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E-Learning in Higher and Adult Education

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1. Introduction

This work is emphasizing the advantages and the limits of using the electronic tools for education at all levels, specially higher education systems and education for adults.

A few of the advantages are:

- The modernization of the educational process;
- A better communication between the professors/instructors and students/educable adults;
- A raising participation of the students/adults in educational programs, university courses or training sessions;
- The innovation in educational programs;
- Facilitates the educational act.

The limits at least in some of the countries like Romania are:

- The missing of the face to face contact between professors and students;
- Difficulties in the computer utilization by the older professors/instructors or students;
- The evaluation process is more stressing for the students, because the grades and qualifications are generated by the computer;
- Difficulties in publishing the courses (platform contents) because of the lack in author's rights legislation.

The context in which the electronic tools for education are used differs from higher education to education for adults as well as from university to university, from education provider to another, from country to country etc. In any case we can say that the system is useful and helps to modernize (innovate) and facilitate the educational process.

E - learning Innovations offers a core group of professional development courses designed to help anyone achieve professional advancement and personal enrichment. The programs are founded on an extensive experience and understanding of technology-based learning environments. They focus on the most current industry practices for various learning environments and best approaches for multiple learning styles. They ensure that the students get the information and skills needed to achieve more in teaching practice and to confidently enter the distance or online classroom.

E - learning Innovation's training is rigorous yet practical, and courses are taught by highly qualified faculty. They are offered online allowing you to work at your own pace and at your convenience. They blend the best of self-directed experiences, instructor-led sessions, and individual mentoring. Through the courses, you have the opportunity to work with peers across the nation and even around the world.

Certification is offered through a combination of selected courses or individual. Courses can be customized to an organization's specific needs and requirements.

E - learning Innovations is committed to your professional success. Benefits of our training include:

- A flexible and progressive online learning format
- A collaborative and blended learning environment
- Immediate, practical application
- Individual mentoring and coaching
- Certification through a combination of selected courses
- Can be tailored to specific technologies or environments

These course options are:

- Teaching Online
- Managing Distance Learning
- E - learning Course Builder
- Computer Application Skills Competencies

The latest E-learning Innovations such as mobile learning (MLearning – Tremblay, 2010) or web based collaborative open environments (Lewin, 2011) makes the education more competitive but also saves resources now and in the future.

The objectives of this chapter are: to explain the contribution of modern technologies and electronic systems to educational processes, the concept of technology based learning, to introduce the electronic tools for education, to present good practice examples in implementing E-learning systems in higher education and corporate environment in Romania and not for the last the new electronic learning systems.

The motivation of this work is to present the opportunities offered by this type of learning for the people and for the society also taking into consideration the global economic crisis that affects all the sectors, the education being one of the most affected. As a result in the future we will have less prepared generation due to the lack of resources. In the mean time introducing the computers and ITC in educational processes facilitates them and makes the educational system modern and efficient.

For reaching the objective the author used the personal anterior results of the own work in the educational field together with the international theoretical and practical achievements in the E-learning domain.

The results of the work is presenting the ways to do computer assisted education for students and adults, giving the good practice examples, presenting new electronic learning systems the advantages and limits and to try to emphasize that these days E-learning is one of the efficient way to reach education, no matter the age of the educable ones.

Considering the scope and the results of this work we can conclude that the E-learning is the best way to achieve education these days, when the resources are limited by the global economic decline, because is more cheaper for the people (students and adults) and for the educational institutions (a small number of teachers involved and one time buying the new technology).

2. Contribution of modern technologies and electronic systems to educational processes

In present we live in technology era, technology has become an important component our lives and we cannot develop diverse activities without it. Every day appears new gadgets or

software that makes lives easier and improves the technology and software that already exists. Making lives easier is not, however, the only role technology plays in our lives.

Technology is playing an increasing role in education. As technology advances, it is used for the benefit of students and people of all ages in the learning processes.

Technology used in the classroom helps students to learn easier the materials presented in different courses. For example, since some people are visual learners, projection screens linked to computers can allow students to see their notes instead of simply listening to a teacher deliver a course without any technical mean.

In the same direction software can be used to supplement class curriculum, to improve the educative process by adding practical aspects to the course. Also, the programs provide study questions, activities, and even tests and quizzes for a class that can help students continue learning outside the classroom.

Technology has also become part of many curriculums, even for other courses out of computer and technology classes. Students use computers to create presentations and use the Internet in order to research topics for papers and essays, to get tests and materials for learning.

Students also learn how to use the technology available to them in any type of courses but especially in computer classes. This ensures that after graduation they will be able to use the information technology in their work, which may put them ahead of someone who didn't have access to a particular technology or software in their school.

The information technology advances yearly, so the students have better access to educational opportunities. When something new and "better" appears, the "older" technology becomes more affordable, allowing it to be used in educational processes, even when schools are on a tight budget. In the same way the professional preparation for adults can be assisted by the computer and it have to be in the cases of the courses that requires that.

