

Chapter 1

Can you get my hard nose in focus? Universities, mass education and appropriate technology

Sir John Daniel

Group teaching in front of remote TV screens? This is not only an awful way to undertake distance learning, but flies in the face of everything that we have learned while conducting successful open and supported learning on a massive scale for the past 27 years. Our lessons are the key to addressing the triple crises of access, cost and flexibility now facing higher education world-wide.

Introduction: background context [by the editors]

In March 1997, Open University Vice Chancellor Sir John Daniel presented the keynote address at the International Distance Learning Conference (IDLCON-97) taking place in Washington, DC. Sir John was unable to be in Washington at the time of the conference, and had been asked to deliver his address live by satellite using the facilities of the BBC Open University Production Centre in Milton Keynes, UK. At the suggestion of IBM's Mel Bynum, who had been tracking and partially sponsoring our own work on virtual classrooms (see Chapter 9), we decided to use the very technology we had been developing to help make a key point – live during Sir John's presentation.

Since the conference was heavily dominated by satellite and videoconference vendors and users, of which the Vice Chancellor was highly critical, a three-pronged approach was adopted:

- the content itself would remain unchanged and hard-hitting;
- we would use a satellite broadcast to convey the Vice Chancellor's presentation live from the UK for the opening ten minutes, parenthetically demonstrating by example that we could still do this better than anyone else;
- in mid-presentation, we would switch over in full view of the 1,000-strong audience to an Internet-based presentation, using a live RealAudio feed plus an arsenal of graphical 'avatar' tricks (described in Chapter 9), all received on a

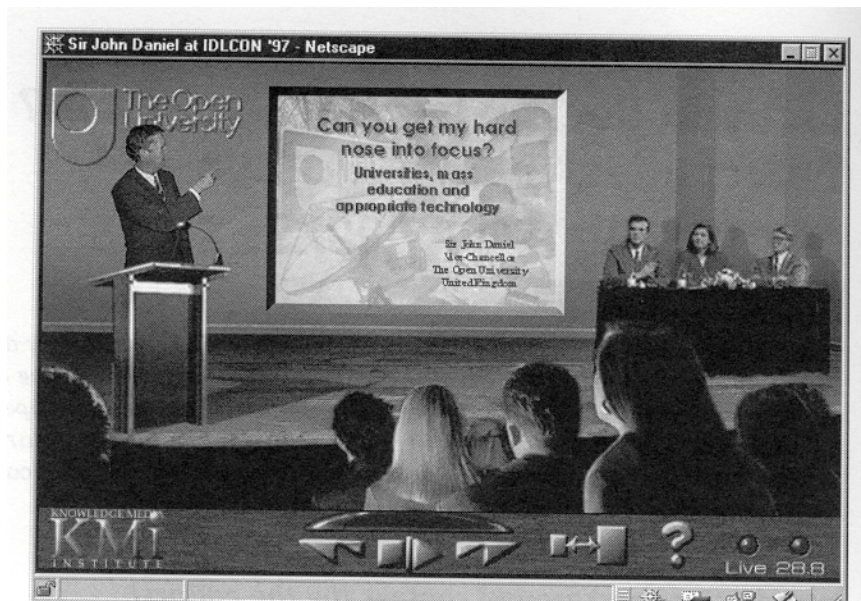


Figure 1.1 (Plate II). What the audience of one thousand IDLCON-97 conference-goers saw on their giant display screen after the Internet feed began. A moving avatar depicting Sir John Daniel appears on our left, and an artificial audience can be seen in the foreground. The 'slide content' area was expanded to fill the screen during the main part of the talk (Chapter 9, Figure 9.4).

notebook computer running over a 28.8Kbps dialup modem which was connected to an Internet Service Provider in Washington DC.

A central mixing deck was used to fade from the satellite feed to the Internet feed, and the output of the mixing deck was relayed to a giant screen in the auditorium (Figure 1.1). The next section of this chapter is the verbatim contents of Sir John's keynote speech. The references to the Russian Embassy reflect the fact that they were hosting an open evening during the IDLCON-97 conference. The Web replay of the talk, with the original look and feel experienced by the audience at the time, is available on the Web site which accompanies this book.

