor Society of Nursing, STTI.

Melanie Dreher, Dean of the College of Nursing at the University of Iowa and a participant in the course's concluding session in Reykjavik, captured the essence of the collaboration:

This project is a perfect experiment in global education. It gives us just a glimpse of what is possible with today's technology – but its overwhelming success was clearly the result of four dedicated, future-oriented faculty members who truly understand the possibilities and who care about changing the course of nursing education and public health through collaboration as well as technology. The students in this course brought an intelligence and élan to their studies and cross-continental affiliations that were no less than inspirational. (Delaney et al, 2000).

The experience gained from this international collaborative experience begs nursing to expeditiously address issues that may be barriers to distance education and enhanced knowledge building, including intellectual property policies, faculty workload issues and university collective investments in courses and content. We share the hope expressed by the executive director of the US-based Distance Education and Training Council: "It is my hope that the debate of context versus content dies quietly, so that all of us can get on with the business of creating and offering the best possible learning opportunities in the world, using every means at our disposal" (Lambert, 2000).

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Productive learning cultures

Introduction and background

"Productive Learning Cultures" is a research cooperation project involving six universities in the Southern African region and the University of Bergen, Norway. The project originated in 1997 at the University of Bergen, with Professor Otto Fuglestad as project leader and Associate Professor Sølvi Lillejord as project coordinator. Since 1998, the University of Bergen has been supporting the project financially through the Meltzer Foundation.

The main partners in the project are the University of Bergen in Norway and the University of Pretoria, South Africa. Other partners are the University of Zululand in South Africa, Universidade Pedagógica in Mozambique, University of Zimbabwe, University of Botswana and University of Namibia. The participating researchers focus on topics such as curriculum development, educational leadership, classroom research, philosophy of education etc.

During the 1990s, fundamental changes rapidly influenced the development of education policy. Researchers have been referring to the ideological changes that took place as a global phenomenon, "a global circulation of ideas" (Ball 1995, Popkewitz 1996, Barber 1997). Some of these ideas could, according to Ball, be related to concepts such as market forces, incentives and autonomy, steering from a distance, quality control and authority. The user's right to question and influence the services they are being offered is also a central theme at this global arena.

Both Norway and the Southern African countries are thus in the midst of thorough education reform processes, which question established views on teaching and learning. New curricula are introduced at all levels and it is emphasised that teaching should be perceived as a collective responsibility, not merely as an individual skill. Learning is considered a constructive activity based on reasoning, reflection and action, and teachers are supposed to act as facilitators and to use teamwork to consolidate this new approach (Lillejord 1999).

The reform documents in each of the countries involved in the project focus on the development of new perspectives on teaching and learning. There is a wish to design new "roles" for learners, teachers and school leaders, a strengthened focus on management and leadership issues, a quest for more user participation and school self evaluation (the school as a learning organisation). All these changes challenge and inspire the educational researchers

participating in this project, and the network was subsequently structured in a way that should make it possible to learn from each other.

Productive Learning Cultures is primarily a research cooperation, based on an established network between the participating researchers. There have been several exchange visits in the course of the project. Staff and students from South Africa, Botswana, Namibia and Mozambique made research visits to the University of Bergen, and researchers from the University of Bergen have on several occasions visited the cooperating institutions. There is ongoing work on publications. Three books are planned: one on educational reform, the second on school leadership and a third on qualitative methods. The project also includes a PhD programme. One PhD student already graduated (Lethoko 2001) and two others are in their final phase.

This presentation of the project consists of four parts. I will first outline the project's structure and give a brief presentation of its four main parts: African knowledge systems, leadership in education, qualitative methods and web-based learning. Next, I will discuss the project idea itself, encapsulated in the concept of a "productive" learning culture, as distinct from a reproductive culture of teaching and learning. In the last section of the presentation, I will elaborate on the web-based part of the project and show possible connections between interactive learning and productive learning cultures. I will also touch on what we expect to gain from focusing on interactive learning.

The structure of the project

The project could be perceived as an umbrella, uniting various sub-projects at the participating universities. They all have – as a common denominator – a constructive and relational approach to education and leadership.

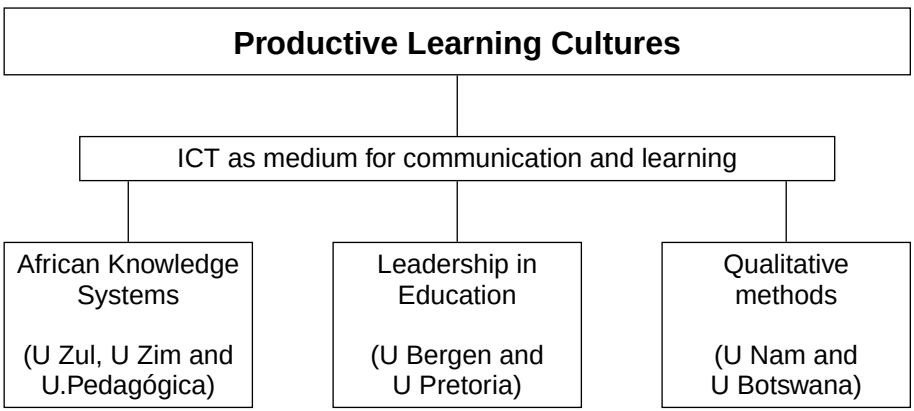

Figure 1.0: The structure of the project Productive Learning Cultures

The project itself consists of the four elements shown in figure 1.0 and the overarching project idea (described below). Its focal point is the change in the culture of teaching and learning brought about by the educational reforms. In the reform documents this is described as a shift from a teacher-centred to a learner-centred approach. In the project this shift is being studied from various angles: how does a learner-centred approach challenge educational leadership? How is knowledge being constructed in traditional African cultures, and how does this influence what the learners bring to school? How could qualitative methods be used and further elaborated in the study of these processes? I will give a very brief presentation of the four elements of the project.

African knowledge systems: This part of the project aims at giving substance to the idea of an African renaissance. The marginalisation of African values in formal education systems has resulted in a general "westernisation" of education and research. A challenge for African researchers is to develop research based on African cultures, values and experiences and to engage the local communities in the developmental processes. African universities and research institutions could take an active part in promoting heritage, culture and knowledge systems by redirecting the focus of research into nation and community building. The project's aims are, first, to initiate community-based research that actively builds on and further develops community knowledge, and second, to give African research a social and cultural basis by linking research to communities.

Leadership in education: A contemporary challenge for leaders is the emerging knowledge society and how to manage knowledge construction (Wilson 1996). Resent research indicates that knowledge should not only be managed, but should be created and recreated in organisations (Von Krogh, Ichijo & Nonaka 2000). As a consequence of such insights, also established institutions like schools should make a move towards becoming learning organisations and focus on the specific requirements on new skills and styles in leadership (Senge 1990, Nonaka & Takeuchi 1996). In this process, established power structures are being challenged (Tabulawa 1995, Hirschhorn 1998). In a developmental perspective, organisations are being studied as units that are evolving (Aldrich 1999), and a relational perspective on educational processes proves fruitful in contemporary studies of leadership processes (Fuglestad & Lillejord 1997).

Qualitative methods: Qualitative methods are well suited for the study of educational processes because education is action-oriented and involves human beings. Qualitative research takes into consideration that our knowledge about the man-made world is constructed. Man is, as Max Weber once pointed out, "suspended in the webs of significance he himself has spun" (Geertz 1973:5). According to Geertz, the webs are culture and the analysis of culture is not experimental science in search of laws, but an interpretative,

semiotic one in search of understanding. When qualitative research is used interpretatively, it is thus essentially hermeneutic. Our knowledge of the world is also contextually based – and always somewhat local – as we are being reminded by pragmatics like Dewey, who insists that method is "never something outside of the material" (Dewey 1916:165). In this project, qualitative methods are used to support the understanding and interpretation of African knowledge systems and to investigate and interpret characteristics of leadership issues and relations in a productive learning culture.

Web-based learning: Interactive, web-based learning is a project bridging the other project elements (see figure 1.0). An intention in this part of the project is to promote and support the communication within the project, but also to learn more about the characteristics of interactive ICT-mediated teaching and learning. The development of ICT has without doubt a profound impact upon teaching and learning. There is a change from a model based on transmission of knowledge, from teacher to learner, to the construction of knowledge within a context. Electronic networking facilitates communication across boundaries, cultures and on a global scale. Successful online learning depends on teachers acquiring new competencies, and in this part of the project the focus will be on the construction of knowledge in interactive learning.

The project idea: productive, not reproductive

The project focuses on educational challenges in a time of educational reform on a global scale. The term productive learning culture is used as a negation of a reproductive culture of teaching and learning. In a productive learning culture, the concept of knowledge and learning will be constructive and knowledge perceived as something "man-made". In a reproductive learning culture, knowledge is supposed to exist externally, it is simply there, as something "given". In a productive learning culture it is considered important in any educational setting to build on what people know and bring with them, instead of continuously correcting the mistakes they make. It is also considered vital to inspire people actively to improve, instead of rendering them passive by telling them what they should and should not do. In a productive learning culture, the focus will be on problem solving, not on correcting mistakes.

Any choice of pedagogical practice implies certain conceptions of knowledge, of learning and of the learning process. As Jerome Bruner puts it, "Pedagogy is never innocent" (Bruner 1999:17). In traditional education, the teacher is the active agent, in control of both the subject matter being taught and the educational setting. Teaching is – often – synonymous with lecturing. In this paradigm, the student plays a passive role, expecting both to be told what to learn and how to reproduce it. The student is being assessed according to how well he reproduces the subject matter that has been taught. This paradigm can be depicted as follows:

Figure 2.0: Traditional lecturing paradigm

This traditional teaching paradigm is – in a Weberian sense – based on a purposive and instrumental rationality presupposing that lecturing is instruction and that it is possible to plan for learning. What the students are supposed to learn exists in the head of teachers, in books, computers etc. Knowledge is a commodity that can be looked up. It is given and can easily be reproduced. The students are being presented facts and theories they should learn, remember and reiterate. It is supposed that procedural knowledge and "know how" more or less follows automatically once a person knows the facts, the theories or the "know that". The paradigm rests on the didactical assumption that the child is a *tabula rasa* (that should be filled), that the learner is passive (waiting to be taught), that knowledge is cumulative (new knowledge builds on existing), that teaching is a one-way activity and that learning is a linear process.

