The place of distance education in university studies

Marián Kireš
Section of Physics Education

Faculty of Natural Sciences
University of P. J. Šafárik, Košice
Angelinum 9, 041 54 Košice

Our background

Within the framework of university training of natural science teachers, here at the Faculty of Natural Sciences of the University of Pavol Jozef Šafárik in Košice, the compulsory optional subject *School computers* has been taught since three years.

When proposing this subject, we have been motivated by the requirements of school practice where increasingly more and more schools have computer classrooms and they realise more computer based educational projects. Educational trends and tremendous interest of students confirm the importance of computer based education subjects into the educational process of university teachers

The tendency of faculties training future teachers of physics is to prepare these students for practice and provide them not only with theoretical knowledge but also practical experience from real educational process. It is a matter of latest information from particular science discipline and of current trends in educational process and didactic. The unthinkable part of modern didactic preparation represents computer and Internet literacy.

Lately, we are welcoming the activities of Infovek aiming at the support to make use of modern information and/or communication technologies in educational process. We hope that our graduates will find better conditions for next developing of their knowledge and skills in everyday practice.

The young generation of teachers is very well prepared as far as computer literacy and modern educational technologies concerns. Majority of teachers at the secondary grammar schools are in their middle ages, i.e. teachers who have not got chance to become acquainted with modern information and communication technologies. This group of teachers has not professional knowledge even basic skills are poor and they do not see the importance of computer technology in educational process. At our faculty preparing future teachers, we see the need in further educating of our graduates - teachers of natural science subjects.

Our effort, here at the Faculty of natural sciences of the University of P. J. Šafárik in Košice, is to create functional model of further teacher training reacting to current needs of teachers and supporting the increase of *educational level concerning natural science subjects. This idea has its roots in many years work in further teacher training. Since six years we have been organising the meetings - Club of Physics teachers at secondary grammar schools, we have established Club of information science and we are paying attention to chemistry teachers. These are one-day meetings or meetings in the afternoon hours, and usually under the active participation of teachers we are dealing with various forms of further training. Teachers show deep interest in present information from the given science disciplines, methodologies of the given subjects and they welcome our effort in connecting them with the world of modern technologies and communication technologies. They feel that they are improving from day to day and that they diminish the gap in the field of computer literacy when comparing them with their students.

It shows to be very impractical travelling for example seven hours to attend a two hours seminar. The same applies to printing of studying materials, because it is expensive

and sometimes out-of-dated. We were motivated by these matters to work out a project for creating distance Internet courses.

Distance course

One of the distance courses within the IDEP project is called: "Using multimedia in Education". The course is aimed at three thematic topics:

1) current possibilities of multimedia, presentation of basic practical applications
2) principles and professional-technical parameters of particular multimedia equipment
3) methodology on how to make use of multimedia in educational process.

The target groups are firstly university students who are going to become teachers of above-mentioned subjects and secondly teachers of every type of schools. We are requiring from the participants to have access to Internet, to have their own mailbox and basic knowledge of sending e-mails, and basic operations in MS Internet, Explorer, MS Word and MS Excel. We are designing a course for partially computer-skilled adepts.

In the phase of adjusting the distance course, the target group will be limited to 30 participants per one course. After adjusting the distance course, the size will depend on capacity possibilities of authorised tutors for particular subjects.

The personal staff of the course was created according to clearly specified powers and responsibility and it is subordinated to flexibility and functionality of the working team.

Professional guarantee of the course designs the course as far as content and professional aspect concerns, he is responsible for the timeliness, professional level and didactic realisation of the course. He prepares studying materials, project topics for the continuous work within the course, as well as semester projects for the participants of the course. He supervises the work of the tutors and monitors the running of the course.

Manager of the on-line materials creates, on the basis of materials form the professional guarantee, an information system on WWW pages, modifies the delivered web pages and out of these materials he designs web pages for this information system of the course. He keeps up the information system and updates it regularly.