Advantages to having technology in Education

Here are some of the advantages that technology helps provide for the educated ones today:

i.   **Student Achievement**. Technology has been proven to help students achieve in reading, writing, and arithmetic. Each year teachers are instructed in order to use the information technology in educational processes. Technology gives educators one more tool to help them reach good results with the students.

ii. **Professional Requirements**. The beneficiaries of the technology in the education system are not only the students, it also benefits the educators. There are so many opportunities for teachers to learn and acquire new skills over the internet, keep up with credentials and in return help them improve their teaching abilities.

iii. **Meeting Special Needs**. Assistive technology for special needed students, and student with disabilities have been able to achieve in areas and ways that would not have been possible. Technology creates individualized learning environments for this kind of students and really can play a major role in special needs ones.

iv. **Continuing Education**. Technology has also made it possible for those who didn't finish college or high school to get back in education (education for adults) without having to even leave the comfort of their own home. And technology has made it possible for continued education (so called lifelong learning); those wanting to reach a little higher and gain more knowledge in something new or old. Technology brings the learning right to the students or educated ones; wherever they may be.

v.   **Workforce skills**. And not for the last, technology has served students/people well because it has provided them with the skill and knowledge they need to enter the workforce.

It is becoming increasingly difficult for teachers to reach every child/student in the classroom. Class sizes keep getting larger, but teachers remain still one of the lowest paid salary jobs in Romania. Yet the need is still there to teach and prepare the children/students for the future; the need to prepare them for the "real" world. And the real world today is a world full of technology. So if we don't provide technology in our education system then when will students have a chance to get familiar with it? How will they train themselves for the "real" world? So, what exactly is the role of technology in education? Technology is making it possible for teachers to reach more to the students, allowing students the time they need to learn, accumulate, succeed, and providing our future workforce with competent, knowledgeable employees.

3. Technology based learning. Main concepts

Technology based learning is the way of learning using the electronic technology such as internet, intranet, audio and video conferencing, webcasts etc. We have also the concepts of **computer based learning** and **on line learning** that means the learning using the computer, respective the internet and modern technology. From these concepts derived the synonymous of Technology based learning – the **e-learning** concept, largely spread at all the levels of educational process in our days.

From other point of view **Educational technology (learning technology)** is the way of learning using and managing the appropriate technological processes and resources in order to develop human capabilities.

Considering the *Handbook of Human Performance Technology(J.A.Pershing, 2006)*, the word technology for the sister fields of Educational and Human Performance Technology means "applied science." In other words, any valid and reliable process or procedure that is derived from basic research using the "scientific method" is considered a "technology." The word technology, comes from the Greek "Techne" which means craft or art. Another word "technique", with the same origin, also may be used when considering the field Educational technology. So, Educational technology may be extended to include the techniques of the educator and educators often named Educational Technologists.

The Technology based learning process development

If we have to talk about the Technology based learning making a comparison between the beginning of the decade and present, the situation is as follows:

Old economy	Knowledge Based Economy
Four years degree	Forty-years degree
Training and Cost Center	Training as Competitive Advantage
Learner mobility	Content mobility
Distance education	Distributed learning
Correspondence & Video	High tech Multimedia Centers
Generic programs	Tailored programs
Geographic centers	Brand Name Universities and Celebrity Professors
Isolated	Virtual Learning Commities

Table 1. Education in knowledge economy. Source: N.Gudanescu, Using modern technology for improving learning process at different educational levels, Procedia Social and Behavioral Sciences
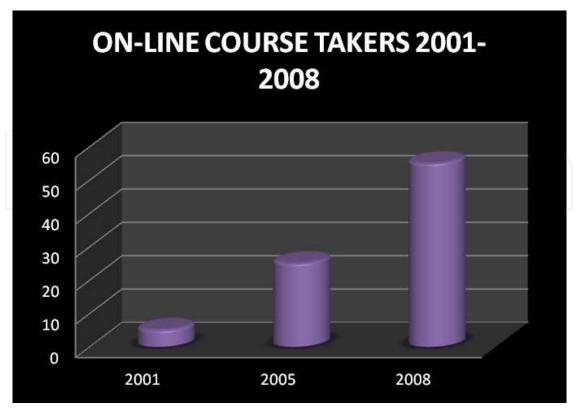
Fig. 1. On-line course takers – educational & training. Source: Institute for the quantitative Study of Society, 2008

Following the evolution of the technology introduction in educational processes at all the levels, we can observe a fast increase of the number of persons interested of this type of learning. The time saved and also the efficiency of using technology for educational purposes recommends it as the newest trend in the knowledge based economy and society. Making a parallel between education in old economy and in knowledge based economy.

 "*Educational technology*" represents the using of modern technology in educational processes, in order to improve teaching and learning.