The philosophical ideal underpinning this paradigm is inspired by crude, cumulative empiricism. It builds on an assumption that complex tasks can be reduced to specific goals and that students must be taught the foundational parts in order to see the whole picture. According to Jerome Bruner, this could be perceived as an established cultural belief, where the teacher is an authority "who is supposed to tell the child what the general case is, while the child should be occupying herself with memorising the particulars" (Bruner 1999:5).

In the project Productive Learning Cultures, this paradigm is being questioned. In a learning age, we should ask questions like these: What if the process of learning is not cumulative and linear? What if we do not learn by placing building blocks next to or on top of each other? What if the teaching process is more like reading a novel or looking at a picture being slowly focused, as we gradually see new relations and connections? What if learning is a process presupposing reorganisations and restructuring while we learn?

Such questions lead us to constructivism or pragmatism, focusing on the practical implications of an idea or theory. Knowledge is being perceived as the (dialectical) product of evidence, argument and construction rather than of authority (Bruner 1999:13). Knowledge is justified true belief (Plato), shared within discourse, within a context or a "textual" community. A constructivist perspective on learning supposes that construction of knowledge takes place when groups of people interact in practical problem solving within a cultural community. Adult learning is for instance typically characterised by trial and error – by approaching the object being investigated from various angles. We ask when we do not understand. The question immediately involves us in a dialogue.

Interactive learning

Web-based learning relies on a structure that makes it possible to structure one's own learning process. Web-based learning also challenges the traditional instructional mode, and it emphasises individual tuition for each student as well as collaborative group work. In this project, we try to make a "didactical turn" on the traditional teaching paradigm by establishing the medium (ICT) as a pedagogical meeting place for students and teachers. This meeting place constitutes a context where knowledge is being constructed in a joint effort. An important supposition in the project is that in interactive and "dialogical" learning processes the traditional knowledge regime is under pressure. This challenges established power structures and relations, and it opens new perspectives for the student's own activity in his or her own learning process:

Figure 3.0: Interactive learning

We strongly believe that web-based learning must be web-based learning, not traditional instruction via a new medium. The interactivity should be perceived as a possible meeting place for the construction and reconstruction of knowledge. It should investigate the possibilities brought forward by the new medium: Interactivity, the visual dimension, possibilities for active learning, trial and error. The learning process is also adapted to the individual learner (follow up, tuition).

In short, what we wish to achieve in this part of the project is to use a new medium for teaching and learning to learn more about learning.

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Virtual education and mobility: A view of the European Commission

This presentation is composed of two parts. The first part introduces some interesting and in many ways controversial analyses of and insights into how virtual technology is shaping, or has already shaped, the world around us and the people who live in it. The second part outlines the initiatives the European Commission has launched to address the virtual challenge.

Among all the "e-movements", e-learning or virtual education is one of the fastest growing. Educational institutions, local and national governments as well as commercial organisations are increasingly investing in e-learning. There is a new generation of virtual learners, managers, shoppers and chatters, who are able to take the full benefit of the expansion of virtual modes of learning, services, communication, and information.

At a recent conference which explored the concept of virtual mobility, a participant commented that virtual education would mark the beginning of the third wave of internationalisation. The three waves can be illustrated as follows:

- the first wave: student mobility (people moving). "Students to Europe".
- the second wave: joint development of curricula, teaching staff mobility (ideas moving) "Europe to all students."
- the third wave: virtual education. "Courses and curricula to Europe".

One of the questions we ask today is whether virtual cooperation and mobility will replace physical mobility. In terms of the three waves, will the third wave replace the first two? Or is it, rather, a question of modes of cooperation that can – and must – exist side by side, in order for each one to facilitate, support and complement the others? The second wave has certainly not replaced the first, quite the opposite: joint development of curricula and better understanding of each other's curricula as well as teaching staff mobility have rather had the effect of facilitating and promoting student mobility in Europe – and vice versa. Virtual education can contribute to bringing European cooperation to a new level.

Mobility is at the heart of the European education and training programmes. It is one of the most important building blocks in the construction of a com-

mon Europe, in the construction of European citizenship. Many studies[1] have shown the numerous benefits that mobility brings to individuals: being in contact with other Europeans, immersion in their cultures, languages, customs and everyday life improves the individual's language and communication skills, his/her intercultural and social skills as well as his/her "holistic skills", such as problem solving skills, analytical powers, adaptability etc.

The question is: what does virtual education / virtual mobility bring to this picture? In analysing the forces at play in this regard, I will below comment on the following themes: first, a new generation of learners, highly mobile on the Internet; second, the potential of ICT to enhance learning and improve teaching; third, the explosion of digital products for the education market and the challenge of quality assurance; and fourth, the digital divide.

The new generation of learners

A new generation of youth already partially lives in the cyber world. This new generation of learners, called the mobile net generation (MNG), cyber nomads or *Homo Zappiens*[2], is different from what one usually expects a pupil or student to be like. The new learners have developed skills such as non-linear thinking, i.e. the ability to deal with discontinuity, the ability to pick relevant information from a non-structured information flow on a continuous basis, and multitasking (using multiple parts of the brain: visual, textual, sounds, scanning of screens etc.)[3]. On the other hand, they might have lost some other skills, such as face-to-face social skills, the capacity for critical and reflective thinking, a sense of responsibility. All this poses new challenges for the education systems.

Does being mobile on the web increase one's understanding of other cultures? Do one's intercultural skills improve? Jacques Attali has characterised the Internet as "the discovery of a sixth continent on the planet Earth". Expanding this image a little, we can say that, like the other continents, the Internet has a culture of its own, a language of its own (based on English, however), and customs and habits of its own. When you are mobile on the web, you will be introduced to this culture.

Education and training systems are about the transmission of values and the preparation of active citizens. Like the economy, our "values systems", whether they are national or European are, likewise, affected by technological developments. The Internet is a treasure of information and communica-

1 *SOCRATES 2000 Evaluation Study. Study for the European Commission* (2000), ed. by Ulrich Teichler, Jean Gordon and Friedhelm Maiworm. http://www.europa.eu.int/comm/education/evaluation/global.html

2 Term used by Wim Veen, Delft University of Technology, the Netherlands. http://www.dido.tbm.tudelft.nl/Medewerkers/wimv/index.htm

3 Don Topscott (1997), *Growing Up Digital: The Rise of the Net Generation.* McGraw-Hill. Morten Soeby, Virtual Mobility. "Mobility: from Individual Development to Employability", Conference, Stockholm, May 31 – June 1, 2001.

tion potential, but it is able to circumvent a number of the codes and values we cherish in our societies. It does not always respect privacy and intellectual property. It is "crowding out" personal contacts by virtual ones: between client and customer, between government and citizens, between employers and employees. In doing so, it may very well be altering the notion of "community" and the "art of living together", which is a cornerstone of any modern democracy.

However, one can equally well claim that the web can also enormously contribute to the socialisation process and to the art of living together: the web generation is characterised by strong independence, intellectual openness and creativity (due to constant change and need for restructuring), and interactivity.[4] The web promotes social inclusion (everybody is equal on the web independent of gender, race, age, disability) and free expression (inspired by anonymity?).

The potential of ICT in enhancing learning and improving teaching

In terms of learning contexts and motivation, technology has a tremendous capacity to increase student learning and student interest in learning. Research shows that student understanding and retention improves when students learn by experience. Technology can engage students in active learning with realistic, practical problems that connect learning and real life.[4] Technologies such as collaboration environments, modelling, simulations and virtual reality interfaces can help students experience the skill being taught.

Easy, rapid access to vast amounts of information encourages students to search, explore and combine information. Technology also offers students the opportunity to return, at their own convenience, to material previously covered.[4]

Technology can be a driving force for pedagogical and structural change in higher education. The roles of academic staff are changing as the latter are forced to shift from the role of information provider/broadcaster and producer (thanks to their research activities) to that of learning facilitator and tutor. Teachers' activities are shifting towards teaching design, giving new structure to multiform and complex pieces of knowledge, drawing up the blueprint for knowledge acquisition and even designing education tools and media. Their role as facilitator and tutor requires new cooperative qualities and a team approach in relation both to their peers and to their students, in contrast to the traditional individual ethic of higher education.

The learner takes charge of his/her learning, i.e. there will be a natural shift from passive, reproductive learning to active learning for practical purposes.

4 Frank Newman & Jamie Scurry (2001), *Higher Education in the Digital Rapids. The Futures Project.* www.futuresproject.org

Learning can be customised to individual needs (pace, learning style). There will be a move from a teacher-centred mode to a student-centred one. Virtual education can be the driving force in moving towards interactive learning as a pedagogical paradigm.

Digital products

All this potential has not gone unnoticed. The last few years have witnessed an explosion of virtual or online-courses from traditional universities (non-profit or for-profit); from institutions that are entirely virtual and from consortia of "brick-and-mortar" institutions. It has been said that no institution, no matter how great its prestige in the traditional mode, will be able to escape the need to compete effectively through the skilled use of technology to enhance learning.

The picture of providers and products is very varied. There are traditional universities offering more flexible learning options to their students on campus with the help of ICT. This is a mixed model with virtual studying as a complement or alternative to classroom learning inside a degree programme. One can envisage similar provisions at different levels: from purely local to national and further to transnational levels, i.e. web-based courses developed and offered by international consortia and networks of universities. This offers new openings for European cooperation, building on the experiences that European universities already have of cooperation networks under the Erasmus programme, for example.