Administrator takes part in working out the information system from the point of view of administration. He ensures advertising of the course, recruiting, registering and specifying which course the participants are going to attend. He checks whether the projects are submitted to the tutors according to the time schedule, he evaluates particular projects, monitors running of the course within the framework of information system.

Tutor leads his participants on the basis of worked out materials to the given course and prepared information system. He accepts, evaluates and classifies projects submitted during the course, consults the working out of the semester project with particular participants. He proposes to professional guarantee and together with him he gives credits or certificates for the given course.

Editor and evaluator works out opponent opinion on the materials for the distance course, consults with the professional guarantee comments aiming at improving materials for the course. He takes part in finishing of all professional materials for the distance course of further education. He works out, realises and evaluates the course, consults the innovation of the course.

Running of the course

Persons interested in course fill in application form, which is on the web page of the distance course. On the basis of selection criteria set by the guarantee of the course, the

administrator selects the participants and he/she let them know the result via e-mail. Each participant will be lead by the tutor.

The participants of the distance course will be studying individually, from the prepared materials published in the information system of the course. Once in a week or twice a week (according to the time schedule) they will send processed partial projects to their tutor via e-mail, the topics of which are worked out for the whole course in advance. The tutor corrects the projects, he evaluates them (according to the point scale) and returns them back for further over-studying. At the end of the course, the participant submits his project to the tutor.

The administrator prepares for the tutor list of the participants fulfilling the conditions for granting 3 credits or certificates according to achieved points within the course. The tutor hands over the credits and certificates to the successful participants of the course.

The participant of the course presents his knowledge and skills gained during the course through the partial projects. The particular outputs are aimed at the needs of practical teaching. Semester project is created by the file of web pages or by power point presentations which was created and realised for special teaching unit chosen after agreement with the tutor.

Content of the course

1. **week: -** **graphic on PC**, characteristic of basic graphic formats, scanning, work with clip-arts, searching for images on WWW, recovery of images (pictures) from the digital photo camera, video camera, work with image (picture) in the text file.
2. **week: -** **processing of static image**, characteristic of basic components selected graphic programs, creation (formation) of graphic applications and their preparing for presentation and printing
3. **week: -** **picture animation**, creation principles and work with animation, characteristic of basic formats, creation of own animation and its using in education,
4. **week: -** **video processing on PC**, basic video formats, analogous and digital processing, linear and non-linear cut, conversion between particular video formats, graphic cards and video cards for video processing on PC, PC+video+TV+camera interconnection
5. **week: -** **video sequence preparation**, methods for diminishing of memory intensity, technical-didactic principles of video sequence creation and their application in education,
6. **week: -** **sound on PC**, basic physical characteristics of sound, formats for sound recording, sound systems - their principles and technical parameters, basic functional elements of technical devices for recording and processing of sound, sound card, microphones and mixing device(desk/pent),
7. **week: -** **sound recording and processing on PC**, characteristic of software possibilities during the work with sound, recording and editing of sound recording, possibilities how to use sound in education
8. **week: -** **multimedia CD RO**M, overview of multimedia for the subject concerned, didactic principles of multimedia CD ROM usage in education, principles, methods and system of designing/creating multimedia CD ROMs, own project proposal on how to use CDs in education
9. **week**: - **multimedia presentation under the Power Point software**, basic elements, possibilities, didactic principles of presentation, draft of own presentation

10. week:- **semester project** - *proposal, didactic principles, content and *forms of work with the proposed project, presentation structure

11. week:- **semester projects**, composition of particular multimedia elements in the final presentation

12. week:- **semester project**, work on own semester project, presentation of the project, defence speech trough the discussion club, granting credits and certificates, final discussion with the tutor

We hope that we will manage to prepare and launch (examine) the distance course that will find support and which will contribute to the education quality of the subjects concerned and to the wide-spread usage of multimedia elements in the educational process.