

# Experience with the Distance Learning Bachelor Study in the Field of Finance, Banking and Investment

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**Abstract**—Three years ago Faculty of Economics started the internal faculty project named “Preparation and realization of the distance learning bachelor study in the field of Finance, Banking and Investment”. Last year we reached the most important milestone – we got the first Bachelor graduates in August 2008. Based on the students’ feedback we extended the project objectives by preparation, implementation and realization of distance learning in engineer study program. One aim of the paper is to present current state of the mentioned project, to show the improved timetable of the particular phases of the mentioned project.

**Index Terms**—distance learning, LMS Moodle, education

## I. INTRODUCTION

During previous years, one of the most important change of higher education in Slovakia was transformation of classical engineer or master study, represented by one five or six year lasting high education cycle into two cycles represented by bachelor study, which takes minimally three years and two- or three-years engineer or master study.

This transformation is one part of the Bologna Process, represented by Bologna Declaration and confirmed by 45 countries, where their representatives committed to coordinate their policies to establish the Higher Education Area (EHEA) by 2010 [1].

This transformation needed not only transformation of existing university study programs in Slovakia, but many other changes like subjects’ content, reorganization of pedagogical staff, administration, etc.

Moreover nowadays, in the age of the information society, we cannot imagine our lives without ICT (Information and Communication Technologies) like computers, cellular phones, the internet and other communication tools. Since ICT changed our lives, they affected the education process, too. The internet and computers have been widely used in educational process for decades. It is understandable, that previously used ways of providing distance learning, like delivering the study materials through postal services, were replaced by more comfortable ways, e.g. the internet and electronic media.

Considering previously mentioned facts (the transformation of educational system and widening ICT), one of many changes that had been done, can be represented by our faculty internal project. Within this project faculty management agreed, that in the meaning of staying competitive in the education market it is necessary to propose

students something new and progressive. As many similar institutions, the Faculty of Economics, Technical university of Kořice tries to provide different modes of learning and because every year interest of the student exceeds the possible faculty capacity more than several times, it seemed to be a great idea to reorganize our external study form from classical part-time study, when students have lessons at the faculty every week, to fully distance learning, when students have possibility of self-study using eLearning courses provided by learning management system (LMS).

In this paper we would like to represent our experiences with implementation of distance learning at the Faculty of Economics and our first results.

## II. PLANNING OF PROVIDING DISTANCE LEARNING AT THE FACULTY OF ECONOMICS

The first step in planning any project is to determine the main objectives and milestones, which should be evaluated during the project running and after finishing it. For internal project “*Preparation and realization of the distance learning bachelor study in the field of Finance, Banking and Investment*” following main objectives and milestones were found out:

Main objectives:

- introduction of the distance on-line bachelor study at the Faculty of Economics,
- enhancement of quality of existing full-time and external study at the faculty of Economics,
- Milestones:
- retraining of all pedagogical and administrative staff interested in the project,
- preparation of study materials for bachelor study program,
- implementation and realization of distance learning through a particular LMS.

Distance learning can be described as learning where the instructor and the students are in physically separate locations [2]. Distance learning covers delivering study materials and studies itself by correspondence, video or satellite broadcasts, or by mentioned eLearning.

The decision to provide full bachelor study using distance learning was based on huge experiences dated back to the turn of centuries. The Faculty builds on knowledge, skills and experiences gained during the participation in various distance-learning oriented projects [5], [6]:

- “Effective Methods of Teaching” (IDEP G/239/02/61300, duration 2002-2004),
- “Preparation, management and strategic planning of the educational projects” (IDEP G/360/02/61300, duration 2003 -2004),
- “WEBUSINESS Learning System (WEBLYS)” (KEGA - 3/114803, duration 2003-2004),
- “PERSON-APEL Course – Distance Education Course for Personnel Managers, Educational Consultants and Advisors” (IDEP G/237/01/13901, duration 2003-2004).

Complete reorganization of existing part-time mode of study includes much more tasks as previously listed projects. Many critical problems have to be handled carefully - training of all faculty staff, selection of an accurate LMS which is really user-friendly, reorganization of subject’s time table, etc.

At the year 2003, when faculty management decided to start the internal project “Preparation and realization of the distance learning bachelor study in the field of Finance, Banking and Investment” where above mentioned problems were integrated into tasks and particular project phases with respect to the determined milestones. Table I represents our first project task schedule.