There are also entire degree programmes offered virtually, leading to virtual degrees and diplomas. In these cases, the virtual course is the only option. Here the profile of providers is even more varied: new virtual universities; consortia of traditional universities that can be regional, national or transnational; corporate providers (e.g. Microsoft, Disney, Daimler-Benz). Again, the possibilities for European cooperation in designing and offering joint degrees are limitless. Joining forces with the corporate sector, i.e. public-private partnerships, will play an important role in future developments.

Virtual learning environments will make it possible for anyone, anywhere, anytime to get access to university-based learning opportunities. This means that opportunities to combine work and studies will be increased. This means that new groups of students will have access to higher education both at home and worldwide. This means that students can have access to courses at a foreign university while at their home university. This means increased possibilities to internationalise the content and context of education. This means a competitive advantage for European universities if they face the challenge together.

These exponentially growing opportunities on the web raise the issue of quality assurance. Virtual education and borderless/transnational education are

an expanding business. The availability on the web of education of unclear quality or education leading to different kinds of unrecognised diplomas is increasing. On what basis can the learner make his/her choice in this virtual jungle?

It is in everybody's interest to ensure that students and later employers can make a good and safe choice of study programmes and institutions, whether traditional, non-traditional or virtual. This is very important in building an open European labour market, where people can easily move from one country to another.

Wide range cooperation is called for between national quality assurance systems for establishing a common framework of reference (common definitions, recommendations, European framework for quality) and dissemination of best practice in Europe. Quality assurance systems play a vital role in ensuring high quality standards and in facilitating the comparability of qualifications throughout Europe. The European Network for Quality Assurance in Higher Education, ENQA, which was established in 1999, is a concrete tool for cooperation in Europe. One of ENQA's current working groups is focusing on the quality of new forms of delivery in higher education.

The digital divide

In addition to the challenge of quality assurance, we are also faced with the challenge of the digital divide. All the benefits of virtual education are there for the taking – if only you have access to the supply.

There are two digital divides on our continent: one that separates Europe from the United States, and one inside Europe that separates digitally literate groups in society from others.

The Internet is more present in everyday life in the United States than in Europe. Whereas more than 40 percent of American homes are connected to Internet, less than 30 percent are in the European Union. The daily use of computers in general is also much more widespread in the US than it is in the EU. From 1997 to 1998, US online consumer spending increased from 10 times to almost 20 times the European amount. In the course of one year only!

The situation in schools is even more telling. In the Scandinavian countries, which are in this respect the most advanced in Europe, there is an average of about eight pupils per computer in schools, and almost all the schools are connected to the Internet. But one can still find major disparities between the various European countries. In French primary schools, for example, there are 30 pupils per computer, and only 10 percent of those computers are connected to the Internet. On the other hand, at the end of 1998, the United States had an average of six pupils per computer, and 89 percent of the schools and 51 percent of classrooms were connected to the Internet.

There is an enormous “digital gender gap” in Europe, where 82 percent of Internet users are men and only 18 percent are women! There is also a “digital third age gap”. Although our societies are greying, the Internet is not: 87 percent of old age pensioners do not have access to the Internet, whereas 65 percent of those under 30 do.

European policies

Europe can reply to the challenges described by joining forces and working together, by sharing and exchanging information and knowledge, by formulating answers together. At European level we can identify concrete common targets and set benchmarks and deadlines, so as to stress both the importance of the action and our shared responsibility for making it happen.

At the Lisbon summit of March 2000, the Union set itself a strategic target for the coming decade: to become *the most competitive and dynamic knowledge economy in the world, capable of sustainable economic growth accompanied by quantitative and qualitative improvement of employment and of greater social cohesion*. The same meeting identified several common educational objectives for achieving this strategic target, the most important of them being the definition of the common future objectives of education and training systems of the Union.

The report[5], which has subsequently been adopted, outlines three main objectives – increasing quality and effectiveness, facilitating access, opening up education and training systems to the wider world – with due attention to both the promotion of ICT skills (developing skills for the knowledge society, ensuring access to ICT for everyone) and the promotion of mobility and co-operation in Europe. An “action plan” will follow identifying specific targets with indicators and benchmarks for the Members States and the Union to act on.

The Commission’s eLearning initiative[6], which builds on the eEurope initiative adopted at the Lisbon summit of March 2000, sets four goals:

- the availability of a quality ICT infrastructure at an affordable level;
- the availability of training and assistance to enhance quality in ICT;
- the development of a diversified European supply of contents and services on the Internet;
- European networking of all relevant ICT-related initiatives with a view to coordinating them better.

5 *Report from Education Council to the European Council on the Concrete Future Objectives of Education and Training Systems* (2001). 5980/01 EDUC 23. http://europa.eu.int/comm/education/obj_en.pdf

6 *eLearning – Designing tomorrow’s education. Communication from the Commission.* COM (2000) 318 final. http://europa.eu.int/comm/education/elearning/doc_en.html

This is a joint initiative to encourage the Member States, social partners and industry, and teachers and learners, to connect schools and training places to the Internet and multimedia and, in doing so, to link European societies to the information age. The eLearning Action Plan[7] identifies concrete measures to achieve these goals. The measures for higher education are outlined below.

The exploration and development of new models and ideas for virtual European universities and virtual campuses is encouraged. The idea is to map out possibilities for different types of partnerships at European level, and to be clear about their advantages and disadvantages. The aim is also to explore possible types of virtual products: European degrees combining courses and materials from different universities or other structured combinations of virtual and face-to-face learning with a European scope.

Virtual European campus structures should facilitate access by students and teachers to virtual learning resources and to European cooperation networks at all levels. This could mean, for example, European-wide access to university libraries, research laboratories and seminars as well as to professional and academic associations' debates and information resources.

The Action Plan also foresees more research into, testing of, and forward studies of new learning environments and the use of ICT in education, both from a pedagogical and technological viewpoint, focusing on a critical-reflective use of new pedagogical methods and approaches, and assessing the added value and benefits of e-learning environments for the learners and communities involved. New educational visions of what can be achieved with emerging technologies are an integral part of the development work.

A further intention is to create a virtual network for cooperation, "a European laboratory for innovation in e-learning". This is to be a European platform for meetings and exchanges, a bridge between education and research, linking pedagogical, technical, organisational and socio-economic research on e-learning, and providing communication channels between researchers and practitioners in the field.

Promotion of virtual mobility is at the forefront. It can be seen either as a preparation for or as a complement to physical mobility, as well as the provision of enhanced opportunities for a European experience for those unable to become physically mobile.

A virtual mobility scheme, "virtual Erasmus", could, for example, be envisaged as a three-phase scheme in which a period of physical mobility is preceded and followed by a period of online studies at the host university

7 *The eLearning Action Plan – Designing tomorrow's education. Communication from the Commission to the Council and the European Parliament.* COM (2001) 172 final. http://europa.eu.int/comm/education/elearning/doc_en.html

(virtual mobility). This would enable continued contact with host university and teachers in the longer term, even in cases where the actual mobility period is short. The virtual components would therefore improve the quality of the study abroad period.

The virtual components should be open to non-mobile students as well. These students would benefit enormously from a virtual component in their studies, which could be arranged as cooperative learning projects of home students, host students and/or mobile students working together.

Furthermore, inclusion of virtual components in the organisation and preparation of mobility could increase the quality and the impact of the Erasmus student experience. Contact can be kept up throughout the exchange period with the home university and teachers. Language preparation can be improved with an online language preparation course before the actual on-site course at the host university. This would increase the efficiency of language preparation by allowing a greater number of Erasmus students to take an intensive language course at the host university at intermediate rather than beginner's level. The online language preparation course could include a system of tutoring, which would also provide Erasmus students with contact persons at the host university.

Virtual mobility will be a powerful tool to promote physical mobility. A virtual component in the study programme will act as a stimulus to participate in physical mobility. Our *Homo Zappiens* will experience an irresistible urge to go and see for himself, to speak face-to-face to his virtual friends – in their language – and to study and learn in the real setting of a university abroad.

Knut Olav Aslaksen
University of Bergen, Norway

Imagine Global U – European Union and international initiatives as an incentive for international virtual education

Imagine Global U

Every day, more than 40 million students step into one of the 2,500 Global University campuses in 117 countries around the world. In Australia, the Global University sells one out of four degrees programmes. The corporation operates primarily as a franchiser, with about 80 percent of its campuses independently owned. The remainder are educational companies, operated by Global University International. Global U is ranked 126th in the Fortune 500, based on an official annual revenue of $ 23 billion – although actual sales revenue, including that generated by the franchised campuses, was around $ 39 billion in 2005.

Outside the US, Global U has close to half of the world's branded higher education and training market, and 63 percent of sales (Highlights, 2003 Annual Report). The corporation opens four new learning centres a day, 1,750 a year, most of them outside the US. In the past decade, Global U has entered 64 new countries, with the US and European businesses contributing most to operating income. In 2004, new markets included Lebanon, Moldova, Nicaragua, Pakistan, the Republic of Georgia and Norway. E-learning and e-commerce open new opportunities for the company and CEO Jim Weinberg says that there are market opportunities for the company on every desktop and PDA around the world.

Global U's s vision is to provide the best and most cost-effective learning experience for any target group in any local market. Traditional state-funded universities are welcome as franchisees, but are not allowed to sell competing programmes and degrees. All programmes and educational services are quality assured by the Global Accreditation Foundation (GAF), an independent body located in Washington, Brussels, Sydney, Nairobi, Peking, Singapore and Rio.

Introduction

I am pleased to have this opportunity to address people involved in the management of internationalisation schemes, but I was somewhat hesitant when asked to give this presentation, because I do not consider myself an expert in the field of student mobility, nor an expert on virtual universities or virtual education.

First, one has to ask a few basic questions. What is virtual mobility and virtual education, where does it occur, who participates, how does it work, why could international university collaboration benefit from it, and which instruments are needed to realise the full potential of these virtual phenomena.