The keynote speech

Good afternoon. It is a pleasure to join this IDLCON conference. Thank you for allowing me to participate at a distance like this. I was in Washington DC last week to speak at the American

Association for Higher Education conference, but I had to return to London for a meeting of the Open University trustees. It simply wasn't possible for me to come back again so soon. I ask your forgiveness – but I also ask, if the IDLCON conference can't handle a speaker at a distance, who can? I shall try to turn that distance to advantage – for we are all believers in distance learning.

I address you from The Open University in Milton Keynes – Britain's newest and nicest city – about fifty miles north of London. My title for this short keynote is 'Can you get my hard nose in focus?' There is a sub-title: 'Universities, mass education and appropriate technology'. Let me unpack the title for starters.

Can you get my hard nose in focus? First, take that literally. Can you see my angular features and, more importantly, can you hear my funny accent. Ad hoc videoconferences are not always reliable. However, with the combined technical horsepower of the BBC and IDLCON I hope we'll be OK.

Second, what about the metaphorical meaning of my title? Why do I have a hard nose? Webster defines hard-nosed two ways. First, hard-bitten or stubborn. I'm not hard-bitten because I've had a wonderfully fulfilling career as a university educator in five political jurisdictions – six if I dare include the USA. But I am stubborn in the defence of important ideas, because I'm an academic. Webster's second definition of hard-nosed is hard-headed, especially with regard to budgeting. I am hard-headed about getting value for money in education – and I shall accuse you of not being hard-headed enough. Be warned.

The blurb in your [IDLCON-97] programme about this session is flattering about The Open University. It says we are the 'origin of much of The Open University and distance learning in the world' and that 'we are the international leader in distance learning'. Thank you for those accolades. I myself can take little credit for The Open University's remarkable achievements because, for most of its 28 year history, I worked in Canada. But I gratefully accept your plaudits on behalf of my colleagues.

Let's look at The Open University for a minute – I'll call it the OU. Why do you acclaim it as the pioneer of distance learning and still the world leader? Several reasons.

First, like any genuine educational innovation, it was rooted in idealism. At the OU's inaugural ceremony, held in the week that the Apollo astronauts returned from the first moon landing in 1969, our first Chancellor declared an inspiring mission: to be

open as to people, open as to places, open as to ideas and open as to methods. In the last quarter century the OU has achieved those noble ideals more fully than any university in the world.

Open as to people: The OU has 150,000 degree credit students this year: 1,500 at PhD level; 10,000 masters; over 100,000 baccalaureate. And this is not just access. It is access to success. Open access – yet overall degree completion rates equalling those of your campus universities in the USA. A university placed in the top 20 per cent of national quality rankings. Acclaimed for the excellence of its teaching in subjects like music, earth sciences, chemistry and initial teacher training, where even enthusiasts like yourselves would not claim that distance education had a natural advantage.

Open as to places: 20,000 students outside the UK. Sadly, this satellite link doesn't allow me to drink vodka with you this evening at the Russian embassy. Distance teaching does have some drawbacks! But please raise a glass to the 5,000 Russian students of The Open University. They are to be found all the way from the Urals to the Kurile Islands. They are taking our business courses – in Russian – and I doubt that any other university outside Russia has had such a massive impact on helping ordinary Russians prepare themselves for the new world order.

Open as to ideas: The central mission of all universities – yet too often forgotten by the promoters of distance learning. The aim of distance learning is not to get instructional designers to package old academic orthodoxy in fancy new technology. It has a greater responsibility than other forms of university to move the intellectual paradigms forward. That is the most striking success of the OU's course team approach. The Open University is an academic pacesetter. Our course materials are used massively in other universities because they are intellectually exciting.

Open as to methods: This is where my hard nose starts to show. The Open University has led a succession of revolutions in the methods of distance learning. First we integrated the mass media of TV and radio broadcasting with the older medium of print. So today a drop-in audience of millions enjoys our TV programmes. Next we integrated the personal media, your VCR, the computer in your den, the tape deck in your car. So today the OU is a family show. Right now we're integrating the knowledge media in another revolution. Knowledge Media is a term coined by Marc Eisenstadt – who is at your conference – for the technologies now emerging from the convergence of computing, telecommunications

and the cognitive sciences [see Eisenstadt and Vincent overview for the origins of the term Knowledge Media, particularly Mark Stefik's usage in 1986 – Eds].