Educational technology is also known as „learning technology'' or „instructional technology''

Educational technology can be used at all levels of education from children's education, to high school, university level and education for adults and specialization.

Educational technologies includes web-sites, electronic platforms, educational software, educational electronic materials, interactive blackboards and videoconference systems for distance learning.

E-learning comprises all forms of electronically supported learning and teaching. The information and communication systems, whether networked learning or not, serve as specific media to implement the learning process. The term will still most likely be utilized to reference out-of-classroom and in-classroom educational experiences via technology, even as advances continue in regard to devices and curriculum.

E-learning is essentially the computer and network-enabled transfer of skills and knowledge. E-learning applications and processes include Web-based learning, computer-based learning, virtual education opportunities and digital collaboration. Content is delivered via the Internet, intranet/internet, audio or video tape, satellite TV and CD-ROM.

Abbreviations like CBT (*Computer-Based Training*), IBT (*Internet-Based Training*) or WBT (*Web-Based Training*) have been used in time as synonyms to e-learning. Today one can still find these terms being used, along with variations of e-learning such as e-learning, E-learning, and E-learning. This system is largely used today, that's why it has to be reglemented by establishing rules and principles of functioning.

E-learning principles:

i.   E-learning is a way of doing education that can be applied within varying education models (face to face or distance education)

This principle means that this is not a distinctive educational system in itself, but helps to provide a good educational act implementing various models recorded above.

ii.   E-learning is a unique form of education that combines face to face and distance education.

In this kind of system the role of the instructor changes, the person became the form of transmitting the educational information but thorough the electronic instruments. The concepts and theoretical principles remains the same, only the information is delivered in another form. We can name this form of learning a mixed- mode which is seconded by a high technology component, the E-learning platform and the computers, and not for the last, the web environment. The E-learning system distinguish between face to face preparation and distance learning. Of course in both kind of teaching the technology is useful and improved the way of learning.

iii. The importance of how is technology used in the educational process and the technical level of a course.

The modalities to implement the E-learning methods have to be in accordance with the pedagogies.

Weller [1] presents as pedagogies the following methods: Constructivism, Resource based learning, Collaborative learning, Problem based learning, Narrative based teaching and Situated learning. The ideea is that the technology can be applied in any pedagogic method used for the educational process, but the way of using is established by the educator as author of the course and the guide for the students or whatever the category of the educated persons.

iv.   The E-learning means the implementation of innovative educational methods.

This kind of systems offer to the educators the opportunities to innovate in educational process, to use new methods of learning and to bring the technology beside the theoretical and practical information, which is spread among the students. Obviously the system can present some weaknesses (for example – the small number of hours spent face to face) but as a whole education + technology is a innovative system of learning and accumulating knowledge.

v.   E-learning can be used in two ways; the presentation of educational content, and the facilitation of educational processes.

E-learning includes digital materials storage and distribution (presentation) and on line communication, simulative interactivity, multimedia, and access tracking processes – each of them can be considered as innovative ways of learning.

In other words E-learning can both make information available and play a part in students' self-construction of knowledge.

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[1] Weller,M. (2002). *Delivering learning on the Net*, UK: Kogan Page

vi. E-learning uses a standard model of courses accepted by the educational authorities from each country.

Each country has regulations regarding the educational system, respectively the predefined standards for educational levels (high school or university) and for the form of studies (full time or reduced time). The format of the e-courses is different from country to country, from specialization to specialization, form level to level.

vii. E-learning offers new opportunities of education for the users

For many students today is better to use alternative methods for education. Why? It is very simple, they are in almost cases very busy working for getting the money necessary to pay the courses and the time for them is precious. Using the computer technology for learning it shortens the time, the student stays home or go to a educational center for few hours a day and studies, in order to complete their knowledge.

Another two categories of users when is came to talk about the technology and education are knowledge students and knowledge workers. These two type of educable ones are representative for knowledge based economy and society in which we live today.

Knowledge students are the students that use technology in most of the learning processes.

Knowledge workers are the workers that are prepared/specialized using the technology and in their work they are using the information technology or more than others.

Living in knowledge based society the students as well as the workers have to adapt to the conditions dictated by the new society in which the technology and the knowledge are the leaders.

4. Electronic tools for education

In this section we will present a few of the many electronic tools used to deliver in modern conditions the education and specialization among students, respectively adults in the training sessions. Representative for the purpose of this work are Learning Management Systems (known as LMS), Integrated Learning Systems, On-line forums, and not for the last Web Conferences.

a. Learning Management Systems

A learning management system (LMS) is a software application or Web-based technology used to plan, implement, and assess a specific learning process. Typically, a learning management system provides an instructor with a way to create and deliver content, monitor student participation, and assess student performance. A learning management system may also provide students with the ability to use interactive features such as threaded discussions, video conferencing, and discussion forums. The Advanced Distance Learning group, sponsored by the United States Department of Defense, has created a set of specifications called Shareable Content Object Reference Model (SCORM) to encourage the standardization of learning management systems. Shareable Content Object Reference Model (SCORM) is an XML-based framework used to define and access information about learning objects so they can be easily shared among different learning management systems (LMSs). SCORM was developed in response to a United States Department of Defense initiative to promote standardization in e-learning.