"Virtual" is one of the most often used buzzwords associated with the emerging information society, a vision introduced at the G-7 Summit in Naples in July 1994. But the word virtual has not one single precise meaning. A search by means of the extensive "FAST Search Engine" (www.alltheweb.com) on some terms related to virtuality revealed the following number of documents identified: "virtual education": 1,767,804; "virtual university": 1,679,148; "virtual campus": 346,104; "virtual mobility": 65,965, "mobility in higher education": 96,515; "international cooperation in higher education", 86,709.

Virtual Education

Net-based learning could be perceived as the didactical use of information and communication technologies to support individual and collective learning processes, manage learning, provide flexible delivery and more accessible and user-oriented learning experiences, adaptable to different learning situations and learning styles, e.g. campus, home and workplace.

As the results shows, the most common reference is that to "virtual education" – a new form of educational provision and educational practice – different from traditional residential and teacher-centred knowledge transfer, in schools, universities or the workplace. The expression refers to totally new digital learning environments and to the introduction of new forms of learning, centred around the individual learners as the most prominent part in the educational process.

The structure and features of the Internet and the web are also the characteristics of virtual education, virtual institutions and virtual mobility. It is dispersed, it is global, it is networked, it is accessible and it is independent of time and place. Among the important features of virtual education is the use of the Internet as the global information and communication network, with a common interface; the desktop web browser, accessed trough learning portals (URL), the use of learning management systems (LMS) to describe course content, course structure and working methods, to register students,

organise groups and track student performance through online tests, group work assignments, portfolio indexing etc. Under this generic level different types of standard or proprietary applications are used as didactical tools that best suit a specific groups of learners, accommodate appropriate learning strategies and learning activities, such as self expression and inter-activity through writing processes (individual, pair, group), simulations (role play and game participation), and production of electronic presentations/publications, etc. In this context the development of ICT skills has become just as important as the more traditional skills of reading, writing and the use foreign languages.

Virtual Institution

A virtual university could be perceived as an electronic representation of a higher education institution (or networked HED providers), incorporating traditional university features and extending these trough electronic delivery of learning materials, learning activities, tuition, assessment and accreditation, incorporating new learning methods and didactical use of ICT.

There are many types of virtual universities, virtual campuses, virtual organisations and institutions trying to capitalise on the opportunities offered by the Internet.

One type of the institutions in question is exemplified by the example of the Catalan Virtual University (UOC), established in 1995 as an institution without a physical campus and traditional faculty, and based on the extensive use of part-time faculty for courseware development and tutoring. UOC is based on a central operation model, for courseware development, delivery, student support and quality assurance – and the educational programmes are delivered electronically on a virtual campus – with a specific graphic design, metaphors, ergonomics, functionality, content structure, and student support tools, amongst others. This type of institution resembles in many ways traditional distance education or correspondence institutions in the sense that it practises guided independent learning, through electronic course delivery and the use of electronic communication tools.

The second type of a virtual university could be a networked institution like the Norwegian network university *Nettverksuniversitetet*, a loose cooperation of two major Norwegian universities (University of Bergen and Norwegian University for Science and Technology) and seven regional colleges specialised in engineering, teacher training and health care education. The NVU institutions are dual mode institutions, traditional institutions that collaborate in the areas of online education through joint marketing of a web-based learning portal and a common electronic course portfolio on the net (www.nvu.no).

Third, a virtual university could be an incorporated networked university, like the Cardean University in the US, a joint venture between Stanford, the London School of Economics, Carnegie Mellon and Columbia Business School and the University of Chicago. This is an independent business entity based on the reputation, core competency and academic resources of its founding institutions. Cardean operates in a national and global market, primarily for business-oriented education.

Corporate universities are a fourth type of virtual universities, usually based on revamped corporate training divisions which operate as separate business entities within major organisations and multinationals, e.g. McDonald University. Some of these corporate universities see market opportunities outside their own organisations and could easily develop into competitors for more traditional education and training organisations, especially in areas of business-related education and training.

The African Virtual University, to be presented later in this conference, could be considered a mixture between a loose networked university and independent local business units that operate under one brand, and are supported by a central body in charge of infrastructure, financial support, logistics, commissioning, development and marketing of courses to be delivered trough AVU's decentralised site structure.

Fifth, virtual universities could be less formal virtual organisations, semi-stable alliances and temporary task-oriented projects, such as the numerous "would-be virtual universities" as part of loose thematic projects driven by individual entrepreneurs, often with weak institutional backing. These entrepreneurs are usually open-minded and innovative practitioners, in search of new pedagogy, educational models and learning strategies which use ICT. But unfortunately, in some cases these entrepreneurs turn out to be "project riders", mainly driven by "Euro-tourism" and other non-educational benefits offered by a project grant.

Virtual Mobility

Virtual mobility could be perceived as social and transactional relations without face-to-face contact, independent of time and place, and intermediated by electronic media and communication technologies.

The term with the lowest number of search findings (beyond "educational mobility" and "higher education cooperation", which are not combinations of "virtual") was "virtual mobility". Does this mean it is a non-existing phenomenon? Not at all: where there is cross-national educational practice, some sort of virtual mobility always occurs, with relations and transactions intermediated by digital media and information and communication technologies.

In other parts of society, with more developed and structured international cooperation, virtual mobility definitely exists. In the business world, people work together on the same tasks across three time zones, and deliver value-added services to their clients. And in research, groups of researchers often work successfully together across national and cultural boundaries to accomplish common objectives and solve common problems on the basis of jointly developed workplans, milestones and budgets. It is in these areas that the expression “communities of interests” and “communities of professions” have gained most of their meaning.

This seems to be more difficult in higher education, where there are fewer common objectives and tasks to be solved, and where few collaborative programmes exists. The sector is very heterogeneous and dispersed, with a number of microcultures and formal regimes and constrains which prevent people and institutions from working together. In Europe, the Bologna process, with the implementation of a common European degree structure, modularised and credit-based educational programmes as well the introduction of common denominators like ECTS, could help to overcome some constraints, boosting international educational cooperation and thus virtual mobility, e.g. in ways that could offer students the possibility to choose courses and learning modules as well as tutoring and assessment provided by another institution, and have it recognised and accredited by her or his home institution.

I worked for the Education Directorate General of the European Commission between 1997 and 1999. This was during the preparation of a new generation of Community action programmes in the area of education and training referred to as Socrates II and Leonardo II. Despite many discussions on virtual mobility in the preparatory phase, the “new” programmes became more or less replicas of the old ones, with only few specific measures to promote virtual mobility as such, except for the generic focus on the potential of using ICT and new technology in education and training. The reason why no specific “virtual mobility actions” were launched as part of these programmes could be a lack of creativity inside the European Commission, or Member-State conservatism, or the fact that the concept and the models of virtual mobility were still not mature enough to be implemented in these large-scale schemes. But in the next phase, things might change. Indeed, the recent EU “e-learning initiative” and some calls for proposals which focus on virtual education in the university sector are perhaps early signs of a more determined policy in the future.

It is obvious that we need a more precise perception of and a more focused attention to virtual mobility, and better methods, tools and incentives to facilitate it. And we need a more holistic view on virtual mobility, in order to reach the end of strengthening international education cooperation and fostering cross-national educational practice and collaboration. Organisations such as

the Academic Cooperation Association and its member could play an important role in defining meaningful ways of virtual mobility and other forms of cooperation, and incorporating it into existing and future mobility and cooperation programmes.

European initiatives

As already mentioned, the "information society" policy initiative was launched at the G-7 summit in Naples in 1994. It was followed up by a ministerial conference on the same theme in Brussels in February 1995. This conference included discussions on the following three issues: regulatory and competitive frameworks; the development of the infrastructure and access to it; and essential applications as well as social, societal, and cultural aspects. The timing was fortunate, as 1994 was also the year of the first international WWW conference at CERN, the birthplace of the web and of the Internet as we know it today. Since 1994, the technological developments, market developments and policy developments have run rather in parallel.

The EU is one of the key promoters of the information society (IS) vision. It has created IS focal points in most community action programmes, and specific programmes and initiatives such as the information society technology part of the 5th Framework Programme for Research and Development, or the "Information Society Promotion Office" (ISPO). After seven years of existence, the IS initiative has been succeeded by the so-called "e-Europe initiative" launched at the 2000 European Summit in Lisbon. The objective of this initiative is to promote the up-take of technology through a cheaper, faster, and more secure Internet, through investing in people and skills and through the stimulation of the use of the Internet through e-commerce, e-content, and public online services, including e-learning. The "e-Europe" plan is also a benchmarking exercise, which is being underpinned by national plans.

The "e-learning initiative", which constitutes an integrated part of "e-Europe", has the objective to improve bandwidth and create Internet access for all, to improve equipment levels for schools, and to encourage the creation a trans-European high-speed network for communication between research institutes, universities, scientific libraries, schools, learning centres, museums and other entities. The plan also focuses on skills development and training at all levels, notably in use of the Internet and multimedia resources for improving qualifications relevant for the labour market. A recent call for proposals following up the "e-learning action plan" focuses on innovative practice and concepts for virtual universities, virtual campuses and virtual mobility.

In many ways the "information society" and "e-Europe" initiatives pursue the same political priorities – to encourage competitiveness, innovation and structural change – and are based on the simple assumption that those who dominate the information society and e-economy will also dominate the world economy, just as those who in earlier days dominated the seas also

dominated world trade. One could argue that the “e-Europe initiative” is the same as the “IS initiative”, and thus old wine on new bottles. But old wine is supposed to be good wine (at least expensive), so let us hope there will be additional value springing from “e-Europe” and the “e-learning initiative”. In any case, we must acknowledge that today we are closer to the information society than we were in 1994, as the result of tremendous technological developments and the emergence of new services and business models. These changes have come about predominantly in the private-market sector of society, for example the corporate training field, which operates partly on both national and international markets, and less in regulated areas such as in basic and higher education and the public service in general.

