

# HOW TO USE E-LEARNING IN DISTANCE EDUCATION AT UNIVERSITIES

KATEŘINA KOSTOLÁNYOVÁ

## ABSTRACT

Nowadays we can witness an incredibly fast progress in information and communication technologies, which has brought about a wide variety of possibilities in education. As regards creating and using multimedia prompts in communication between learners and teachers, it is, in particular, e-learning technologies that play an essential part in distance education. While creating courses of the type, which is a part of e-learning, it is possible to select various software settings such as Learning Space, WebCT, and the like. By means of these products we can prepare appropriate learning prompts such as texts, hypertexts, problems with or without solution, tests and so on. Let us present a sample part of courses generated in the product of Learning Space at Ostrava University.

## KEYWORDS:

E-learning, distance-education technologies, on-line courses, distributed education, Internet

Such a fast development in technical progress of information and communication technologies went beyond all expectations. However, the speed at which PCs, faxes, computer networks, DVD, mobile phones are being introduced does not correspond to the speed people learn how to work with and use the technology. In the current world, there is hardly any doubt about the necessity of continuous, i.e. lifelong education. New ways of educational technologies are of great significance as to producing and using multimedia distance prompts, as to communication between learners and teachers etc.

Distance education is a multimedia form of controlled self-study in which teachers are physically separated from their learners in the course of instruction most of the time. It is a highly individualized tuition where MULTIMEDIA means to use all communication and information technologies available through which not only can the subject be presented, but it can also be checked and tested.

It is educational courses that represent a partial unit within lifelong adult education. It concerns relatively separate parts of the subject such as problems, tasks and tests divided into modules. Instruction modules can take multimedia shape, i.e. – apart from texts – they can comprise photos, video clips, animation, sound sequences, linear as well as hypertextual references etc. By means of Internet or Intranet, i.e. a common www browser, instruction materials are being distributed to individual participants in the course. It also makes the internal feedback possible, within which a learner is able to assess himself or herself to which extent they have completed study requirements. One of the forms evaluating the output

knowledge might be TMA (Tutor Marked Assignment). These are various types of tasks through which a learner can prove their skills, understanding links and ability to apply it to a particular science branch. That is a brief explanation of basic principles referring to distance education.

E-learning can be successfully applied on the above mentioned form of studies. It is a process of producing interactive multimedia courses, distributing them to their users and leading computer-aided instruction.

**PRODUCTION** – it means to create a multimedia course comprising a textual explanation along with animations, graphics, schemata and objects of testing. The form of a course is selected in accordance with students' profiles (education, attitude to computers, learning conditions), the type of the subject matter (theory, practice, working procedure) and technological possibilities (computer, network, Internet). Apart from transferring the subject taught, the generated courses guarantee students' feedback via testing questions, multiple-choice options or their own problem solving suggestions. It is like this that students are actively involved in instruction process.

**DISTRIBUTION** – Having been created, the course has to be distributed among students in the form of local computer network, Internet, Intranet, CD-ROM etc.

**MANAGEMENT** – comes after distribution, whereby students are guaranteed to have an access to the right courses at the right moment. In addition, the completed tasks are being observed in the process of management as to their success, and each of the courses is statistically evaluated.

Unlike the traditional way of instruction, e-learning has a number of advantages – it is cheaper, faster and more adaptable.

It is cheaper – the course having been produced and aided by computer technology, the running expenses are very low (there is no need to pay for transport, accommodation, board...).

It is faster – the instruction is held according to students' requirements.

It is more adaptable – participants enter their courses with different knowledge and skills. E-learning enables each of them to study at their own pace or to choose from a variety of explanations, and it is also possible to state graded aims by means of testing objects...

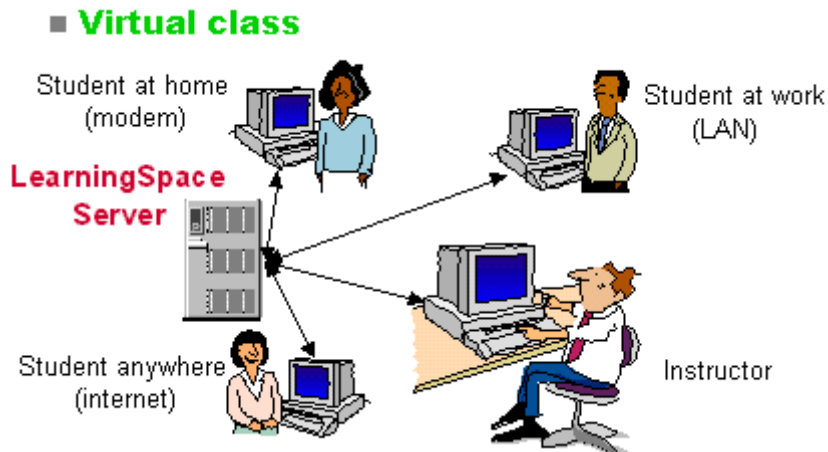
In the process of distance learning the teacher works as a tutor. Their main task is to assess (grade) students' independent projects as well as to inform them about their results, answer questions or lead counselling. There are no lectures in distance studies, the focus consists in using learning prompts. After the introductory proposal of the course, its development is being made through a professional product such as WebCT, Learning Space, Kortis, and the like.

