Assuring flexibility to educational platforms
Case study: UniBuc Virtual Campus

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Abstract
In today Information society we confront rapidly changes in most of the fields, and especially in the IT field. In order to keep our competivity and to respond permanently the needs of our students is a must assuring flexibility to the E-learning solution that we use.
The Department for Open and Distance Learning of University of Bucharest has developed an educational platform, UniBuc Virtual Campus. In this paper, it will be presented the manner this portal was designed for further changes.
First time the platform was introduced to the use of ODL Department’s students (June 2002) there was available only 6 services. Meanwhile they were designed and developed another features thanks to continuous feedback from our students, tutors and course managers.
Today, UniBuc Virtual Campus represents a strong virtual learning environment which integrates 16 tools for communication, management, eLearning and feedback. Some of this tools have multiple improvements comparing the first version.
These were possible thanks to the IT specialists that designed the portal from the beginning so that it easily support further extensions and modifications.

Keywords: Flexibility, E-learning, Educational platform, Virtual learning environment

1 Introduction
E-learning is learning based on information technologies, and particularly based on the Internet. E-learning educational system has a lot of advantages, such as flexibility, availability, time and resources savings and it respects the individual learning rhythm of each of the students.
Using a virtual educational platform is a must for every university or organization that aims to assuring quality eLearning services to their students. Developing personalized platforms is the best choice, unfortunately this is a lot of resources spending option and it may be applied only by a small number of eLearning providers with large budget.
When you start to develop a virtual learning environment you have to think a way so that this application supplies some of the advantages offered by the traditional face-to-face education. Also must be considered technical characteristics of the platform so that these to respond to the needs and to the resources of the final users’ computers and Internet bandwidth. The design team must be compound from psychologists and IT specialists.

2 Software flexibility

Information technology is one of the fields with faster and in the same time continuous changes. Today, a software application development is in an ongoing process so that it satisfies the continuous new needs of the final users.

The property of software to easily support further extensions and modifications is defined as software flexibility.

Zhao (1998) proposed the following two concepts related to software flexibility:

- System adaptability represents the capability of the system to support modifications with short or no interruption in the business process.
- System versatility (or system robustness) is the characteristic of the system to allow flexible procedures to deal with exceptions in processes and procedures.

3 UniBuc Virtual Campus

3.1 General information

UniBuc Virtual Campus was developed in ODL Department’s laboratories to respond the needs of the students, teachers an administrative personal.

UniBUC Virtual Campus represents an educational platform that integrates communication, management, e-learning and feedback tools.

The major characteristics of this virtual learning environment are the following:

- services for synchronous and asynchronous communication;
- continuous evaluation of the students, giving them the possibility to have real-time feedback;
- options of to integrate online courses on the platform;
- possibility for personalize the virtual learning environment;
- services for managers and tutors for administrate the students, the face-to-face meetings and the exams;
- a friendly graphical user interface.

Communication

The first page we see after we logged on is the announcements page called Homepage. Here is posted general interest news, used mainly by tutor and course manager.

Calendar is a virtual agenda used to plan and also to remind the important dates such as date of the final exam or tutorial meetings in a semester.

The Chat is the perfect way for having a real-time communication. Tutors and their students can establish virtual meetings on the chat. The chat is also an efficient tool for collaboration between students who are working to a common project.
Discussions forum is a tool for asynchronous communication between tutors and students and between students. The Forum is structured under the form of threads; each thread contains a different subject. The posts can be sorted by date or by thread, having a tree structure.

The Messages is a service like email, with the difference that the messages can be sent and received only within members from the same group of UniBUC Virtual Campus.

Management

In UniBuc Virtual Campus have been embedded some specific tools for open distance learning management.

The Classrooms service is used by the course manager for reserve a classroom (specifying the date and time), but also the resources needed for that activity.

The Tasks offer the possibility to give tasks to some persons. Every task has a start date and an end date, a name and a clear description. A task is seen only by the involved persons, selected by the person who started the task.

The Administration tool is used for group administrators (usually course managers and tutors) for add new users, add or delete downloads, add surveys or courses.
E-learning

An important advantage of eLearning is the possibility of instruction 24 hours a day, seven days in a week and anywhere. A major feature of the UniBUC Virtual Campus is delivery on-line courses to our students. These courses can be accessed from the Courses section of the educational platform.

The tutor can be posted some additional material or homework to the students by using the Administration tool. Students can take these additional files from the Downloads section.

Our educational platform also provide Exams tool, used for continuing students evaluation. When the student finishes the test he or she receive the result, and this result is stored in a database that is access by the tutor using the portal.

The Grades tool allows to the students see all their marks. A student is able to see only his own mark.

Feedback

Feedback from our students is important for providing a quality eLearning platform. That is why we integrate Survey and Statistics tools in the UniBUC Virtual Campus.

Using the Surveys tool the tutor or group administrator can create a quiz and find out the student’s opinion about some subject. What is important to the Surveys is that it keeps the secret the identity of the respondents.

Using the Statistics the group’s administrator can see for each user some information about the services he or she uses (for example total number of sent messages or announcements posted). Above is a Print Screen with an example of using the Statistics tool for the user Alina Boboc-Corcotoi:

![Figure 2. Statistics tool](image_url)
Designed for change

UniBuc Virtual Campus is a strong educational platform that was developed in ODL Department’s laboratories and was introduced for the first time in June 2002 to the use of the students from Master Program “Computers Networks” and Reconversion Program “Applied Informatics” That time to the platform was available only six services (Announcements, Chat, Discussions, Messages and Courses). Thanks to the feedback from our students, tutors and administrative personnel we started to design new features.

Today we use a real virtual learning environment that offers to our students, teachers and administrative personnel 16 tools for management, communication, e-learning and feedback that we described before.

Meanwhile we didn’t develop only new tools but also we considerably change some of the existing ones. A significant example from this point of view is the Messages service. In February 2003 this tool looked totally different from today, like in the picture above:

![Messages service in February 2003](image)

Figure 3. Messages service in February 2003

It is easy to observe new options (Deleted messages and Read receipt) to this service. Also the position of the options in the page is changed, how we can see in the following picture.

![Messages service in July 2006](image)

Figure 4. Messages service in July 2006

In this moment we already have 3 series of graduated students from the Master Programs that have been taught, learned and evaluated through UniBuc Virtual Campus.
4 Conclusions
Assuring flexibility to educational platforms is the real challenge of today e-learning system. Flexibility is a necessary condition of quality in distance education based on the Internet.

The designers of virtual learning environments should consider from the beginning the further changes in architecture of the application but also the modification of the graphical user interface.

References