But the “e-Europe” initiative can easily become too instrumental, with too much focus on infrastructure and connectivity, and with rather limited effects, as the take-up exercise extends far beyond technology and IT applications. Educational provision can become a commodity subject to transactions by means of IT technology and new media, but learning in itself will newer become a commodity. Individual and collaborative learning processes – knowledge production, skills development and cognitive change as the final results of learning – will always be the result of hard work, either conducted at home, in a classroom on campus or on the net within a digital learning environment. Unless technology provides solutions for human demands and caters for social and cultural needs which benefit citizens in their day-to-day life and working environment, e-learning will never take off. Therefore pedagogical, conceptual, organisational, social, cultural and transactional issues deriving from the educational sector itself will be of tremendous importance, and educators themselves have to play a more active role.

In search of conceptual middleware

IT terminology uses the expression “middleware” to describe software that enables different systems, applications and databases to work together. I believe that we also need a middleware to facilitate virtual education and virtual mobility, i.e. some sort of political and organisational initiative and framework that allows the heterogeneous educational sector to work together. This middleware could be the glue that binds together top-down policy initiatives like the “e-Europe” and “e-learning initiative” and the many innovative bottom-up projects supported by programmes such as Socrates and Leonardo da Vinci. A “virtual Erasmus” mobility scheme could be such an initiative. I hope that the European Commission will seriously consider this option, as it should look at the possibility of a “European Virtual University Gateway” (EVU), a catalogue service labelling electronic courses and modules offered across borders to students and institutions. In other words: a window on the evolving e-learning in Europe. This could very well be linked up to national initiatives and be in many ways designed similarly to the “European Schoolnet” (EUN) in the areas of primary and secondary education.

The Erasmus programme, named after the renaissance scholar Erasmus of Rotterdam, is one of the most successful and extensive mobility programmes around, with about 100,000 mobile students a year, each staying for an average of five to six months at a university in another country. The ambition of the EU is that one out of 10 students should spend a part of their studies at a foreign institution during their studies. In 2000, less than three percent of all students participated in the Erasmus scheme, and there is a discrepancy between available places and the number of students participating in the programme. The constraints for an expansion of physical mobility are probably the additional costs of study abroad, as the Erasmus grants are very modest, and students have to find additional sources of support to be able to take part in the programme. And why bother to go abroad when you can access foreign programmes at your convenience through your own laptop?

The core of historical mobility was of course the “travel” and the “encounter” between scholars and students of different cultures, and the “cultural experience” gained through visiting other regions and learning institutions. In other words: a total learning experience. Both old time “barefoot mobility” and modern “flight destination mobility” provide students with a total learning experience, which includes both formal and non-formal elements, language, culture, gastronomy, and whatever else. This cannot be substituted by virtual mobility, but virtual mobility can provide a different total learning experience of just as high an educational and social value, due to the collaborative working procedures involved, which result in different skills (ICT, languages and inter-cultural skills), and which create and sustain relations (both between people and between institutions).

Final remarks

Universities are important parts of the social and cultural fabric of our society, fora for study, reflection, discourse, and the creation, dissemination and validation of knowledge. These tasks remain important, and universities will fulfil them as part of their historical mission. But there might be different types of universities in the future, and universities will not be the sole players either. New actors will appear who will exploit the global presence of the Internet. Therefore, traditional universities need to consolidate and refocus their educational practice. They need a common window on the evolving e-learning, to stimulate the exchange of competency, resources, models and experiences and benefit from phenomena such as virtual mobility. We have the toolsets, but we need the mindsets (of concepts, models, attention and support mechanisms, including political and institutional backing) in order to be able to make maximum use of the potential of virtual mobility for international cooperation in higher education. (Even today’s WWW started off as a simple and basic concept at a drawing table of CERN.)

And we have to reach a shared understanding of the basic principles and mechanisms of virtual mobility. We have to support it and make it sustain-

able. Not as an individual, but as an institutional and formalised adventure. Personally, I would like to see the 100,000 Erasmus students as ambassadors of virtual education and e-learning, through shorter and more intensive stays abroad. Visits that could facilitate an introduction into subject areas and course content, associated working methods and tools and establish the necessary social relations and cultural references needed for continuous collaboration over the net between peers, teachers and tutors. Universities would need to collaborate on curriculum design, courseware development and exchange of course modules. Modules that would be assessed, adopted and accredited by the individual sending institutions. This would require new (or additional) funding schemes targeting not only students, but catering also for more extensive collaboration between institutions and faculties. These could be based on the twinning of institutions or on broader cooperation agreements between institutions in different countries: agreements on joint description of learning objectives and course content, online provision and working methods, as well as models of assessment, recognition and accreditation of modules between institutions, amongst others. Universities could in this way share specialisation and scarce competency and improve the general quality of their education. They could become attractive players on the 6th continent, the virtual one.

I would advise that ACA member organisations create together working groups to address the above issues, as future developments in the areas of cross-boarder education will be based on virtual mobility and virtual educational provision, and therefore affect the core business of ACA members, as well as their clients. ACA could have an important impact on future developments in this area. Let us hope that this conference will be the point of departure for an interesting working process within ACA and beyond. With reference to the parallel story and my private future preview, I would like to see...

Imagine Global U2

Global U2 is a distributed and networked group of collaborating universities across the globe. Their mission is to provide the best and most cost-effective learning experience for any target group anywhere at any time...

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Quality assurance and accreditation for virtual education: A discussion of models and needs

Introduction

Some hail "virtual education" as a new paradigm, others more cautiously view it as another mode of learning in a continuum of possible approaches. In either case, the issue of quality is at the forefront of debates. Is the quality of virtual education the same as that of "on-campus" or "in-classroom" learning? Should the quality be the same or different from "traditional" approaches to education? How can the quality of virtual education be assured whenever and wherever it is delivered?

Quality assurance for virtual education is the subject of this paper. The paper is divided into six sections and begins by illustrating the context in which virtual education is being used, drawing on the findings of recent research into the related territory of "borderless education"[1]. The quality assurance issues that are of concern at national and institutional levels are highlighted in the second section. The third section illustrates some of the ways in which virtual education raises specific issues of quality and quality assurance, before discussing the particular quality assurance needs of different groups of stakeholders in the fourth section. The fifth part examines different models of quality assurance and compares strategies adopted in higher education and in commercial sectors. The last section describes a number of quality assurance initiatives in different parts of the world and then grounds these by drawing on some practical lessons learned in the course of delivering virtual education programmes.

Context and terminology in virtual education

In describing the drivers of virtual education, many political, economic and technological trends are evident. Recent reports draw attention to globalisation, the growth of knowledge-driven economies and lifelong learning agendas, advances in the use of communication and information technologies (ICT) and pressures to extend access to tertiary education to greater num-

1 Three recent studies have addressed the topic of 'borderless education'. The first was an Australian project: Cunningham S et al (1998) *New Media and Borderless Education: A Review of the Convergence between Global Media Networks and Higher Education Provision*, Canberra, DEETYA. The other two projects, one in the UK and one in Australia, ran in parallel. CVCP (2000) *The Business of Borderless Education: UK Perspectives*, London, CVCP and Cunningham S et al (2000) *The Business of Borderless Education*, Canberra, DEETYA

bers of people. These drivers are also relevant to the wider concept of "borderless education", a concept that denotes forms of education that cut across traditional boundaries. Such boundaries include sectoral boundaries (education and industry), levels of education (further and higher), national borders, boundaries between public and private education as well as the boundaries of time and space that are crossed in virtual education. As these traditional boundaries are traversed, new providers and forms of provision are emerging that are changing our educational map of the world. These new forms are visible both within and outside the higher education sector although the boundaries between the two are also becoming increasingly blurred.

Outside the traditional terrain of higher education institutions, providers of new educational products include corporate universities, for-profit education businesses, media and publishing companies, educational brokers and educational service companies. All of these players have a contribution to make in virtual education and many see such education as a source of revenue, a market opportunity and a new medium for the delivery of traditional products and services. At the same time, higher education institutions themselves are changing their approaches to the design and delivery of education. They are building partnerships with corporations, developing regional and international consortia, or joining multi-agency partnerships. Virtual education is also a central part of the changing delivery approaches in the higher education sector.

The term "virtual education" within higher education covers many different kinds of initiative. First, there are a few "virtual universities" which claim to undertake all their operations online, from student admissions to teaching, learning and assessment. Jones International University (US-based) and the International Management Centres' Association (UK based), are two such institutions. The second group consists of the traditional distance education providers amongst which are some of the world's largest mega-universities[2]. Distance educators are moving towards virtual education as another delivery strategy in the range of media they use for educating students at-a-distance. The third group is made up of "traditional" higher education institutions that are increasingly operating as "dual-mode" institutions[3]. This may mean that they are enhancing their existing provision by the use of some "virtual" activities or that they are extending their range of products and services by offering programmes online in addition to their on-campus offerings.

Three other kinds of initiative are evident. Within the growing range of consortia, some are being created in order to offer virtual educational opportunities collectively. This kind of initiative, for example, forms part of the Worldwide Universities' Network (of five American and six British universities) and

2 See Daniel J (1996) *Mega-Universities and Knowledge Media: Technology Strategies for Higher Education,* London, Kogan Page

3 See Tait A & Mills R (ed) (1999) *The Convergence of Distance and Conventional Education*, London, Routledge

the Global University Alliance (nine universities on four continents). “Virtual projects” are another form of initiative, visible at many levels from institutional to national. At the institutional level, “virtual campuses” are being developed as the basis for managed learning environments (MLEs). At regional levels, virtual projects may link a number of institutions, particularly in remote regions. Examples include the University of the Arctic which links universities in Russia, Scandinavia, Finland, and North America and the University of the Highlands and Islands Project that links a number of further education colleges in remote parts of Scotland. At national level, a growing number of virtual universities are being planned, for example, the Finnish Virtual University and Virtual Polytechnic, the Canadian Virtual University (linking seven institutions), and the UK’s e-university, the holding company of which will include more than 165 universities. In addition to these virtual projects a range of networks exists to support the development of virtual education. They include the International Council for Open and Distance Education and the European Distance Education Network to name only two of a much larger number of groups and associations. As a sub-set of the complex “borderless” world, virtual education is itself developing into a complex tapestry.