Learning prompts are considered to be texts and some further aids which are produced to facilitate self study as much as possible. It means that the content of the subject is taken in regular dose along with feedback elements to check its understanding. The text, which is graphically laid out, consists of problem solving tasks with or without key and tests (including autotests) to check the knowledge.

It was the product of Lotus Development Company – the above mentioned Learning Space – that was applied to distance education in our conditions. This product is suitable for educational courses because it helps to create courses, which are universal and adaptable

according to requirements. It does not need the knowledge of programming since the suggested stencils can formulate the content of the whole course in question easily and quickly.

The principle consists in installing the education server with ready -made courses and in creating virtual classes made up of both learners and teachers. Participants have an access to single courses on the education server from their computers via Lotus Notes Client or Internet Browser. A part of the educational technology is feedback and the acquired knowledge check through tasks and tests. This form of education can be supplemented by appropriate seminars.



Learning Space comprises 5 basic database modules, which create dynamic background for developing and supplying the courses.

The basic and probably the most important module is **MediaCentre**, which is actually the shared information database serving as the archives of current CDs with educational programmes, Internet information – from a simple text to video sequences.

**Schedule** is a “planner” which shows participants round the course – from a task to another within the whole course. The instructor – in accordance with requirements of time and knowledge – can propose a course; create appropriate tests to check the acquired knowledge or to adapt it according to results (revising, supplementing or reinforcing...).

In module **CourseRoom** they will choose the conditions under which the course will be running as well as the way of cooperation between team members and their instructor.

Database **Profiles** comprises the data of each participant, gathers their profiles, data both personal and cognitive, test evaluations etc.

The data help to evaluate the efficiency of the proposed course, results, success...

**AssessmentManager** functions as a tool for instructors to make and check tests, estimate qualities, assess and run refresher courses.

Generally speaking, the foundations for this type of course can be prepared in commonly used programmes, such as MS Office Package with MS Word for editing learning texts, problems and tests. It is possible to insert various references to suitable Internet pages, various types of pictures and graphics in common format, animation and sound. All of this enables courses to be made attractive and fully multimedial.

Two drafts of introductory courses have been made so far at Pedagogical Faculty, Ostrava University, called Operation Analysis and Theory of Automatic Control System. As it is necessary to have a team of a few experts for producing a high quality course, teachers of all subjects must be involved in counseling, modifying and adapting the course. In the beginning the courses will supplement the traditional instruction to students of combined studies in the

Department of Technical and Manual Education. In particular, Theory of Automatic Control System will be used in the subject called Foundations of Automation, and Operation Analysis in a corresponding subject in the branch of economics.

The structure of the courses is approximately as follows:

Theory of Automatic Control System	Operation Analysis
Module 1 – theory	Module 1
Simple linear regulating circumference	Basic concepts
Internal description	Test
External description	Module 2
Regulators	Oriented graphs
Stability of regulation	Non-oriented graphs
Module 2 – practice	Bellman principle of optimality
Example of internal description	Test
Example of external description	Module 3
Example of regulators	Analytical methods
Module 3 – test	Method CPM
	Example of Method CPM
	Method PERT
	Example of Method PERT
	Test

The form of distance learning is obviously justified at universities in the future. It can be used within the system of adult education as well. Education cannot be regarded only as a preparation for the future job, but it should become a continuous process of a person who wants to be a valid link in information society. If we manage to direct educational technologies in the constructive way, we will make students use various applications supporting their own activity. It is very optimistic for the future that education is in great demand particularly it concerns full-time university studies, which hopefully will keep increasing.

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Kateřina KOSTOLÁNYOVÁ

University of Ostrava

Dvořákova 7, 701 00 OSTRAVA

Czech Republic

Katerina.Kostolanyova@osu.cz