In another definition a Learning Management System (commonly abbreviated as LMS) is a software application for the administration, documentation, tracking, and reporting of training programs, classroom and online events, e-learning programs, and training content. As described in (Ellis 2009) a robust LMS should be able to do the following:

- centralize and automate administration of documents, students and other useful information
- use self-service and self-guided services
- assemble and deliver learning content rapidly
- consolidate training initiatives on a scalable web-based platform
- support portability and standards
- personalize content and enable knowledge reuse.

LMSs systems have been created for managing training and educational records, to software for distributing courses over the Internet with features for online collaboration. In adult preparation or HR activities, corporate training use LMSs to automate record-keeping and employee registration. Computer based learning and training as well as collaborative learning are the future for the busy people/students from these days.

Some LMSs are Web-based to facilitate access to learning content and administration from distance. LMSs are used generally by universities (educational institutions) to enhance and support classroom teaching and offering courses to a larger population of learners across the country or continent but can be used very frequently for adult preparation and specialization at the work-place or in organized training sessions. For the employees some LMS providers include as module "HR performance management systems", which encompass employee progress, competency management, skills-analysis, succession planning for career, and multi-rater assessments. For the commercial market, some Learning and Performance Management Systems include recruitment and reward functionality.

i.   LMS Characteristics

The virtual learning environment used by universities and colleges allow professors/tutors/instructors to manage their courses and exchange information with students for a course that in most cases will last several weeks and will meet several times during those weeks. In the corporate environment setting a course may be much shorter, easier to present as content and completed in a single instructor-led event or online session. The characteristics shared by both types of LMSs for universities and for education for adults and instruction are:

- Manage users, roles, courses, instructors, facilities, and generate reports for any person or activity.
- Generate Courses calendar
- Offers learning path
- Student messaging and notifications
- Assessment and testing handling before and after following the course
- Generates automatic tests choosing different ways to combine the questions
- Display scores and transcripts
- Grading of coursework and roster processing, including wait listing
- Web-based or blended course delivery

Specific to corporate training the characteristics include:

- Auto enrollment (enrolling Students/Employees in courses when required according to predefined criteria, such as job title or work location)
- Manager enrollment and approval
- Integration with performance tracking and management systems in the company
- Planning tools in order to identify skill gaps at departmental and individual level

- Curriculum, required and elective training requirements at an individual and organizational level
- Grouping students according to demographic units (geographic region, product line, business size or type, business units etc.)
- Assign corporate and partner employees to more than one job title at more than one demographic unit

ii. LMS Technical aspects and Learning Content Management System

Most of the LMSs are web-based in order to ensure the wide use of the interested ones. These are built using a variety of development platforms, like Java/J2EE, Microsoft .NET or PHP. The main technical characteristics in order to have a good platform for E-learning are:

- High availability: the LMS must be robust enough to serve the diverse needs of thousands of learners, administrators, content builders and teachers/instructors simultaneously.
- Scalability: the infrastructure should be able to expand to meet future growth, both in terms of the volume of instruction and the size of the student body.
- Usability: to support a host of automated and personalized services, such as self-paced and role-specific learning, the access, delivery and presentation of material must be easy-to-use and highly intuitive.
- Interoperability: to support content from different sources and multiple vendors' hardware/software solutions, the LMS should be based on open industry standards for Web deployments and support the major learning standards.
- Stability: the LMS infrastructure can reliably and effectively manage a large enterprise implementation running.
- Security: As with any outward-facing collaborative solution, the LMS can selectively limit and control access to online content, resources and back-end functions, both internally and externally, for its diverse user community

The soft platform is not so important for the end users, they are interested in the facilities offered by the platform, easy access, courses posted, forums, tests, case studies etc. The information posted on the platforms is known as learning content.

A learning content management system (LCMS) is a related technology to the learning management system that it is focused on the development, management and publishing of the content that will typically be delivered thorough an LMS. An LCMS is a multi-user environment where developers may create, store, use, manage, and deliver digital learning content from a central object repository. In the university environment as well as in the corporate environment the content is made by courses, case studies and practical materials of study, tests and recapitulative questions sets, training modules etc. The learning materials (learning objects) are not only written materials, but graphics, audio and video materials for courses and training support. The materials are posted by the teachers, trainers and platform administrators but also by the students on share section.

iii. Learning management industry

In the relatively new Learning Management Systems market, commercial vendors for corporate and education applications range from new entrants to those that entered the market in the nineties. In addition to commercial packages, many open source solutions are available.