### III. DISTANCE LEARNING PROJECT REALIZATION

#### A. Management and organization preparation

As Table I shows, the first step was preparation of organization and management for distance learning.

This step included identification of positions, authorities and rules of all involved staff. In the first iteration we came out from various sources where information concerning distance learning is available [2], [3], [5]. Usually, when institution decides to provide distance learning, it develops specialized department, which is responsible only for this form of study. The dissimilarity at our faculty

TABLE I.  
INTERNAL DISTANCE LEARNING PROJECT PHASES (PLANNED IN Y. 2003)

| Year                   | Task   |
|------------------------|--|
| <b>PHASE I</b>         |  |
| 2003                   | <ul style="list-style-type: none"> <li>• Preparation of organization and management for distance learning</li> <li>• Searching for appropriate LMS</li> </ul>                    |
| 2004                   | <ul style="list-style-type: none"> <li>• Training pedagogical, technical and administration staff</li> </ul>   |
| <b>PHASE II</b>        |  |
| Sept. 2004 – Aug. 2005 | <ul style="list-style-type: none"> <li>• Preparation of distance learning study materials for bachelor course</li> <li>• Preparation of on-line courses in LMS Moodle</li> </ul> |
| <b>PHASE III</b>       |  |
| Sept. 2005 – Aug. 2008 | <ul style="list-style-type: none"> <li>• Realization of the distance learning bachelor course</li> </ul>   |

is that distance learning is provided by the same staff supplying full-time education. In this time we identified the following roles:

- *Manager, Coordinator and Mentor* “in one” is as Manager and Coordinator responsible for whole organization like training new participating persons, subjects’ timetable, proposal of institutional documents, realized course and service quality monitoring, institutional evidence and reporting, etc. and as Mentor helps solve students possible problems with other distance learning staff, organize common workshops and meeting for students and staff, etc.,
- *Administrator* assumes the responsibility for ITC aspects like LMS Moodle administration, administration of participating students and faculty staff, PC laboratories functionality, helps lectors with LMS Moodle like updating electronic study materials to particular courses, etc.,
- *Lectors* are represented by pedagogical staff of the faculty and their main task is to provide particular subject using distance learning preserving the quality and professional level equal to full-time students. During course duration they have to communicate with students actively, evaluate their progress and improve the course in view of students’ requirements,
- *Tuition officers* are responsible for students’ enrolment organization, students’ evidence and preparation of reports for faculty management as one of final evaluation sources.

The relationship among involved staff is described by Fig. 1.

#### B. Searching for appropriate LMS and faculty staff training

After finding out the main roles within distance learning it was necessary to find appropriate LMS and to prepare rules, methods for all staff and students who will participate in distance learning.

It is a well-known fact that today educational processes are strongly linked to ICT and eLearning technologies [3]. In the world of eLearning and course design a lot of effort

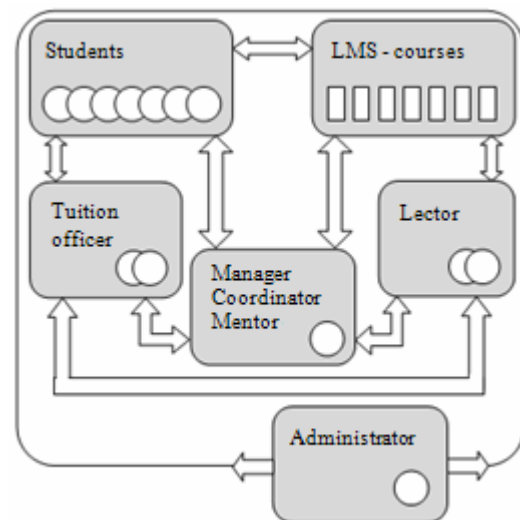


Figure 1. Distance learning participant relationships

has been put into research and ideas how to organize and structure on-line course environments. Helping to fulfill this objective the LMSs are used. LMS allows institutions to provide on-line environments for distance, on-campus and hybrid learning. A wide range of commercial and open source products are now available (WebCT, BlackBoard, ANGEL, eCollege, Intralearn, PostNuke, eDoceo, Moodle, etc.). We did serious selection of choosing the best LMS and our research is shortly described in [3], [7].