But there is a deeper openness to methods and that, I fear, is where my hard nose starts to intrude into this cosy chat. There are really only two approaches to distance education. There is a great divide between them – and therefore a great divide – other than the Atlantic Ocean – between me and you. What is this fault line I am talking about? I summarize it in three points.

Point 1: The first approach to distance education targets individual learning; the second focuses on group teaching. Whatever terms people invent, distributed learning, correspondence study, flexible learning, home-study, remote-classroom teaching, tele-education, guided study, or whatever, distance education still boils down to these two traditions, individual learning or group teaching – and they are very different.

Point 2: The most important difference is that the group teaching approach is based on synchronous communication. Teachers and students must communicate in real time. The individual learning approach is based on asynchronous communication. You re-create the campus in the student's home or on their desk at work so they can study where and when it suits them.

Point 3: Another important consequence follows. In the group teaching scenario the teacher communicates with students in a network of classrooms in real time. It is a teacher-centred form of education. That's not meant pejoratively. It's simply a fact that if you try to set up a system for a teacher to address a number of remote groups you must design it from the teacher's point of view. Under the individual learning scenario you re-create the campus in thousands of homes and workplaces – so it has to be a student-centred approach. You must figure out what constitutes an effective home learning environment for the student.

No prizes for guessing which tradition of distance education this IDLCON conference is about. Every picture on the conference program [sic] shows students in remote classrooms looking at TV screens. We're talking about teaching to groups. This session is a perfect example of everything I've said. Number 1, this is a synchronous session – you're paying to hear me live. Number 2, all the folk involved in running the session are focused on my activity as a teacher. As the speaker I do worry a bit about your learning, although mostly about not upsetting you too much. Are you able to focus on my core message, which is that you are

missing the big opportunities in distance learning through your obsession with video-conferencing? But that's my worry – everyone else is simply keeping their fingers crossed that the transatlantic satellite link doesn't die on us.

My fundamental point is that this focus on group teaching not only has a high cost but, more importantly, a high opportunity cost. By focusing on remote group teaching you are passing up the opportunity to use distance education to respond to the great educational and training crises of our time. They are a triple crisis: of access, cost and flexibility. The real challenge is to reach many more people, to reach them inexpensively, and to make it convenient for them. Remote-group teaching fails those tests. The individual learning tradition of distance education has much more to offer: mass access, low cost and personal flexibility. Let me explain briefly. I do so at more length, and with great lucidity and persuasiveness, in my recent book: *Mega-universities and Knowledge Media: Technology Strategies for Higher Education* (Daniel, 1997). Read it if you can handle a personal intellectual paradigm shift.

Mega-university is my term for a distance teaching university that enrolls over 100,000 students. There are now 11 of them with nearly three million students between them. All of them, except the Chinese TV University system, focus on individual learning – not group teaching. That is the secret of their success. I've already given The Open University as an example because it has had a huge global impact. It operates on a large scale: that's the answer to the crisis of access. It operates inexpensively – half the cost per student of other British universities. That's the answer to the crisis of cost. It operates conveniently: 130,000 students in Britain, 20,000 in a hundred other countries. That's the answer to the crisis of flexibility.

How has this been achieved? There are four keys to the national and international success of the Open University formula for distance learning. One: very high quality multi-media learning materials produced by multi-skilled academic teams. Study materials must be excellent and varied to make the campus in the home or workplace a congenial experience. Two: dedicated personal academic support. Each Open University student has their own tutor for each course, one of OU's 7000 adjunct faculty. They comment on and mark the student's assignments, hold group meetings and give support by phone, e-mail and computer conference. Three: slick logistics. Each individual student must receive the right materials and information at the right time. With over

150,000 students around the world that requires careful attention to detail. Four: a strong research base. When thousands of students use the materials for each course and millions of people view each TV programme the content must be academically up to date. Thanks to economies of scale The Open University has the resources to move the academic paradigms steadily forward.