According (Bersin et al. 2009), LMSs represent an $860 million market, made up of more than 60 different providers. The six largest LMS product companies constitute

approximately 50% of the market. In addition to the remaining smaller LMS product vendors, training outsourcing firms, enterprise resource planning vendors, and consulting firms all compete for part of the learning management market. Approximately 40 percent of U.S. training organizations reported that they have an LMS installed, a figure that has not changed significantly over the past two years. From the universities in the world 80% have a LMS installed and organize distance courses.

b.   Integrated Learning Systems

Integrated Learning Systems (abbreviated as ILS) are hardware and software solutions designed to deliver instructional content. The effective delivery of that content is measured, monitored, and maintained with an array of assessment and management tools that may also be part of that system.

Integrated learning systems are generally associated with educational/academic environments, but are also deployed within corporate environment, for example, as a way to introduce employees to new, mission critical systems and software applications and to provide them training and specialization in different fields.

Comparing with static online help or even animated tutorials, Integrated Learning Systems are highly interactive and designed to provide feedback as to progress and grasp of the subject matter at hand. Built-in tools further allow professors or executive management or instructors/trainers to monitor and measure a student's progress.

Integrated Learning Systems are packages of networked hardware and software used for education. Such systems provide instructional content as well as assessment and management tools. Conventionally, instruction is organized around specific objectives and the software embodies a mastery learning approach to instruction. Integrated Learning Systems feature programmed instruction for teacher and student. Their purpose is to direct and coach the student through the learning experience. By the early 1990s, about 20 percent of American elementary schools had installed integrated learning systems as a primary component of their overall curriculum (Becker & Hativa, 1994). Integrated learning systems also have been developed for use in high school, college, and adult populations preparation (Bunderson and Faust, 1976).

Typically, integrated learning systems are part of a comprehensive educational system that a school purchases to integrate within its overall curriculum. The curricular goals for literacy may include teaching children skills in language-arts mechanics and phonics instruction. Yet integrated learning systems differ from off-the-shelf, drill-and-practice programs. In an integrated learning system program, each student studies at his or her level, because an adaptive testing algorithm places every student at a level appropriate for the instructional process. In a number of off-the-shelf, drill-and-practice programs, no adaptive testing occurs, and the student works at whatever "level" of the program he or she chooses.

More appropriately then, Integrated Learning Systems may be understood, not as "drill-and-practice" programs but as "testing and practice" programs (Osin, 1996; Osin and Lesgold, 1996). Students work individually and at their own pace through a series of exercises that are designed to give them practice in a targeted skill. This work may appear to resemble activities that students do in off-the-shelf, drill-and-practice programs; however, two critical distinctions exist. First, integrated learning systems are more extensive in their scope of instruction. In other words, they present many more exercises, and the exercises follow scope-and-sequence patterns of instruction found in traditional textbooks. Second, integrated learning systems regulate students' progress. They track students' progress in completing the exercises.

Recent research indicates that students who participate in learning activities using Integrated Learning Systems spend more time actively engaged in the learning tasks than their counterparts who are engaged in the same offline learning tasks in traditionally structured classrooms (Worthen, VanDusen, Sailor, 1994). Interestingly, when pairs of students work cooperatively to complete exercises in an integrated learning system, they outperform their counterparts who use the system on an individual basis.

To conclude, Integrated Learning Systems require a significant commitment of implementation expense, time, and effort. Researchers remain divided on their long-term value. Although these systems have been shown to teach a breadth of procedural skills (such as language arts mechanics), it is not clear that they teach depth of content or foster complex thinking skills required in debate or composition. So the Integrated Learning Systems (ILS) are computer-based systems for the delivery of curriculum material, via an individualized program of study. They are relatively new in Europe, although they have existed in North America for around 30 years. Advances in computer technology mean that these systems now offer teachers a powerful set of tools to assist in the development of basic numeracy and literacy. Pupils/students using these systems have been shown to perform significantly better than equivalent control groups. Being instructional systems can be successfully used for the adults also that are in the process of learning a trade.

What is an ILS? If we want to present it schematically.

An ILS is made up of two components, Computer Aided Instruction (CAI) modules (often called courseware) and a Management System.
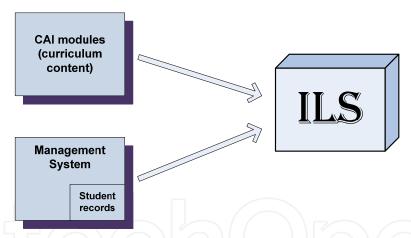

Fig. 2.The scheme of an Integrated learning system

The CAI modules present the teaching material in a similar way to existing educational software. The Management System keeps records of the students' performance and, in some cases depending on the software, moves them through the levels of difficulty as appropriate. It also allows the teachers to set up (configure) all the different course options, to suit their own teaching styles and the needs of their students.

