The Implementation of E-Learning Systems for the On-line Courses Management

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Abstract
The virtual environment represents the tool through which the access to the course material, is ensured, teacher-participants interaction is achieved as well as the content management and the course activities. These learning environments permit the use of multimedia technologies through text incorporation, images, audio, video files or animations.
Like an instrument for the courses editing HTML (HiperText Markup Language) language was used, which represents a subset of SGML (Standard Markup Language).
For implementing an online courses program or some online collaboration spaces, one of the important decisions are referred to the virtual environment - VLE - Virtual Learning Environment or LMS - Learning Management System, where these will take place.

Keywords: E-Learning, Virtual Learning Environment, Learning Management System, HTM - HiperText Markup Language

1. Introduction
The meaning we accept for e-learning is synonymous with online education, online courses, Web-Based Learning, which doesn’t suppose an interaction, permanent communication with a teacher.
E-Learning, like the convergence between learning and Internet, requires that:
• The process of learning takes place in a virtual classroom;
• The educational material is accessible on the internet; it includes text, images, sending to other online resources, audio and video presentations;
• The virtual classroom benefits from a teacher orientation (facilitator, moderator) who plans the activity of the participants’ group, subjects to their debate aspects of the course in asynchronous conferences (discussion forums) or synchronous (Chat), delivers auxiliary resources, comments on homework, showing everyone where they had to insist;
• Learning becomes a social process, through interaction and collaboration, the group of the participants and the instructor, forms during the course, many times and after, a virtual community;
• The course material has a static component - that prepared by the facilitator together with a team specialized in instructional design - and a dynamic one, resulted from the participants’ interaction, from the suggestions, clarifications, commentaries, resources brought by these.
Most of the means of E-Learning permit the monitoring of the participants’ activity, the work in subgroups, the audio and video interaction.

2. Virtual Means of Learning
Then when a learning institution wants offer a program of online courses or spaces of online collaboration, one of the important decisions refers to the virtual environment VLE - Virtual Learning Environment or LMS - Learning Management System, where these will take place.
Choosing environment depends on the number of courses, participants and teachers, on the course duration.
The facilities which are offered by the majority of the environmental places:
- Secure and controlled access to the environment - each user has an account; the environmental use is made from a web browser; the users have specific rights related to the use and administration of environment; the participant’s activity and portfolio can be seen; some environments have the possibility of automatically evaluating the competences and the training needs;
- Access/management of the course content – theoretical models in different formats (HTML, audio, video), templates for the new materials development, the activities planning, access to resources, online libraries;
- Communication – with the teacher and between participants through asynchronous conferences (discussion forums), chat, e-mail; some environments have the facility of transmitting private messages (like an e-mail sent into the course space);
- The participants’ assessment – sending homework, creating and managing questionnaires;
- It can offer the possibility of working in teams, with parts of private communication;
- Administration- account creation, course components administration.

The users can be classified in:
- Participants (students)
- Teachers (facilitators)
- Developers (designers)
- Administrators

Criteria taken into consideration when comparing VLEs:
1. technical specifications,
2. facilities to create teaching material,
3. equipment and facilities for the members’ activity,
4. the facility and the intuitivism of exploring,
5. the potential for communication, collaboration ,
6. respecting the E-Learning standards,
7. hosting.

A virtual environment is just the tool through which the access to the course material is assured, the teacher-participants’ interaction is made, as well as the management of content and of the course activities. Not even the most sophisticated environment can’t replace the teacher and his art to engage and motivate participants in a learning and collaboration process.

In the specialized literature there are some terms that refer to the learning environments:
- LMS - Learning Management System – complex system, with the above mentioned facilities, for all the four categories of users; other met denominations are Knowledge Management System, Course Management System, Academic Management Systems, Student Management Systems;
- LCMS - Learning Management Content System - system that allows the editing, but also the access to the E-Learning materials;
- CMS - Content Management System - system for editing materials.

3. The Description of Application

The program contains the following modules: information, calendar, students, forum, chat, tutorials, online tests, the platform administration.

3.1. Information

At a department level there is a page which contains the latest news. For each announcement the date, the title of the announcement and the content of this can be displayed.

To read them one can enter a site and make a link to obtain announcements in RSS format, with the help of a RSS Reader program. A program like this is Active Web Reader (link), a free program that allows the news administration in RSS format from different domains. The list of the RSS channel is stocked under the form of a tree (Explorer type), where the directors represent domains or sub domains.
For each announcement the title of this and a short description are displayed, the associated link indicating the page on the site where this is completely displayed (Fig 1).

