

# Virtual University in Trnava – Experience

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## Abstract

*Complex e-learning system, as base for university system, according to strategic decision made by faculty management in 2001, has started to be built at the Faculty of Education of Trnava University. Realization of this system has been supported by several grants (e.g. development grant of Ministry of Education, IDEP program of NOS-OSF, VEGA and KEGA grants etc.)*

*The process of e-learning infrastructure building at the Faculty of Education of Trnava University, the design of architecture for e-learning, and problems of technological infrastructure implementation and services are described in the proposed paper. The focus of the paper is put onto author's experience with the e-learning management at the Faculty of Education. Our experience is concentrated into general recommendations at the end of the paper.*

## 1. Introduction

The actual topic of e-learning has touched our faculty too. In line with the strategic decision of management, a complete system of e-learning, which will create the base for the academic system of e-learning, has started to be built. The realization of this learning system is supported by several grants (e.g. development grant of Ministry of Education, IDEP program of NOS-OSF, VEGA, KEGA, etc.)

## 2. The Starting-Points of Solution

The questions of e-learning in the world touch not only universities, but many private companies too. In addition, many non-profit associations, which are busy with publishing of standards, were established during developing of e-learning solutions. Distributors of electronic content, the software appointed for different spheres were formed. From the software structure, which is used in e-learning, we can mention LMS (Learning Management System), author tools for producing courses, Course Packagers etc. The unification of raised quantity

of standards into superior integrity belongs among the latest trends in e-learning. The most popular unifier is the association ADL, which regularly produces new versions of progressive standards SCORM (The Sharable Content Object Reference Model). The second most popular standard, one of the older ones, which still holds its wide area of influence, is AICC. AICC is also the name of association looking after its development: Aviation Industry CBT (Computer Based Training) Committee. SCORM includes the definitions of standard AICC too.

AICC, as shows its acronym (Aviation Industry CBT Committee), first evolved activities for the aviation industry, where they were interested in computer-based training. However, later this standard was extended and nowadays it is well-known term in e-learning domain. However, the definition of AICC did not cover all needs of e-learning, so we cannot be surprised, that together with it, many new standards raised. Well-known companies engaged application of some general rules in this area. For example it can be mentioned non-profit association IEEE (Institute of Electrical and Electronics Engineers, Inc.) or consortium IMS (full name IMS Global Learning Consortium, Inc., where IMS means Instructional Management System). The sufficiency of standards rose to cover the whole area, but if their number exceeds very low given limit, their adherence will become uncomfortable. It is not reliable that in some chosen LMS will be supported the right group of standards, which we need and we decided to follow during production of courses. Because of it the association ADL came into the process with its standard SCORM, which tries to create reference model based on prior standards. SCORM was originally purposed for US Department of Defence. Nevertheless, it found wide application in practice, as well. SCORM includes all aspects of influence on LMS systems, sellers of author tools, designers, and developers of electronic contents, providers of different electronic trainings etc.

### **3. The Description of Our Solution**

#### **3.1. Using of Standards**

The norms and standards caused development and faster progression in every discipline and industrial branch. Following that, the norms and standards have a great point in the area of e-learning too. It is proper to establish the use of applicable standards and norms into practice as early as possible. Collaboration, either in larger or smaller degree, is better tied between two organizations, when they both follow certain standard, so we have decided to do it this way. The question for us has not been about if we accept, but how to adapt standards.

#### **3.2. Technical Establishment**

For building up the functional e-learning system, it is necessary to have useful technical equipment. First, we need an LMS and optimally the one, which adopts the standards. Moreover, it has to be guaranteed that courses, which would be put into this LMS system, will follow the same standards as the selfsame system, to avoid useless complications. If we are not able to assure fully this, it will be better to find someone else competent, making it for us – technical producer of courses. We solved this situation by collaborating with one private company.

Recently our faculty is in the situation, when we deal with selection of proper LMS. This year we have possibility to intensively test EKP™ LMS in practice. We had an opportunity in real operation to find out what LMS should contain and consequently to come closer to conception of LMS system, which we will need. EKP™ supports two basic standards AICC and SCORM. The localization into Slovak language is ongoing process during writing of this article. The system was installed on DELL server, placed at the head office of Trnava University. EKP™ installation used server with installed Oracle 8i as database. Standard Internet browser installed on the client side was sufficient. In addition, when courses, which are to be mentioned later, were made by author tool Authorware, appropriate plug-in for concrete browser had to be installed. Our students used mostly browser Microsoft Internet Explorer.