Learning with an ILS

The key features of an ILS are as follows:

- Each student/person has an individualized learning program. If they perform well, they can make rapid progress onto higher levels of difficulty. If they experience problems, they are given more practice and may also be given additional tutorials and support questions on the various skills needed to deal with a particular topic.

- Teachers have access to a lot of data for monitoring students' progress. This will highlight stdents who are experiencing difficulty and who are in need of additional support. This data is gathered automatically and can be printed out in a series of different reports.
- Stdents performance is constantly monitored by the Management System.
- Students get immediate feedback after every question. This can raise motivation and accelerate learning.

The Benefits of an ILS

The benefits that can be achieved through the use of an ILS can be:
- Significant learning gains in mathematics
- Significant learning gains in English or any other language that uses the ILS
- Improved motivation and attitude to work
- Improved performance in all curriculum areas because of the first three benefits

c.   On-line forums

An Internet, On-line forum, or message board, is an online discussion site where people can hold conversations in the form of posted messages. They differ from chat rooms in that messages are at least temporarily archived. Also, depending on the access level of a user or the forum set-up, a posted message might need to be approved by a moderator before it becomes visible. Forums have a specific set of jargon associated with them; For example a single conversation is called a "thread."

A forum is hierarchical or tree-like in structure: a forum can contain a number of sub forums, each of which may have several topics. Within a forum's topic, each new discussion started is called a thread, and can be replied to by as many people as wish to. Depending on the forum's settings, users can be anonymous or have to register with the forum and then subsequently log in order to post messages. On most forums, users do not have to log in to read existing messages.

How can we use forums for education? Very simple, the talkers share their own knowledge with others, by giving them information or advices, also specialists in different domains present on the forums can give the interested ones the right data. But, in the majority of the cases when we talk about electronic educational systems, the on-line forums are integrated in LMS or ILS. These forums are administrated by the teachers and platforms administrators that manage the entire system. In the case of the teachers as moderators they have to respond to the students' questions and guide them in the way of learning the most important things for their future.

How to manage on-line forums? Every day, millions of users log on to their favorite online forums, communities and social spaces and interact with others to get advice and discuss everything from the latest news and trends to their hobbies and professions to whatever else strikes their fancy. Administrators have to lead these communities, deal with difficult users, manage staff members and make tough decisions. Legal constraints, spammers and technical issues can turn the excitement of running an on-line community into chaos.

The steps to create an on-line forum are:
- Creating an organizational structure
- Designing and launching the community
- Deciding on user options like private messaging
- Promoting and attracting members
- Utilizing technology to members benefit

- Developing and enforcing guidelines
- Choosing and managing moderators
- Shutting down users who disrupt and harm the community
- Involving the users and keeping the site interesting and inviting
- Generating revenue

d. Web Conferences and Video Conferences

Web Conferencing refers to a service that allows conferencing events to be shared with remote locations. Most vendors also provide either a recorded copy of an event, or a means for a subscriber to record an event. The service allows information to be shared simultaneously, across geographically dispersed locations in nearly real-time. Applications for web conferencing include meetings, training events, lectures, or short presentations from any computer. A participant can be either an individual person or a group. System requirements that allow individuals within a group to participate as individuals (e.g. when an audience participant asks a question) depend on the size of the group. Handling such requirements is often the responsibility of the group. In general, system requirements depend on the vendor. The service is made possible by Internet technologies, particularly on IP/TCP connections.

Some solutions require additional software to be installed (usually via download) by the presenter and participants, while others eliminate this step by providing physical hardware. Some vendors provide a complete solution while other vendors enhance existing technologies. Most also provide a means of interfacing with email and calendaring clients in order that customers can plan an event and share information about it, in advance.

Support for planning a shared event (web conferences) is typically integrated with calendar and email applications. The method of controlling access to an event is provided by the vendor. Additional value-added features are included as desired by vendors who provide them. As with any technology, these features are limited only by the imagination.

For interactive online workshops web conferences are complemented by electronic meeting systems (EMS) which provide a range of on-line facilitation tools such as brainstorming and categorization, a range of voting methods or structured discussions, typically with optional anonymity. Typically, EMS do not provide core web conferencing functionality such as screen sharing or voice conferencing though some EMS can control web conferencing sessions.

