

MEIXNER, Oliver and SCHIEBEL, Walter
Institute of Agricultural Economics, University of Agricultural Sciences Vienna
Peter Jordan Str. 82, A-1190 Vienna, Austria
Email: meixner@edv1.boku.ac.at, schiebel@edv1.boku.ac.at

In: Proceedings (CD-Rom) „The New Educational Frontier: Teaching and Learning in a Networked World. 19th World Conference on Open Learning and Distance Education“, Vienna, June 20-24, 1999, International Council for Open and Distance Education.

The "Economics of Mountain Systems" Network of European Universities - Distance Learning Technologies for Training Regional Specialists

Biography

Prof. Walter Schiebel: Professor of Agricultural Marketing; Vice Rector for Continuing Education; EUCEN (Austrian Universities Continuing Education Network) representative
Dr. Oliver Meixner: Lecturer, Department of Agricultural Marketing; Supervisor of various (ODL) projects; System developer - AgriNet/Markstrat (<http://www.boku.ac.at/iao/markstrat/>).

1 Introduction

The "Economics of Mountain Systems" research project is financed through the EU Socrates programme and involves the development of an interdisciplinary, multi-country Masters degree course to be taught via open distance learning (ODL). This paper gives an overview of the project and discusses the technologies which will be used to facilitate ODL.

2 Brief description of the "Economics of Mountain Systems" project

The EU Project "Economics of Mountain Systems" (EMS) involves the creation of an interdisciplinary Masters degree which would give students the kind of skills and knowledge they need if they are to be able to contribute to the future development of Europe's mountain regions.

Five European universities are working together on the structure and organisation of the course. The aims of the project, which began in 1997/1998 are:

- development of a course curriculum,
- development of specific teaching contents and teaching materials,
- creation of the organisational resources needed to ensure the successful establishment of the course in the universities concerned

A core element of the project has always been that students be taught through ODL, thereby ensuring that the course could be offered at all the partner universities. This decentralised approach, where teaching takes place simultaneously at several sites, can only function if the course is split into discrete modules; five such modules are planned (see M1 to M5 in Figure 1). Each of the participating universities is responsible for developing one module. In each university, only the module which was developed locally will then actually be taught in situ. The remaining four modules will be taught via ODL. This means we can set up a degree course which is international in perspective, yet relatively cheap to implement.

			Thesis
M1	Human Resource Management		
M2	Agriculture & Forestry		
M3	Regional Marketing		
M4	Economic Diversification in Mountain Areas		
M5	Regional Development		
	20 hrs	20 hrs	10 hrs
	1 st semester	2 nd semester	3 rd semester
			4 th semester

Figure 1: Modular structure of the EMS course

The network of project partners covers universities in Germany, Italy, France, Portugal and Austria (see <http://www.boku.ac.at/iao/ems> for more details). The project co-ordinator is the University of Agricultural Sciences Vienna, Dept. of Agricultural Marketing (Prof. Schiebel).

3 Distance education in the context of the EMS Masters course

The modular course structure will need to be supported by appropriate ODL-technologies; ODL gives students access to teaching materials for all modules and allows them to communicate with teaching staff and students in other countries.

3.1 Definitions

Although the term "distance learning" is defined in various ways in the literature, some common elements can be drawn out from those definitions that are more widely accepted:

- teachers and students are spatially separated from one another, and are linked together within a communications network driven by new media;
- the speed of the learning process tends to be controlled by the student, rather than the teacher;
- communication between teachers and students involves the use of both synchronous and asynchronous media and technologies. Asynchronous communication is where there is a time lag between creation of a message and its receipt by the message's target, as is the case with, for example, Email. Synchronous communication is where no such time lag exists, for example in chatrooms (SHERRY 1996)

New media and technologies give students more control over the learning process. They also make it easier (in comparison with traditional teaching) for students to ask questions and/or find the answers to questions themselves using links to information sources (THISEN 1997).

Information technologies and communications media are support communication between student and teacher and the transfer of knowledge across large physical distances. Those technologies and media which will be used in the EMS course are presented below.

3.2 Information technologies and communications media

The following sections give a brief overview of the information technologies and communications media which will be used to facilitate ODL in the context of the EMS Masters course. It is, however, important to note that each university will also be using traditional teaching methods when teaching local students the module which that particular university was responsible for developing.

3.2.1 CD-ROM

CD-ROMs are particularly well suited to the presentation of large quantities of data in the form of text, graphics or video, or for giving students access to interactive, multimedia programmes.

Some teaching materials will be made available to students in the form of multimedia CD-ROMs. Most of the teaching will, however, use the World Wide Web as the main communication medium.

3.2.2 World Wide Web (WWW)

A huge amount of multimedia data and information can be made available via the WWW. In the WWW, teaching contents can be updated at any time, something which is not possible with CD-ROMs. Hyperlinks can be used to link together different elements of the course and to lead students to complementary teaching materials and related sources of information (see Thissen 1997a). Each project partner will provide its students with access to the WWW. Of course, those students with a private internet account will also be able to access material from home. An important consideration here is the costs of a WWW-connection; where access is provided through a telephone company, these costs increase in proportion to the time spent online. The costs are particularly high when large quantities of data (e.g. videos) are transmitted and might also be incurred by the students themselves, should they work from home. Data transfer speeds are also such that long waiting times may be involved when downloading information from the WWW. It is important to be aware of the impacts of potential costs and waiting times in the context of student attention spans. Special ODL software is going to be used in the EMS course. This software has been developed within a European research programme and is almost ready for practical application (see <http://qspr03.tuwien.ac.at/teachme/>).