3.2. Calendar
To highlight the main events a calendar may be introduced, through which the course days, the exam days and even the meetings with teachers or other events can be watched.

3.3. Students
In order to better know the course colleagues and to facilitate their communication, in this page the students and their e-mail addresses have been introduced.

Also from here messages can be transmitted to the addresses selected by every student depending on whom these are addressed to.

3.4. Forum
The forum allows the user the communication with the teacher. The moment the user enters the forum he sees the number of questions and answers received for every domain.

Through selecting a domain, then a question the user can see all the answers at that question. After selecting a question, this can be erased or modified. In the users’ case these operations are permitted just for their own questions (Fig 2).

Figure 1.
3.5. Chat
This type of communication permits the sending of short messages among persons working in the network; the messages are stocked on a server until they are received. This service can be compared to the e-mail, with the difference that here communication is synchronous, the messages appearing automatically on the involved persons’ screen. This way of communication is useful for organizing conferences between two or more users, in the conditions of a breadth of limited tape.

3.6. Tutorials
The tutorial page contains a set of lessons divided on domains.

The editor contains the most used elements for creating a course, options to add files on the site as well as the possibility to introduce HTML code if the use of some more complex constructions is wished. The files that contain these lessons can be under the form of: text, HTML, Power Point.

The access to a certain course can be restricted through the use of accounts and passwords (Fig. 3).

In the next images a course in HTML format is presented. The tutorial is displayed divided on chapters (Fig. 4).

Because for understanding the elements presented in a lesson some knowledge is needed the establishment of some preliminary questionnaires to condition the access to the respective tutorial is allowed.

The checking of the level of understanding the presented information can be done with the help of a final self-assessment test or with points. The application of this mechanism permits the organization of the tutorials in a graph of dependence, determining the users to look down on them in a certain order.

The accession degree and the completion of the tutorials from the selected department can be watched.

3.7. On-line tests
Creating on-line tests, supposes first the introduction of some data that will identify them (title, the author’s name, description), but they will also indicate the type of this, the way in which the evaluation of the results will be made, with or without the errors’ explication, with or without points for the chosen answers.

The completion of a questionnaire supposes the bill sticking of the questions whose answers will be selected with or without the possibility of returning to the selection made.

Another option is that of introducing a maximum time of completing the questionnaire.

To complete the questionnaire the introduction of a lot more questions through completion. Thus a question requires a text, a variant of answer (only one correct answer or more) and, optionally, an image to what the reference is made. Each such question will have more options of answers, each one having a text, a value (true answer/false answer) and, in the situation in which a questionnaire with the explication of the mistakes is created, explication for the wrong election of this answer.
A return to the questionnaire can be made by introducing new questions or by erasing some of the old ones. The general data of a questionnaire, as well as the title, and the description can be also changed.

When selecting a questionnaire it appears the list with the users that completed them, and when selecting a user the answers are listed. There is also the possibility of erasing all the results registered for a questionnaire.

### 3.8. The Administration of the Platform

The administration page allows the modification of the information about the institution, users, departments, and the distribution of the users on departments. This page is reserved to the super users that can modify all the data about their institution.

These data is referred to departments, announcements and the distribution of the users on departments. At the level of a department the domains for tutorials and for the forum can be defined, inclusively administrated by facilitators (Fig. 5.).
4. Conclusions

The possibility of administrating the online courses for learning institutions or different firms is an important facility, allowing these to implement an E-Learning system without a hardware infrastructure being necessary, diminishing the cost of implementation.

The main advantage of this solution is represented by the integration of the main modules necessary in the online learning process, being able to be used without the help of other programs. Still to become a performed solution, the subsequent developments must take into consideration the addition of some facilities like:
- The diversification of the type of questions for questionnaires, including questions at which the user can answer through the completion of a field text;
- The addition of media elements in the editor of tutorials;
- The creation of materials to respect the standards in E-Learning (ex: SCORM);
- The offer of some particularized templates for tutorials, questionnaires and even the entire application;
- Mechanism of analysis to permit the making of some more detailed reports, including comparative analyses or the watching of the participants’ evolution in time;
- The making of a page for users, where these can see their situation and the possible messages addressed to them;
- The making of a system of announcements at level of department;
- The requirement of receiving notices on e-mail;
- The possibility of creating domains protected by password or in which the access should be permitted just too some users, to be used for discussing different team projects.

References:

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