Quality assurance issues for governments, national agencies and institutions

“Borderless education”, as mentioned earlier, crosses several boundaries. The crossing of these boundaries gives rise to particular quality assurance challenges. Governments, higher education agencies and institutions are challenged by the crossing of national borders in trans-national education, the crossing of organisational borders in consortia-based education, the crossing of sectoral boundaries in new educational alliances between universities and businesses and the crossing of functional boundaries made possible by developments in ICT. Virtual education can cross all these boundaries simultaneously which means that a variety of quality assurance issues need to be addressed. The challenges to quality assurance arise in part because the definitions of quality that we routinely use and the attendant quality assurance arrangements have been defined in the context of traditional categories, that is, national systems of higher education, individual institutions, higher education sectors and a seamless educational process. The emerging categories that are associated with “borderless” and virtual education suggest a need for some redefinition of “quality” and quality assurance arrangements.

It is already clear that governments and national agencies are exercised by issues of definition and categorisation. Different countries are, for example, reviewing legislation on the title, rights and responsibilities of universities (eg New Zealand) and are designing accreditation systems for private institutions (eg South Africa)[4]. Other countries are changing their national regulations

4 See CVCP report op cit

with regard to distance education. The Japanese Ministry of Education, Science and Technology is allowing universities to grant credit for online courses but is setting specific rules for such courses. Argentina and Chile have put all distance education offered in their countries under the purview of their national accrediting agencies, while India is likely to require all foreign universities offering distance education to register with the government[5]. Other quality assurance issues that are being tackled at national level include customs and visa regulations for trans-national students, telecommunications' regulations and pricing controls, intellectual property rights (IPR) for virtual courses, recognition and licensing arrangements for providers, arrangements and regulations for the transfer of educational credit and methods of controlling fraudulent providers.

Quality assurance issues also arise at the institutional level and involve legal, technical and academic dimensions. For example, institutions need to establish clear conventions and memoranda of agreement between the potentially different parties involved in creating and delivering virtual education programmes. Institutions must be clear about who the responsible agents are for each part of the educational process and how accountability will be achieved. They must indicate how students, as consumers of education, will be protected and how they can gain redress in the event of technical or academic problems, particularly those that arise in other jurisdictions. Technical issues involve the inter-operability of different ICT systems as well as levels of technical support for staff and students. Academic and educational quality issues include the ways in which and the terms on which curricula are approved and reviewed, how student learning and progression is mapped, tracked and recorded and how quality is measured across different educational cultures.

Quality assurance issues in virtual education

A number of quality assurance dilemmas are common to transnational, distance and virtual education. The first set of dilemmas concerns homogeneity versus heterogeneity. For example, should curricula be standardised for mass markets or customised for particular markets, with all the attendant costs of such customisation? Should quality principles be absolute, implying international agreements about common conventions, or should these principles be relative, suggesting mutual acceptance of equivalence and compatability rather than convergence or standardisation? Similarly, should quality assurance arrangements be rigid or flexible?

The second set of dilemmas raises cultural issues. Is quality to be measured in relation to the creation of dependent or independent learners, can judge-

5 British Council (2001) *The International Market for UK Distance Learning: report of a research project on the market in ten countries*, London, British Council

ments of quality be largely tacit, based on professional judgements and peer review or should they be explicit, based on transparent criteria and more open reporting arrangements? Virtual education allows a great deal more information to be collected and revealed and this may reduce the need for peer-review systems. And finally, what are the quality dilemmas that arise when virtual education is delivered in a competitive, for-profit context rather than a collaborative, public-good context? These issues are taxing institutions and governments both at a philosophical and a practical level as education becomes increasingly global and as the interests and motivations of providers become more varied and complex.

Virtual education is different from face-to-face modes in ways that raise particular quality assurance issues or requirements. The use of ICT and the potential to cross boundaries means that more agents and stakeholders may be involved in delivering or reviewing the education. Programmes of different length and shape may be offered in different sites and involve a range of choices about curricula and delivery media. Such variety adds complexity in relation to QA arrangements. Virtual education also calls for specialist skills and roles, implying new kinds of staff or a need for more training and development as well as more and different levels of technical and academic support for staff and students.

Achieving consistency of curricula and QA systems (across countries or for large numbers of learners) requires deliberate planning and management; the traditional “cottage industry” approach to the development and delivery of academic programmes will not achieve adequate levels of consistency of provision or service. As mentioned above, it is possible to have considerably greater transparency in relation to quality and standards in virtual education since teaching and learning processes can be tracked, recorded and measured, both in relation to each other and independently. ICT developments are also increasing the range of teaching and learning media available and the ways in which they can be used; this is leading to potentially significant changes in conceptions of “teaching” and “learning” which may also fundamentally alter concepts of quality and quality assurance.

Stakeholder needs and purposes

Given these differences in virtual education and their likely impact on judgements of what counts as quality, it is important to assess the needs and purposes of quality assurance for three particular groups of stakeholders: students, faculty, and partnerships between institutions or between institutions and companies.

Students are seeking assurance in relation to the reputation and reliability of providers as well as guarantees that their awards will be recognised by governments, professional associations and employers. They are also seeking curricular choice, flexibility, relevance and stimulation, all of which have

implications for the quality and variety of curriculum design. They also seek accessibility in their choice of education to match their own levels of resource and skills. They are likely to need on-demand technical and academic support and providers and their agents will need to take full account of the special needs of particular groups of students.

The faculty has different concerns in relation to quality. They are aware of the costs (and investment) needed for virtual education in terms of time for development and renewal of programmes, and online support for students. Virtual education also requires new skills and roles for staff, possibly linked to new contracts and reward systems. Staff have a requirement for on-going technical support and will also have concerns about ownership and copyright of materials used within virtual education programmes.

The quality assurance concerns of institutions and companies are also important as they choose partners and create joint ventures for the design, development and delivery of virtual education. Partners will have an interest in brand and reputation and the quality of programme content. Companies will want to be assured of the creativity of universities in creating customised content. They will also be interested in the university's ability to work globally and enter new markets and the quality of service offered in terms of customer focus, flexibility and responsiveness. Being able to offer and quality assure a variety of delivery modes, being able to create and deliver programmes quickly, and being competitive in terms of price are further quality issues for strategic partnerships.

Quality assurance models and strategies

Quality assurance models

Quality assurance approaches can loosely be divided into two dimensions (see figure 1): market-state and internal-external, with different systems occupying different places in the resulting four-quadrant model.

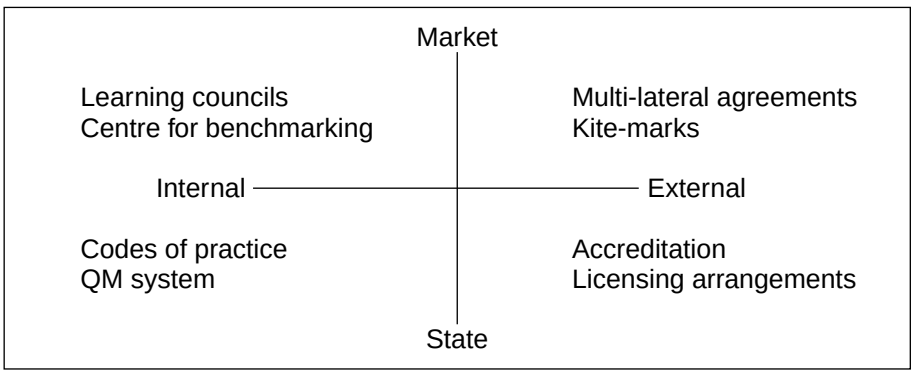

Figure 1: Common dimensions of quality assurance systems

If we look at the market-external quadrant, quality assurance arrangements might include formal multi-lateral agreements between institutions and companies or between institutions in consortia, and perhaps external kite-marks for particular functions (such as kite-marks for learning centres or learner support arrangements). The state-external quadrant will contain other strategies such as accreditation, licensing or external peer- review systems. Within the internal-state quadrant, quality assurance arrangements might include codes of practice and quality management systems while in the internal-market quadrant, learning councils and centres for benchmarking and best practice may be more common.

Within the external-market quadrant, the external kite-mark approach offered, for example, by the British Association for Open Learning (BAOL) is a means of quality assuring distinct educational functions. The criteria used to assess quality (through a self-assessment and external review process) are taken from the "Business Excellence Model" developed by the European Foundation for Quality Management. The assessment criteria include: policy and strategy for open learning, people management and resources, processes, customer satisfaction, people satisfaction, impact on open learning and results. The quality marks developed to date cover materials development, advice and guidance, learner support and learning centres. When a full range of kite-marks has been developed, this approach may prove useful for dealing with the "disaggregation of function" that is evident among virtual education providers such as UNext.com or NextEd.

Quality assurance strategies

In Table 1, a comparison is made between three sets of internal quality assurance functions that together add up to an internal QA system. The first set is typical of established universities, the second is taken from an educational broker organisation, the Western Governors University[6], and the third from a group of corporate universities[7].

6 Phipps R, Wellman J & Merisotis J (1998) *Assuring Quality in Distance Learning: A Preliminary Review*, Washington DC, Council for Higher Education Accreditation

7 Corporate Leadership Council (1999) *Structures and Strategies of Corporate Virtual Universities* (unpublished research report)

Established universities: faculty functions	Western Governors University	Corporate universities
Curriculum design and oversight	WGU programme councils	Learning councils: standards and innovation, personal development planning, alignment with business needs
Instructional delivery	Education providers	Faculty of learning: technical support, measurement and standards
Student guidance	WGU	Learning resource centres
Assessment of student performance	WGU assessment council	Learning councils/ learning faculty
Academic planning and co-ordination	WGU associate academic officers	Chief learning officer and deans

Table 1: Comparison of QA functions in three organisational settings

If we compare some of the quality strategies used in virtual education by existing universities and by companies, differences in emphasis are evident. An important input measure for universities are faculty credentials, selection and training. For companies, selection and training (for curriculum design, delivery and assessment) are also important, but the key focus will be alignment with business needs and priorities. The judgements of practitioners rather than academic faculty will therefore be paramount.