In summary, focusing on individual learning offers more than remote-group teaching. Take flexibility. The focus on the individual gives students flexibility over where and when they study. It may be the home, the workplace, the commuter train or the airport lounge. Because it is convenient and flexible you can reach large numbers – so access improves. And because you reach large numbers you get economies of scale, so study costs less for all concerned. You also get higher academic quality, because the scale allows you to make a bigger academic investment. What I don't understand, because it is all so clear to me, is why you don't see it that way too. After all, the great contribution of the United States to the advancement of humankind has been to stress the importance of the individual. Why, in distance education, are you so fixated on the collectivity in the classroom?

My tentative hypothesis is that American higher education values teaching more than learning. You may have other hypotheses. Perhaps it's the pressure from the big telecoms operators who want to sell you lots of bandwidth for your videoconferences and for events like this. You can't expect them to vote for targeting individuals at home, just as you can't expect landlords who rent apartments to students near the campus to vote for any kind of distance education. Turkeys don't vote for Thanksgiving either. But I'm sure you will come round in time. As your lively Ambassador in Britain, Admiral Crowe, said to me recently, 'The United States will always do the right thing – after having exhausted all other possibilities'.

By this stage if you're still listening to me, rather than enjoying other mental fantasies, you'll be either depressed or annoyed. None of these are good frames of mind for individual learning, so I ought to give you hope for the future. Here goes. Let me show you a corner of the future for the last few minutes of my address.

So far, my hard nose has been coming to you exclusively, expensively, and inflexibly by a broadband satellite link. I shall switch over and come to you via the Net using technology that has been developed here at The Open University by our Knowledge Media Institute, the KMi, under Marc Eisenstadt's leadership. We call

it the KMi Stadium, the development of telepresence on a large scale.

[At this point the presentation was switched in real time from the satellite video feed to a streaming audio/graphic presentation, connected via dialup modem. – Eds]

Now I'm coming to you on the Internet via an ordinary dial-up modem. I may be delayed a few more seconds than the satellite link, and you may even hear some of this twice as a result, but the implications are profound: suddenly, there is world-wide access to my concluding words. Now the distinction between synchronous and asynchronous learning begins to blur. In fact, my address to you has been going out on KMi Stadium from the start. So if you were asleep for the last 20 minutes you can find it on the Net when you get home and view it again. Furthermore, because it is a Net-based technology it is easy to follow up the session with questions, discussion and verbal blows to my hard nose even if you viewed it asynchronously. J.S.Daniel@open.ac.uk will find me.

I've been somewhat rude today about the approach to distance learning that involves teaching to groups in remote classrooms through videoconferencing. I apologize to the oxen that were gored. But don't get me wrong. I believe that other forms of teleconferencing represent the great breakthrough that the knowledge media are bringing to distance learning. Specifically we find that computer conferencing is highly popular with students and enhances their performance in courses. In this application the key to success is Metcalfe's Law, or the Law of the Telecosm. It says the value of a network is proportional to the square of the number of users. That means that if we only had 350 students taking our freshman course in technology from home each student would find the network and the computer conferences one hundred times less valuable than it is with 3,500 students who can be linked from home. The Law of the Telecosm creates a real breakthrough in distance learning. Hitherto, with so-called interactive media – like video-conferencing – the interactive value went down sharply as student numbers went up. Suddenly we have a medium where that is not true. More students means better education. We have found the Holy Grail that educators have sought since the beginning of time.

That's why we are investing so much effort in scaling up these interactive Internet technologies. We are able to enrich and extend distance learning by creating a Web of student-to-student

communication and by giving guided access to academic resources that we could not otherwise use.

What we have done, in effect, is to add the essence of videoconferencing to the toolkit of the individual learner. But we've eliminated the main drawbacks of videoconferencing, which is the need to assemble students in groups and therefore the impossibility of scaling it up. But please don't misunderstand. We are not saying that this is the total answer to distance learning.

In the last 25 years over two million people have studied with The Open University. If we have learned one thing from all those students, that rich tapestry of humanity, it is that there is no magic single medium. People are different and the mix of media they like to learn from is different. What the Net does, helped by technologies such as KMi Stadium is to provide a communicative glue that increases the synergy between the other media.

Which is a good moment to let my hard nose go out of focus and to wish you well with your conference. And please remember to drink a toast in vodka to the 5,000 Russian students of The Open University when you go the Russian Embassy this evening.