3.2.3 Email

Teachers and students can communicate quickly and effectively using Email. However, immediate, interactive communication is not possible, since Email involves asynchronous communication.

3.2.4 Discussion forums

A group of individuals can discuss a particular topic (e.g. mountain regions) using newsgroups or mailing lists. All those involved in the learning process can participate in such virtual discussion forums, generating a variety of opinions on any particular subject. Participants have time to consider, and respond to, individual contributions to a discussion (Thissen 1997a). Mailing lists use Email as the means for transferring data, while newsgroups can be accessed using dedicated servers and appropriate software.

The various forms of information transfer and communications media discussed above involve an asynchronous connection between teachers and students; there is no immediate, real-time communication between the two. However, this does give students and teachers a considerable degree of freedom and control, since (in the ideal case) they are able to choose when, where and how fast the learning process takes place (Thissen 1997a). In contrast, synchronous communication requires a certain amount of co-ordination and agreement, since partners have to agree on a time when they will "meet" - relevant technologies are discussed below.

3.2.5 Internet Chat Relay

IRC (chat programme) allows a group of individuals to meet within a virtual discussion room (chatroom), where they can then discuss a topic in real-time. Examples of readily available chat programmes include PowWow (<http://www.tribal.com>) or Microsoft Chat (<http://www.microsoft.com/>). A common element of all such programmes is that discussion participants communicate via the keyboard, i.e. written communication still dominates. In the EMS Masters course, IRC will predominately be used for virtual meetings between an individual student and a member of staff, or for synchronous discussions involving a number of teaching staff and students. A private chatroom for these purposes will be built into the EMS website.

3.2.6 Video conferencing

There are no current plans to use video conferencing in the course, mostly because data transfer rates are not yet considered to be fast enough. However, the technology has the potential to be a major component of future teaching, since there are a range of potential benefits (REED, 1998):

- video conferencing improves the motivation of distance learners;
- it improves their communication, presentation and management skills;
- it encourages increased interaction with the "outside world";
- it helps students consolidate their knowledge and improves their approach to learning.

The quality of questions asked in video conferences tends to be higher. Students pay more attention to communication per se and gain a better understanding of cultural differences in this context, since they can observe those gestures and facial expressions missing in text-only communication. The cross-cultural aspects of video conferences make the technology interesting for the EMS degree, since the latter is a truly European course, taught across a multicultural network of educational institutions from five different countries.

3.3 Didactic challenges for ODL

Six conditions have to be fulfilled if ODL is to be effective (DÖRING 1997):

1. *teaching staff must be sufficiently familiar with the new technologies and media involved,*
2. *course participants must have sufficient interest in these new technologies and media,*
3. *participants must have unrestricted access to the internet through a connection which supports reasonable data transfer speeds (cost issue: cost/minute or cost/training unit?),*
4. *there must be adequate advice and support available for all participants,*
5. *participants must have realistic expectations regarding new technologies and communications media (important: personal contact between students and teaching staff),*
6. *communication systems must be user-friendly (see FRITSCH 1997)*

These issues are being fully addressed in the EMS project before the course is actually introduced in the participating universities. Rigorous planning, with a strong focus on the needs of future course participants, should ensure that the EMS Masters programme is able to meet these didactic challenges.

4 Summary

We believe that the new media and technologies described above will help ensure that the EMS Masters course can be taught effectively using distance education. A harmonious mix of supporting ODL technologies is needed to guarantee the interest and approval of future students (and teaching staff).

References

- SHERRY, L. (1996): Issues in Distance Learning. *International Journal of Educational Telecommunications*, 1 (4), 337-365.
- THISSEN, F. (1997): Das Lernen neu erfinden - konstruktivistische Grundlagen einer Multimedia-Didaktik. Paper presented at Learntec 1997 in Karlsruhe.
- THISSEN, F. (1997a): Die Zukunft der Universität I. Das Virtuelle College. At: <http://viadrina.eu.v-frankfurt-o.de/~sk/Virtual-College/ZukUni1.html>
- REED, J. (1995, 1998): Videoconferencing – a brief description. At: <http://www.kn.pacbell.com/wired/vidconf/description.html>
- DÖRING, N. (1997): Das WWW im Unterricht. Organisatorischer Rahmen, didaktische Grundlagen und praktische Beispiele. At: <http://paedpsych.jk.uni-linz.ac.at/PAEDPSYCH/NETSCHULE/NETSCHULELITERATUR/Doering97.html>
- FRITSCH, M. (1997): Plattformen zur Durchführung Virtueller Seminare. Leistungsvergleich der drei Internet-Kommunikationstools HyperNews, BSCW, WebBoard 2.0. At: <http://www.fernuni-hagen.de/ZIFF/vergleich.html>