In the delivery of a curriculum, universities place a lot of emphasis on "time-on-task" measures, that is the time spent by students in classes (number of hours), their years of study and the length of assessments. Companies place more emphasis on outcomes and the creation of a productive learning environment. Both groups emphasise student support services and information for students; in the virtual education context, high levels of technical support are as important as "content-support". Finally, universities focus on assessing the goals and outcomes of learning particularly in terms of assessing knowledge and understanding while companies are likely to concentrate more on applied outcomes and comparative metrics. These differences of emphasis in terms of aspects of quality are reflected in the different quality assurance arrangements described in table 1 above.

Quality assurance initiatives and practicalities in virtual education

Quality assurance initiatives

Across the world, national quality agencies, institutions and governments are seeking to address the quality assurance challenges posed by virtual education, particularly as it crosses traditional boundaries. A number of initiatives are evident. In the US, the National Education Association in collaboration with Blackboard Inc. has recently produced a set of benchmarks for internet-based distance education prepared for them by the Institute for Higher Education Policy[8]. Still more recently, eight regional accrediting commissions in the US collaborated to produce a set of guidelines for electronically offered degree and certificate programmes[9]. Neither of these have the force of law, but they do provide useful guidance.

Other countries are also offering guidance. In the UK, the Quality Assurance Agency has issued guidelines and in New Zealand, the Academic Audit Unit has produced a QA document that is part-way between an accreditation manual and a guide for external reviewers of virtual education.[10] There have been other initiatives in Europe. For example, the European National Quality Agencies (ENQA) recently commissioned a project to develop a typology of new providers and provision highlighting the quality assurance implications associated with them (to be published in 2001); and EuroPace funded a project under the European Community's Socrates programme (1999) to develop a web-based course on "Quality Assurance in Open and Distance Learning"[11].

The various QA guidance documents concentrate on a number of common aspects. First, the regulatory context for design and delivery of programmes must be addressed, with attention to security, privacy and ethics. The institutional context is usually the second area of attention, in terms of mission, goals and infrastructure. Course structure, development and content are of central importance, along with student information, counselling and support. Support for faculty is also a key element. Assessment and learning outcomes feature in all documents, particularly in terms of security and educational effectiveness. Finally, monitoring and review systems are required. While all these aspects of provision and focus for quality assurance are also relevant in face-to-face delivery, the elements of guidance under each topic

8 National Education Association (2000) 'Quality on the Line: Benchmarks for Success in Internet-Based Distance education', Washington DC, National Education Association and Blackboard Inc. (www.ichep.com/PR17.html)

9 Regional Accrediting Commissions (2001) 'Best Practices for Electronically Offered Degree and Certificate Programs'. (www.wiche.edu/telecom/)

10 QAA (1999) 'Guidelines on the Quality assurance of Distance Learning', Gloucester, QAA and NZAAU (1999) 'External Quality Assurance for the Virtual Institution', AAU Series on Quality: Number 4, Wellington, New Zealand Academic Audit Unit

11 EuroPace (1999) 'Quality Assurance in Open and Distance Learning: Web-based Pilot Course', http://projects.europace.be/quality/

are specific to virtual education. However, the form of virtual education that is not addressed in these documents (apart from the ENQA typology) is the issue of multiple agencies sharing educational functions across a consortium. The "kite-marking" approach described above would seem to be the most appropriate form of quality assurance for multi-agent educational operations.

Lessons from practice

The previous section highlighted a number of formal quality assurance initiatives. At this relatively early stage in the development and use of virtual education, it is also valuable to turn to the experience of practitioners. The distance education universities have particularly useful experience to share and the UK's Open University is a leader in the field. Drawing on experience from several programmes, Professor Laurillard offers some practical guidance[12]. She draws attention to students' academic needs and argues that there should be a balance between online and offline learning. This balance needs to be struck in several areas. First, the author highlights collaborative learning as an area requiring careful structure. Designing small group work is useful at the beginning of a course, but needs to be reduced towards the end, as students become more independent. Second, she notes that even when students enjoy working online, they still print a large proportion of the online material. This suggests that balance is also needed in relation to the form of learning resources. Third, Laurillard draws attention to the time that students spend on ICT materials, noting from evaluation studies that this may be up to 40% more than the allotted time. The lesson is to avoid the temptation of giving students too much material.

From the evaluation studies undertaken by the Open University, Laurillard concludes with a number of key messages for those who are developing institutional strategies for virtual education. These messages help to ground the formal QA guidance described earlier:

- Choose appropriate media and offer balance in their use;
- Carefully time the provision of guidance to students, the level of skills development and amount and positioning of interactivity in a course;
- Manage the quality of interactive learning;
- Plan student and staff work-loads carefully;
- Provide a high level of support;
- Allocate more time for research and development and for innovation in teaching because of the complexity and expense of virtual education;
- Develop effective quality assurance mechanisms that will regularly provide feedback, and take action on the results of evaluation studies.

12 Laurillard, D (2000) 'The E-University: What have we learned?' in *The International Journal of Management Education*, 3-7

Conclusions

The quality assurance strategies that are appropriate for virtual education share common features with other forms of media, but there are also differences. The range and flexibility of information and communications technologies create new opportunities, but also give rise to complexities and challenges for governments, agencies, institutions and faculty. As virtual education spreads, both as a means of enhancing local learning and as an opportunity to reach out to new communities, it will be important to capture the lessons of experience learned at all levels. This implies a need both for quality enhancement strategies, in the form of research, development and evaluation studies and for quality assurance strategies that focus on regulation, guidance and review. National and international agencies can play a key part in ensuring that relevant studies are undertaken, that learning is shared and subsequently codified into guidance and quality assurance arrangements.

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Towards learning in the virtual university

All of the Nordic countries have developed national virtual university projects (Finland: www.virtuaaliyliopisto.fi; Denmark: www.uvm.dk; Norway: www.nvu.no). Sweden is now creating a new university consortium led by Lund University, and Iceland has also been actively involved in virtual university experiments. However, all of these projects remain within a national frame of reference. There is a need for a more global perspective.

Effective learning requires upgraded multimedia educational materials, preferably distributed using broadband Internet applications. Current thinking has it that the use of these applications for global e-learning and telehealth/telemedicine must be efficient and cost-effective, enabling education institutions to foster global citizenship and achieve "education and healthcare for all" at any time, anywhere and at any pace. We believe that the Internet will be the tomorrow's main telecommunication medium. Broadband Internet holds a great promise for improving multimedia e-learning and telehealthcare capabilities on a global scale, especially in rural and isolated areas not well served by commercial network providers.

A true revolution in e-learning and telemedicine requires high-speed access to the World Wide Web, and the flexibility to offer a variety of media. These might include two-way audio, full-motion video-conferencing up to MPEG2 quality, television-quality netcasting, and high-resolution image transfer for telemedicine. Such capabilities require medium to broad bandwidth. Developing countries need broadband Internet via international satellite and fibre-optic cable. The objective of increasing the quality of audio/video delivery, high interactivity, and system throughput can be seen as a global objective of closing the digital divide for improving e-learning and telehealth services (Utsumi, Varis, Knight, Method, Pelton 2001, pp.4-8).

The European E-Learning Summit Declaration of May 2001 noted that Europe is rightly proud of its predominantly public sector education provision and comparatively high education standards. Nevertheless, major challenges remain. The overarching issue is the need to accelerate the speed of pedagogical and institutional change – many aspects of European education systems need to be re-evaluated. The declaration recommended, among other things, that Europe should follow a policy of developing an e-learning infrastructure and digital content based on open standards and proven interoperability (www.ibmweblectureservices.com/eu/elearningsummit).

At the same time, a new challenge came from the Massachusetts Institute of Technology, which announced a 10-year initiative aiming to create public

websites for almost all of its 2,000 courses, and to post materials like lecture notes, problem sets, syllabi, exams, simulations, and even video lectures. Faculty participation will be voluntary, but the university commits itself to post sites for all its courses. The issue of intellectual property surfaced little during faculty discussion of the initiative. Universities have been offering distance learning courses off-campus while on-campus courses have also been developed for websites. But those are generally only for internal use, while the MIT initiative aims at larger use (*International Herald Tribune*, April 5, 2001).

A recent survey carried out for the Institute of International Education in New York found that higher education has profoundly changed in the past two decades, and that those involved in the academic enterprise have yet to grapple with the implications of these changes. Academic institutions worldwide stem from common historical roots and face common contemporary challenges. While it may not yet be possible to think of higher education as a global system, there is considerable convergence among the world's universities and higher education systems. The medieval European historical origin of most of the world's universities provides a common antecedent. Academic institutions have been international in orientation with common curricular elements and also with a common language (Latin in medieval times, predominantly English today, especially on the Internet). Technology has made the distance education revolution possible, which has important implications for the accreditation of education institutions and quality assurance (Altbach, Davis 1999, pp.3-10).

The strategic goal for Europe, set by the 2000 Lisbon Council, is to become "the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion." It is the European response to US strategic programmes such as the National Information Infrastructure (NII), and the Global Information Infrastructure (GII) (http://nii.nist.gov/nii/niiinfo.html).

In his epilogue on "Education for a multicultural world" to the International Commission on Education for the Twenty-First Century published by UNESCO in 1996, Rodolfo Stavenhagen pointed out that most modern nation-states are organised on the assumption that they are, or should be, culturally homogeneous. This is the essence of modern "nationhood", upon which contemporary statehood and citizenship are founded. But a truly multicultural education will be one that can address simultaneously the requirements of global and national integration, and the specific needs of particular culturally distinct communities, both in rural and urban settings (Stavenhagen 1996, pp.230-231). The Global University System (GUS) is adopting philosophies and principles that emphasise transcultural and moral values rather than ideologies. The priority is on academic freedom and quality in education (Utsumi, Varis, Knight, Method, Pelton 2001).

