

The Virtual University? Educational Environments of the Future

This volume is based on a workshop held in October 1999 and organized by the Academia Europaea and the Wenner-Gren Foundation. A simple question started the organization of the meeting: what will the university be like in next millennium? Emerging technologies are transforming our concept of time and space. The Internet is only the forerunner of what is to come. Cyberspace will eventually determine how we learn, socialize and work. In the near future, commercial educational networks will offer a wide variety of global products. Therefore, the university must rethink its organization and the adequacy of its educational methods.

In the network society it is inescapable that the universities will have to deal with information and communication technology (ICT), not only for research but also for education. Some even think that universities as educational institutions will become totally virtual. Others, more reasonably, expect major reforms. On the one hand, ICT is one of the main reasons that reform is necessary. On the other hand, ICT offers adequate tools with which the re-organization of academic education, as required by modern society, can be achieved.

Does this imply the end of universities' monopoly on creating and transferring knowledge? Universities over the centuries have been concerned with the competencies required of students to work and function in tomorrow's society. Development of academic attitudes and vocational skills is our business. However, with the rapid expansion and introduction of new technologies it has become increasingly difficult for teachers, researchers and administrators to decide on a common and mutually accepted institutional infrastructure.

Is it possible from the seemingly endless flow of new information technologies to select and adopt new approaches for learning, new research methods and new ways of handling strategic information? It is on the basis of such questions that the Council of the Academia Europaea brought together a small working group to consider these developments, and from this group the proposal emerged to organize this conference.

It was proposed by the working group that the conference should deal with the developments of ICT that are of direct importance for academic education. The conference should highlight the practical applications of these developments. The choices to be made by universities should be clarified. The main participants in the reform processes should find in the conference support and clarification about the decisions to be made.

The conference would address in particular the role of recent communications developments in learning at the tertiary education level. Europe has considerable experience in the implementation of Open University-type education using a mixture of traditional book-based learning, modern communications media, such as television and video, and short-

duration residential courses. However, the advent of the Internet introduces a completely new element, that of real-time access in distance-learning programmes. It is necessary to explore the effect this will have on the time scale of remote tertiary education, on the provision of educational materials by education institutions and on the learning methods of the students.

The impact on the education institutions needs to be examined in two dimensions: (i) the challenges of the Internet for those universities already concentrating on the provision of distance learning and (ii) its impact on universities whose students attend teaching courses in the traditional manner. It may be that the Internet will erode the differences between these two categories.

Over the past few years the Academia Europaea, with the support of the Wenner-Gren Foundation, has organized several meetings on various aspects of the educational system (including higher education) and on the impact of information technology on the individual and society. In this context it was proposed to organize this international conference on the theme 'The Virtual University'.

Members of the working group included Professor Duffield (University of the Highlands and Islands, Scotland, U.K.), Professor Hallak [International Institute for Educational Planning, United Nations Educational, Scientific and Cultural Organisation (UNESCO), France], Professor Teichler (Universität Gesamthochschule Kassel, Germany), Professor Thorngren (Stockholm School of Economics, Sweden) and Professor De Wolf (Open University, The Netherlands). With the assistance of Peter Colyer, the Executive Secretary of the Academia Europaea, they participated not only in the preparation of this meeting but were also active in selecting the speakers and participants and took responsibility for leading the various sessions. The Academia Europaea is very grateful for their inspiration and hard work. We are also highly indebted to Professor Torvard Laurent who arranged the support of the Wenner-Gren Foundation and who took care of all local arrangements.

The presentations and discussions during the meeting were organized around three main themes, concerned with: (i) technological capabilities; (ii) the didactics of higher education with the emphasis on new ICT-supported methods of teaching and learning; and (iii) policy and institutional issues related to the introduction and incorporation of ICT into the educational infrastructure. ICT is by no means perfect and is usually very expensive. Often the existing organizational structure of a university is an obstacle for a businesslike approach and an institutional policy on educational structure is often almost impossible.

Many questions arose during the preparation of the programme:

- In what ways can universities invest in adequate and reliable telecommunication technologies? And, in what way can alternative means of access to information — for example satellite and microwave communications — assist in teaching and research?
- Is the Open University concept and experience applicable to the Internet/virtual university?

- What are the essential organizational levels (local, national, global) in the operation of a virtual university?
- Is an open (global) virtual university system compatible with national tertiary education requirements?
- Are the existing teaching materials (libraries, textbooks, course material) suitable for use in an Internet university?
- Is the concept of the virtual university a privilege of the technically advanced part of the world or can it be applied in developing countries as well?
- Are the skills and attitudes of the present teaching staff adequate for the effective use of sophisticated ICTs and the needs of computer-literate students?
- In what ways can the 'traditional' teacher, used to classroom teaching, be part of a virtual university?
- With the rapid development of new information technologies and the practical skills required, the attitudes of both teachers and students should be compatible with the concept and technology of the virtual university. Is this realistic?
- Can the virtual university operate without any face-to-face contact (tutorial or classroom support)?
- Would teaching staff from different disciplines (humanities and sciences, ranging from philosophy, mathematics and chemistry to history) be equally motivated and equipped for teaching through the virtual university?
- To what extent does the virtual university concept fit in with the learning behaviour and psychology of students at the tertiary level?
- Can the present-day tertiary student adjust to Internet teaching following classical primary and secondary school education?
- Would Internet teaching affect the academic and social development of students that is normally associated with tertiary education?
- Could Internet teaching set worldwide levels and standards for individual students as well as accreditation systems?
- Which learning method would individual students prefer: classical university, Open (TV-based) University, virtual (Internet) university?

The consequences of the answers to these questions (and many others) on the policy and organization of existing institutions could be of such significance that they may erode the idea of the existing traditional university. It may even be necessary to develop radically new institutions to exploit the potential of the new information technologies for the teaching and research process. Most important is the question of whether all these developments can be combined with or included in the 'idea of the university', which after all has withstood many storms of the cultural, social and political climate over the past six or seven centuries.

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