Other typical features of a web conference include:

- Slide show presentations - where images are presented to the audience and markup tools and a remote mouse pointer are used to engage the audience while the presenter discusses slide content
- Live or Streaming video - where full motion webcam, digital video camera or multi-media files are pushed to the audience
- VoIP (Real time audio communication through the computer via use of headphones and speakers)
- Web tours - where URLs, data from forms, cookies, scripts and session data can be pushed to other participants enabling them to be pushed though web based logons, clicks, etc. This type of feature works well when demonstrating websites where users themselves can also participate
- Meeting Recording - where presentation activity is recorded on the client side or server side for later viewing and/or distribution

- Whiteboard with annotation (allowing the presenter and/or attendees to highlight or mark items on the slide presentation. Or, simply make notes on a blank whiteboard.)
- Text chat - For live question and answer sessions, limited to the people connected to the meeting. Text chat may be public (echo'ed to all participants) or private (between 2 participants)
- Polls and surveys (allows the presenter to conduct questions with multiple choice answers directed to the audience)
- Screen sharing/desktop sharing/application sharing (where participants can view anything the presenter currently has shown on their screen. Some screen sharing applications allow for remote desktop control, allowing participants to manipulate the presenters screen, although this is not widely used.)

Web conferencing is often sold as a service, hosted on a web server controlled by the vendor. Offerings vary per vendor but most hosted services provide a cost per user per minute model, a monthly fee model and a seat model. Some vendors also provide a server side solution which allows the customer to host their own web conferencing service on their own servers.

Web conferencing technologies are not standardized, which has been a significant factor in the lack of interoperability, transparency, platform dependence, security issues, cost and market segmentation. In 2003, the IETF established a working group to establish a standard for web conferencing, called "Centralized Conferencing ". The planned deliverables of the group include:

- A basic floor control protocol. Binary Floor Control Protocol (BFCP)
- A mechanism for membership and authorization control
- A mechanism to manipulate and describe media "mixing" or "topology" for multiple media types (audio, video, text)
- A mechanism for notification of conference related events/changes (for example a floor change)

Web conferencing is available with three models: hosting service, software and appliance. An appliance, unlike the online hosted solution, it is offered as hardware. It is also known as "in-house" or "on-premise" web conferencing. It is used to conduct live meetings, remote training, or presentations via the Internet.

Videoconference (video conferencing)

A videoconference is a live connection between people in separate locations for the purpose of communication, usually involving audio and often text as well as video. At its simplest, videoconferencing provides transmission of static images and text between two locations. At its most sophisticated, it provides transmission of full-motion video images and high-quality audio between multiple locations. Videoconferencing software is quickly becoming standard computer equipment. For example, Microsoft's NetMeeting is included in Windows 2000 and is also available for free download from the NetMeeting homepage.

Digital Camera afford the user easy - and cheap - live connections to distant friends and family. Although the audio and video quality of such a minimal setup is not high, the combined benefits of a video link and long-distance savings may be quite persuasive.

The tangible benefits for businesses using videoconferencing include lower travel costs and profits gained from offering videoconferencing as an aspect of customer service. The intangible benefits include the facilitation of group work among geographically distant teammates and a stronger sense of community among business contacts, both within and

between companies. In terms of group work, users can chat, transfer files, share programs, send and receive graphic data, and operate computers from remote locations. On a more personal level, the face-to-face connection adds non-verbal communication to the exchange and allows participants to develop a stronger sense of familiarity with individuals they may never actually meet in the same place.

A videoconference can be thought of as a phone call with pictures - Microsoft refers to that aspect of its NetMeeting package as a "web phone" - and indications suggest that videoconferencing will some day become the primary mode of distance communication.

5. The latest electronic learning systems

The innovation regarding the E-learning technologies is on one side the mobile learning and on the other side the collaborative open environments/workplaces.

MLearning

MLearning (Mobile learning) is the newest discovery in the field and represents the learning using mobile devices or in other definition: „Any sort of learning that happens when the learner is not a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies.

In other words mobile learning decreases limitation of learning location with the mobility of general portable devices.

Learner access to m-learning project systems and materials was via a microportal (mPortal), which consists of a series of mini web pages with navigation pointing to:

- learning materials
- mini web Page Builder tools
- a collaborative activities tool (the mediaBoard)
- peer-to-peer communication services (messages, chat, discussion and blogs)
- the learning management system
- simple help guides for the system
- links to places on the Web that may be helpful or interesting for our target audience (eg alcohol, drugs and sexual health advice services, job hunting and online learning services and dictionaries).

The mPortal also manages the 'behind the scenes' integration and security.

The Page Builder tools within the mPortal allow learners to create and edit their own mini web pages for viewing on mobile devices (and also accessible from a desktop computer) in a password-protected environment.

The pages learners create can contain a number of different elements including text, pictures, movies, animations, audio, blogs (a short version of the term 'web log', meaning a publicly accessible web-based journal), conversations and links to any web pages chosen by the learner.

Virtual Collaborative open Environments/Workplaces

A Collaborative Workspace or shared workspace is an inter-connected environment in which all the participants in dispersed locations can access and interact with each other just as inside a single entity.

The environment may be supported by electronic communications and groupware which enable participants to overcome space and time differentials. These are typically enabled by

a shared mental model, common information, and a shared understanding by all of the participants regardless of physical location.