Finally we decided to use LMS Moodle [8] due to the requirements of today's web development (portal structured webs) and easy navigation (Fig. 2). Besides basic functionalities as various files type publication, user and course management, it provides the possibility of exchanging private information between teacher and students like evaluation of assignments, feedback from students, etc. as well.

In spite of the information age we are living, it is necessary to say that many people in Slovakia still have only low level computers skills. Usually they know only to turn on computer, use e-mail and download something from the web. Unfortunately, our faculty staff was in the same situation, so we had a lot of work to "upgrade" their knowledge to have more digital competences to be able to use LMS for providing study materials and communicate with students through LMS or e-mail, to prepare specialized distance learning study materials and activities. The training of involved staff was divided into two parts:

- ECDL like courses guaranteed by teachers from faculty's Department of Applied Mathematics and Business Informatics. These courses were concerned on ECDL modules 2, 3, 4, 6 and 7.
- LMS Moodle courses provided through Moodle. There were created pilot courses, one in which teachers had a role of students and they had accessible materials about LMS Moodle and their functionalities, they could "play" with tests, discussions and assignment and one for teacher having role of teachers and had a possibility to train uploading materials to web, creation of tests, chats, discussions, assignments, etc.

Both of courses are handled by distance learning coordinator and administrator who help the teachers with their problems with working with LMS Moodle.

### C. Preparation of distance learning study materials

Except the special way of providing study materials, distance education requires study materials specially adapted to distance learning [3], [4]. Modifications of classical materials are connected to adding possibility of student's independence from his/her colleagues, lector and timetable. Moreover the "classical" study materials had to be modified in the way of respecting our basic rule: "*Distance students must be equal in final knowledge to full-time students*". It is hard task to meet this rule, because in face-to-face teaching lecturer has possibility to describe problems in more ways, more clearly if he thinks that there is some problem in student's understanding. This direct feedback in distance learning is missing so the author of study materials must suppose the possible problems and has to avoid them in advance.

For each distance learning study material had given same structure. Each chapter of material has to include its mission, aims, theory, self-revisory questions, exercises, conclusion and references.

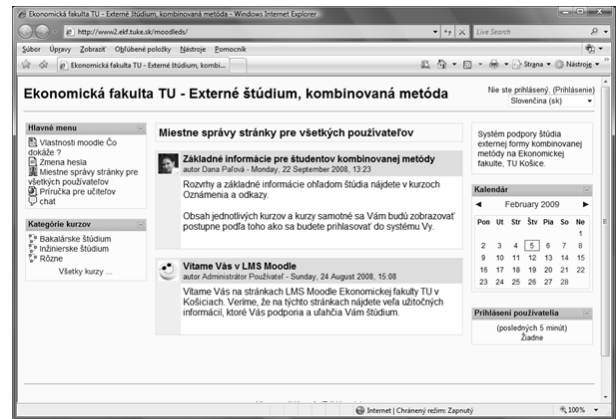


Figure 2. LMS Moodle environment

After study materials have been prepared they are implemented into course finally realized through LMS Moodle. Modern learning is not only about passive receiving information from teacher, also about active and cooperative learning and the student's assessment. That is why we set up the rule that apart from the materials students must have accessible more information like course schedule, conditions for graduating subject, supporting animations, links, activities, etc. in every course.

### D. Realization of distance learning project

Realization of education process started in the academic year 2005/2006 by the 1st year distance learning bachelor course. Because majority of our distance learning students were working people without having time for daily study or weekly visits to the faculty (as it is expected for full-time and classical part-time study), we decided to make their study easier. Distance learning was held in not overlapping time blocks, e.g. the time period for every course is set at the beginning of the academic year, so students do not have to separate their energy and attention into different subjects at the same time.

After finalizing the 1st year, we realized that the original plan of the project needed some revisions. Finally we agreed on improved plan and realized distance learning bachelor study according to the schedule described in Table II.

Every academic year starts by introductory meeting for students and lecturers teaching the students in the coming school year. The subjects and their content, the schedule for the particular year are shortly presented within this meeting. Because of the first personal contact this meeting is appreciated by students and by lecturers too.

During students' study, they have at their disposal various asynchronous and synchronous communication tools like messages, forums, chat, virtual classroom, e-mails, etc., which are frequently used not only for communication with lecturer but with their classmates, too. Moreover, students have at their disposal one personal tutorial they in which can discuss their problems. As it is in the case of the introductory meeting, the personal tutorials are highly appreciated. Every student must attend the last meeting – exam. We decided to do it face-to-face, because it is the only way by which we can guarantee the quality of evaluation and knowledge the particular student.