#### **3.3. Initiation**

The trial run included activities of two electronic courses. Production of the courses started by preparation of materials from producing raw materials (texts, pictures, scenarios, etc.) and was fully in hand of project team, those members are employees of university, collaborating with company taking care of technical realization. After

building the courses up, they could be published as off-line (e.g. on CD) or on-line (it was our primary case). We used both of these possibilities during our consecution. We disposed our trial run of EKP™ for on-line publication of courses. Off-line courses were at CD' disposal. We divided process of initiation into two basic areas, the installation, and the implementation. The installation was related to starting-up of our test server. The implementation involved service and running of server and courses during the study. The invited installer looked after installation of the server. The person responsible for administration of EKP™ looked after running up of made courses during this activity. The same person attended to their undisturbed running.

#### **3.4. The Own Operation**

On this operation, we found out how this system works in practice and what problems may be connected with its application. One of the technical problems, touched by applying author tool Authorware, is that appropriate plug-in module have to be installed at client side. If accidentally, automatic installation of plug-in had not started, students thought that it was insoluble problem, which they were not able to solve themselves, but after delivery of instruction by e-mail, everybody made it. There were no problems related immediately with the activity of server EKP™ during the operation. Made courses communicated with EKP™ without problems until the end of trial run.

The system has very comfortable and easy-controlled environment, which is easy to adapt to, thanks for skin support and customisation. The users are connected by assigned login and a password. Students and tutors adapted to the system relatively fast and we verified the declarative attribute, that the system is well adapted to people responsible for administration of the system. Administrator enters into the comfortable environment for user, which provides him the same comfort work as to common users. The primary difference between administrator and common user is that the administrator disposes with corresponding administrator's tools. System administrator can divide the management of system among some people by access rights grant. Some people can look after reviews for groups of students and their enrolment to courses, others installation and management of learning modules etc., One person covered all these activities, in our trial run case. At last, it depends on measure of this system by the specific organization.

Tutors took care of solving the problems of users. They answered the questions, touched the scientific aspect of subjects. All students reacted individually; some were more active and others less. Two students withdrew from on-line study and migrated into presentation form.

More students gave the displeasure with some matters, but only two left. This problem was unexpected enough for us. Their reason was that the materials could not be printed and they could not study on-line without print. This reason seems to be too illogical. However, this proves of insufficient information about on-line study. This aspect of problem, information, should be respected, because students are an important part of educational process.

#### **4. Experience, We Would Like to Refer to**

The question of following the standards is wide problem. It often happens that the producer of the course and the manufacturer of LMS declare that their products satisfy the same standards, but even though they together do not work at the first time. It happens because of minor divergences, which can start up at implementation of these products.

Some people think that the work of teacher finishes just at the preparation of authors' materials for some electronic course. However, it is mistake. Their work by far does not finish with it. Authors of underlying materials mostly become tutors and then they look after smooth running of lessons and reviewing of students. In addition, there are next propositions. For example, every course, non electronic too, is always dedicated for some target group, thanks for what happens, that some course must be contently modified for different groups of people, what authors take care of. In addition, the contents of the course can go out of date from scientific and contextual view, what authors of the course look after, as well. The teachers become patrons of one course or group of courses and henceforward stay busy with the process of education.

It is better to leave production of individual courses to technical teams. As we mentioned, we had followed exactly this manner. The technical team partly enriched us with their knowledge during their work, so we can weigh, what is used in this direction. The basic components of Macromedia Authorware, among that belong mainly so-called Knowledge objects (KO), were used during the development. They essentially made the development of the course easier. Using of KO, the coding was eliminated, that is difficult to avoid at the development of the courses. The necessary data about student's activity within the courses or the tests were transferred with no problems and recorded by the LMS. KO were also used in situations which required the interaction with student, e.g. by the form of solution of the simple task or answering

the questions etc. Of course, everything has its advantages and disadvantages and the using of KO brings, except certain advantages, some disadvantages too. KO is closed object with no possibility of change and sometimes it was necessary to adapt the course to the structure of KO during the course creating.

Our first experience with e-learning showed us we must afford more information to the participants of e-learning process. Information in each segment is engine, how to provide faster, and more effective formation of e-learning into the practice. Students should know where they are going to, so as, in case they have an option, they will be able to decide correctly which form of study is more suitable for them. Authors and incoming tutors should know how to prepare materials for courses and to carry courses on. It is needed to start discussions about e-learning, to publish textbooks and articles, to inform students etc.

#### **5. Summary**

Our faculty has decided to apply e-learning into the practice. Our management has accepted we will become susceptible to the others by following the standards. The other determination, like the creation of electronic courses, the selection of proper LMS etc. was conformed to these decisions. Within the incitation of activity in e-learning, we were in a position to test LMS system EKP™. During its operation, we acquired a lot of valuable information, which will certainly help us at next development of e-learning at Trnava University. We confirmed ourselves in information is very important element at the development, what will lead us in application of corresponding orders.

#### **6. References**

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