Already in 1923, Albert Schweitzer wrote about the tragedy of the Western world-view. In his view our philosophy did nothing more than produce again and again unstable fragments of the serviceable outlook on life which hovered before its mind's eye. As a consequence, our civilisation remained fragmentary and insecure. Our philosophising became less and less relevant, loosing connection with the elementary questions of life and the world. More and more, it found satisfaction dealing with merely academic questions, and in the mastery of philosophical technique. It became more and more the captive of secondary things (Schweitzer 1967, pp.5-6).

Therefore, a demand for a new renaissance in education emerged in Europe and the United States. It would combine science and technology with the arts, humanities and religion. In addition to this, new media and digital literacy are needed (Varis 2000a).

According to the Parliamentary Assembly of the Council of Europe, there is a need for promoting media education in order to create a critical and discerning attitude towards the media and to form citizens who can make their own judgements on the basis of the information available. Media education should target children, parents and teachers and should be a lifelong process which requires a co-ordinated approach, also involving non-governmental organisations and media professionals. (Parliamentary Assembly, Council of Europe, Doc. 8753, 6 June 2000).

Different terms are being used in different countries to refer to media education and media literacy. While the educational approaches are discussed in some countries under the title "media pedagogy", and traditional literacy is being extended to include "media literacy", "digital literacy", "technological literacy", "visual literacy", "cultural literacy" etc., a broader approach has been developed under the title "media competence". "Digital literacy" is the ability to understand and use information in multiple formats from a wide range of sources presented via computers (Gilster 1997).

We are facing a third major educational invention in technology. The first was the phonetic alphabet, the second printing. The third one is telematics, i.e. computers connected to networks. These changes were behind the ten recommendations of the European E-learning Summit in 2001. The idea is to remove barriers to access and connectivity, support professional development, accelerate e-learning innovation and content development, address the ICT skills shortage, promote digital literacy and lifelong learning, and explore sustainable public-private partnerships (www.ibmweblectureservices.com/eu/elearningsummit).

Current research on media concentrates very much on the so-called new media. For example, the digitalisation and convergence of telecommunication, computer and media have created an entirely new "grey area" or "media gap", with new media falling neither into the category of the traditional mass

medium, nor the private medium. The distinction between public and private is being undermined as access and delivery of digital network media becomes available to small audiences.

The tools to amplify the mind include artificial development of sound, vision, and touch. In sound, virtual worlds can include three-dimensional sound that appears to come from different specific locations. In vision, computer-generated worlds need to move with the speed of live action, so that viewers perceive what they see as real. In touch, gloves or entire body suits armed with sensors, let a participant communicate with the computer and direct objects in virtual space by gestures.

An important research area deals directly with the human brain and behaviour. It is expected to shape and design computer-generated worlds so that the information can be presented in such a manner that it can be absorbed and manipulated more easily and quickly. For example, it is known that the human mind is genetically programmed to pick up certain visual cues. This helps researchers design better computer icons.

One of the most challenging areas for e-learning, virtual classrooms and universities is the creation of telepresence. The key to defining virtual reality in terms of human experience rather than technological hardware is the concept of presence. Presence can be thought of as the experience of one's physical environment – it is defined as the sense of being in an environment. The term telepresence can be used to refer to the extent to which one feels present in the mediated environment, rather than in the immediate physical environment. Telepresence is defined as the experience of presence in an environment by means of a communication medium. In other words, presence refers to the natural perception of an environment, and telepresence refers to the mediated perception of an environment (Steuer 1995, pp. 35-36).

The American Professor W. James Potter (1998, pp. 4-12) has formulated the fundamental ideas behind the definition of media literacy in the following five principles:

- Media literacy is a continuum, not a category. There are degrees in this continuum and we all occupy some position on the media literacy continuum. There is no point below which we could say that someone has no literacy, and there is no point at the high end where we can say that someone is fully literate, because there is always room for improvement.
- Media literacy needs to be developed. Some of this change occurs through a process of masturbation, and some of it can only be accomplished by conscious practice. We also mature emotionally and morally. As we reach higher levels of maturation intellectually, emotionally, and morally we are able to perceive more in the media messages. If we are passive, we can still pick up a good deal of information in our media saturated culture, but that information will be neither balanced nor com-

plete. People operating at the lowest levels of media literacy are in a relatively mindless state during exposure in the sense that they are not concentrating on the messages, nor are they actively thinking about the meaning of those messages. People operating at a slightly higher level of media literacy are often active in processing messages and constructing their own interpretations. People operating at high levels of media literacy are mindful during exposure.

- Media literacy is multidimensional including cognitive, emotional, aesthetic, and moral dimensions. According to Potter, someone who is highly media literate realizes that there is a synergy among the four; that is, developing to a very high level on one usually requires significant development on the other three. The cognitive domain refers to mental processes and thinking. This is the intellectual dimension. The emotional domain is the dimension of feeling. Emotions need not be only strong ones like rage, fear and hate; there are also more subtle emotions, such as ambivalence, confusion, wariness, etc. The aesthetic domain refers to the ability to enjoy, understand, and appreciate media content from an artistic point of view. The moral domain refers to the ability to infer the values underlying the messages. It takes a highly media-literate person to perceive moral themes well. As is the case in other dimensions, this is also a continuum.

- The purpose of media literacy is to give us more control over interpretations, because all media messages are interpretations.

The question of cultural, local, regional and European identities in media, learning and education are becoming central for national and European strategies. The goal is competency in communication and media with the new information infrastuctures on a pan-European level. This competency includes using modes of thought characteristic of the major areas of thought and knowledge and a knowledge of our basic cultural heritage. Concepts like “collaboration” or “asynchronous education” reflect the necessities of the evolution of society, rather than purely educational argumentation.

A whole range of competencies are required in e-learning. The basic question is which knowledge and skills will enable people to do human resource development work? For this, several general competencies are needed – among them communication and media competencies. But in addition, management competencies, distribution method competencies, and presentation method competencies are also necessary (http://www.learningcircuits.org/2001/nar2001/competencies.html)

These goals can well be compared with the goals of media education and media literacy in general. There are, however, some threats and challenges at the international level, identified, for example, by the UNESCO World Conference of Higher Education in 1998 (Unesco 1998). These are:

- Risk of the hegemony of one single language to the detriment of multilingualism;
- Risk of the hegemony of one single culture to the detriment of plurality;
- Future lecture rooms: the challenge of digital sites, virtual seats of learning;
- Teachers become the mediators of knowledge;
- Communication between different disciplines (inter- and transdisciplinary) and two cultures (natural science and humanities), new renaissance;
- Communication between different social institutions (universities, media, church);
- Communication between different generations.

Education today means a global challenge and dialogue between civilisations, old and new. Furthermore, it is more and more an open, lifelong learning process for all. There may be a technologically integrated world, but with too much of a digital divide and with conflicts of values.

Transnational education is not necessarily international in the sense that this term has been used before in the context of international education. Courses and learning materials and environment are simply offered beyond national borders. However, a university is more than a library of courses. It is still the college and the professional faculty who can give the quality guarantee to credits and credentials, degrees and diplomas. Governments will have their responsibility in quality assurance especially in courses delivered from foreign non-accredited institutions.

Quality assurance in virtual education can follow external and internal models. The external models include multi-lateral agreements, accreditation, licensing, kite-marks, and consortia arrangements. The internal models include codes of practice and quality, and management systems. The assessment of online universities is often accompanied by three principles. First, the institution must demonstrate how it will achieve its goals, particularly student learning goals, and maintain high standards of quality in doing so. Goals must be stated which are specific and assessable. Second, the assessment should provide assurance that standards of quality are successfully maintained at an appropriate level regardless of the medium of the course or the methods of instruction. Students must have a reasonable assurance that the descriptions of courses they enrol in are accurate, regardless of where or in which format the course is offered. Third, the responsibility for the conduct of assessment should be appropriately delegated and shared.

The problem can only be dealt with in a qualitatively new of approach to continuing learning for all generations using new pedagogic, institutional and intellectual solutions in a new renaissance spirit. In quantitative terms, we must be able to reach the large, young populations of the developing countries.

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What is ACA?

Founded in 1993, the Academic Cooperation Association (ACA) is a not-for-profit pan-European network of major organisations responsible in their countries for the promotion of internationalisation in education and training. Current membership is comprised of 20 national organisations in 15 European countries, as well as associate members in North America, Japan and Australia. ACA's secretariat is located in Brussels, Belgium, in easy reach of the European institutions.

ACA is active in the following fields

- the enhancement of contact and cooperation between its members;
- the provision to its members of fast and up-to-date information on important developments in the European Union institutions and in international organisations;
- the provision, to third parties, of know how and expertise in the management of international cooperation programmes and projects;
- research into and publications on internationalisation in education and training;
- contract work for third parties.

ACA projects cover a wide spectrum and are too numerous to be listed here. However, recent activities include the management of the European Union's Socrates, Leonardo and Youth programmes (in the framework of the ETAPE consortium); a publication series, the *ACA Papers on International Cooperation in Education*; studies for the European Union and the Nordic Council of Ministers regarding the future of their education and training programmes; surveys on recent developments in European higher education, on transnational lifelong learning and English-language-taught degrees; and the provision of a quality assurance service, the Internationalisation Quality Review (IQR).

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The IT revolution is reshaping higher education. Already, there are predictions of the death of the "brick-and-mortar" university, soon to be replaced by online "click" or "virtual" institutions. Even if this expectation should turn out to be exaggerated, the IT drive will eventually bring about major changes. One affected area could be the internationalisation of higher education. Will online learning replace traditional international activities in the future, such as study or teaching in another country? And will it be necessary to internationalise the content and format of curricula in the future if students can tap into programmes from all over the globe via the Internet? International experts explored these and related questions in a seminar the Academic Cooperation Association (ACA) and the Norwegian Centre for International University Cooperation (SIU) held in the summer of 2001. This publication presents the seminar's major outcomes.

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