One of basic objectives of this project is to monitor the quality of provided education. That is why after complet-

TABLE II.  
INTERNAL DISTANCE LEARNING PROJECT PHASES (IMPROVED PROJECT SCHEDULE Y. 2006)

| Year                               | Task   |
|------------------------------------|--|
| <b>PHASE I</b>                     |  |
| 2003                               | <ul style="list-style-type: none"> <li>Preparation of organization and management for distance learning</li> <li>Searching for appropriate LMS</li> </ul>  |
| 2004                               | <ul style="list-style-type: none"> <li>Training pedagogical, technical and administration staff</li> </ul>   |
| <b>PHASE II, PHASE III (Mixed)</b> |  |
| Sept. 2004 – Aug. 2005             | <ul style="list-style-type: none"> <li>Preparation of distance learning study materials and on-line courses in LMS Moodle for the 1st year bachelor course</li> </ul>  |
| Sept. 2005 – Aug. 2006             | <ul style="list-style-type: none"> <li>Realization of the 1st year distance learning bachelor course</li> <li>Preparation of distance learning study materials and on-line courses in LMS Moodle for the 2nd year bachelor course</li> </ul>   |
| Sept. 2006 – Aug. 2007             | <ul style="list-style-type: none"> <li>Realization of the 2nd year distance learning bachelor course</li> <li>Preparation of distance learning study materials and on-line courses in LMS Moodle for the 3rd year bachelor course</li> <li>Improvement of provided the 1st year bachelor study related to students' feedback evaluation</li> </ul> |
| Sept. 2007 – Aug. 2008             | <ul style="list-style-type: none"> <li>Realization of the 1st and the 3rd year distance learning bachelor course</li> <li>Improvement of provided the 2nd year bachelor study related to students' feedback evaluation</li> </ul>  |
| Aug. 2008                          | <ul style="list-style-type: none"> <li>Final state examination – the first Bc. graduates</li> </ul>  |
| <b>PHASES I – III EVALUATION</b>   |  |
| Aug. 2006                          | <ul style="list-style-type: none"> <li>Evaluation of students feedback on quality of provided subjects in the 1st year of bachelor study</li> </ul>  |
| Aug. 2007                          | <ul style="list-style-type: none"> <li>Evaluation of students feedback on quality of provided subjects in the 2nd year of bachelor study</li> </ul>  |
| Aug. 2008                          | <ul style="list-style-type: none"> <li>Evaluation of students feedback on quality of provided subjects in the 3rd year of bachelor study</li> <li>Evaluation of distance learning system by the first bachelors</li> </ul>   |
| <b>PHASE IV</b>                    |  |
| Jan. 2008 – Aug. 2008              | <ul style="list-style-type: none"> <li>Preparation of distance learning study materials and on-line courses in LMS Moodle for the 1st year engineer course</li> </ul>  |
| Aug. 2008                          | <ul style="list-style-type: none"> <li>Reorganization of provided distance learning study related to graduates' feedback evaluation</li> </ul>   |
| Sept. 2008 – Aug. 2009             | <ul style="list-style-type: none"> <li>Realization of the 1st and the 2nd year modified bachelor study</li> <li>Realization of the 1st year engineer course</li> <li>Preparation of distance learning study materials and on-line courses in LMS Moodle for the 2nd year engineer course</li> </ul>  |

ing each subject, the students are asked to fulfill the questionnaire (feedback). The feedback consists of 22 questions concerning different parts of the subject like the content of subject, the way and quality of lectures, the quality of study materials, communication between teacher and students, the evaluation methods and the quality of used LMS Moodle. The feedback evaluation is used for continual improvement of existing study materials and the way of providing distance learning. That is why the evaluation results are handed to management of faculty, to lecturer and guarantor of the subject and is published in LMS Moodle (in specialized course with access only for students).

During the years 2005 – 2008 we followed the schedule represented in Table II and in August 2008 we reached the most important milestone – after three year of study 18 students completed distance learning and gained the degree Bachelor.

Reaching this milestone was the right time to do global feedback from the study organization perspective. The most important note came out: from the student's point of view this studying form requires much more motivation, self-discipline and responsibility and many students missed the face-to-face teaching. That is the reason to reorganize the way of managing the study as a whole. We canceled the schedule of subjects included not overlapping blocks (serial subject study) and added possibility to study one subject longer with more optional face-to-face lessons (parallel subject study). Now this way is realized, so we have no feedback from the students at this time.

Moreover, our bachelor graduates formulated demand on possibility to continue the study at the faculty's engineer program in the same, distance learning, way and faculty management decided to extend project to implementation of distance learning method into engineer study program. The duration of internal project is prolonged to August 2010 when the first distance learning engineer state final exam are planned.

#### IV. THREE YEARS EXPERIENCE EVALUATION

As was mentioned above, we started the pilot bachelor course in 2003. Fig. 3 shows the numbers of our students participating on distance learning bachelor course during years 2005 – 2009. Using this graph you can easily determine how many students was able to graduate and follow in next year of study. The zero in the 1st year in academic year 2006/2007 was caused by break for better preparation of materials and courses.

The first 32 students started their study in September 2005. At 27th of August 2008 18 of them finished their bachelor study by passing final bachelor state exam.

Today some of them (17 students) are in the 1st year of engineer course. Totally we have 27 students in the 1st engineer course, where 20 of them are our graduates (17 distance learning and 3 former full-time students) and 7 of them are from other economic universities.

Fig. 4 represents comparison of percentage of successful students in the 1st year of bachelor study before and after improving study materials. In this paper the 1st year serves as example how the systematic evaluation and following improvement of provided courses can help students to graduate the subject. Other years in both bachelor and engineer course are continuously evaluated and more

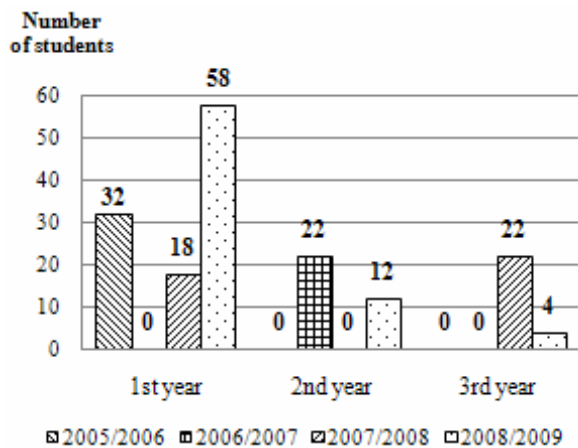


Figure 3. Number of distance learning students

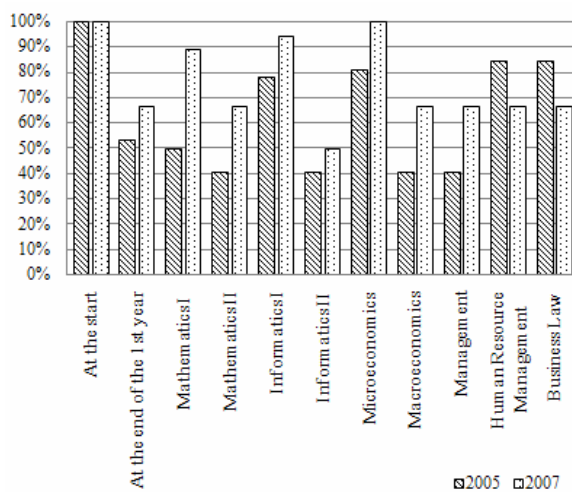


Figure 4. Comparison of percentage of students graduated in the 1st year subjects in 2005 and 2007

complex analysis will be published in other publications and of course on LMS Moodle.

### V. CONCLUSION

Even more and more educational institutions in Slovakia are providing new methods of education based on using ICT. The generally dot.com boom including the teaching methods is related to the global economic changes affecting the countries. One of these changes is the need for the highly skilled workforce to enhance national competitiveness and to sustain the development of knowledge based economy.

As was presented, our faculty reached the first most significant milestone – last academic year we had the first distance bachelor graduates. One of important facts of successful realization of distance learning and chosen methods is that our graduates wanted to continue in the same style of study at our faculty. That fact was starting point in deciding question whether prepare or not prepare second level of higher education – the engineer degree.

This academic year we have the first students in the distance learning at the engineer course. Just future will show whether our decision and work are right at right time.

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