Communication comes in two forms: synchronous and asynchronous. Asynchronous communication includes email and shared file systems where information is exchanged back and forth in a non-interactive, sequential manner. The popularity of synchronous forms has increased over recent years driven by improvements in processing capabilities and the widespread availability of high speed internet. These include video and voice messaging services including shared whiteboard capabilities. Program sharing has also become available to allow remote users to share much more detailed information through CAD packages, spreadsheets, etc. and have access to these in real time.

6. Examples of good practice in implementing E-learning systems in higher education and corporate environment in Romania

In the next subchapter we will see 2 real examples of using information technology in higher education and in corporate environment

a. E-learning for corporate training and universities

The e-learning concept is frequently used in our country in these days. Now in Romania all prestigious companies and universities have e-learning platforms thus contributing to lifelong learning even from long distances from the educational source.

Some examples are:

Universities that implemented and use the e-learning system for students distance learning like Economic Studies Academy from Bucharest, Nicolae Tiulescu University, Titu Maiorescu University which uses for the moment a moodle platform but is implementing a european project financed from structural funds which main objective is the creation of a e-learning platform, Valahia University from Targoviste and so on. Being a express request from Education Ministry that each university that organize distance courses to have a e-learning platform, many universities from our country are searching modalities to have a such platform. Because the costs are in some cases bigger than the universities financial possibilities they write and implement European projects in order to finance an e-learning platform.

Another example of good practice is the E-learning system implemented at the Ecologic University from Bucharest – which will be described in the next subchapter:

In corporate environment there are some important transnational organizations and education for adults providers which had implemented for their own use or for the clients use, e-learning systems.

Online Business School program is part of the project Improving the competitiveness of SMEs in sustainable entrepreneurship (ICIMM) launched by the Consortium Romtelecom (by division dedicated to business - Romtelecom Business Solutions), Blue Point IT Solutions and OTE Academy. This program is co-financed by European Social Fund Operational Programme, Human Resources Development 2007-2013. The program is offering free online courses for professional development for managers in Romania.

Online Business School is in line with EU priorities to stimulate entrepreneurial thinking and creating a culture designed to encourage development of small and medium enterprises (SMEs).

Online Business School aims to support SMEs to improve their performance and ability to develop new markets through appropriate training of managers and promoting entrepreneurial culture.

Fig, 3. **Online Romtelecom Business School** platform. Source: Romtelecom business school - http://www.bizschool.ro/

In the long run, the program will generate a positive attitude towards entrepreneurship market will increase entrepreneurial and managerial skills of individuals to coordinate and strengthen SMEs capacity of development, generating new jobs.

The program, which will run over two and a half years, is aimed at people who occupy senior positions in SMEs in Romania. By the end of the program, participants will gain knowledge that will help to develop and complete their entrepreneurial skills to advance professionally.

b.   Future without bonds - Integrated support platform for distance learning

Future without bonds is a project that has been successfully implemented at Ecological University from Bucharest – Romania. The project was financed from structural European funds for human resources development. The implementation of the E-learning platform was done in a universitary year which meant the pilot project. The platform is now used in distance learning programs for students. The platform facilities and the interface is presented in the following.

System architecture

The Proposed system architecture its on three layers (presentation layer, the logic of the application and the persistence of data in the database).

Presentation layer

Is given by the client interface of a web page. To access these pages is sufficient a web browser, standards-compliant HTML and XHTML: Internet Explorer, Firefox, Netscape etc.. In these pages will provide interface in a more user-friendly way by using AJAX technology specific controls to display information (lists of data, search results etc). Web Interface will have a color palette based on shades of green, bringing as much brand of Ecological University with users.
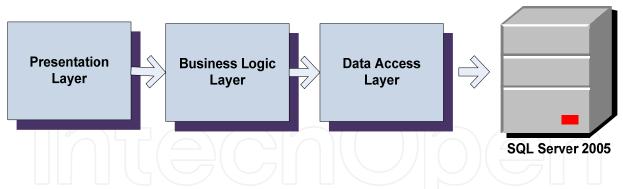
Fig. 4.The technical structure for the platform

XHTML compliant interface will, thus guaranteeing a correct view all web browsers that implement this standard.

Persistence layer

Database is provided by Microsoft SQL Server 2005. Saving data using an intermediate layer DAL (Data Access Layer), which transform the functions of the application in SQL queries or stored procedure calls. Using this layer will allow easy replacement of the port and the database on other servers, such as Oracle.

The use of such layer, represented in the figure below, will allow you to isolate code that access the database, allowing flexibility and speed in changing the database structure. Changing the database structure is the key to updating and improving the application in accordance with new requirements arise during the operation of the system.

Logic layer

Generating web pages is done by Microsoft IIS server application. This is, along with stored procedures in the database, the logic of the application.

In application, the code is written in C # language, there will be classes for each logical entity in the system: Student, Teacher, Test, Question, User, etc.. These classes have a dual role, being used to map structural or on a table in the database, and to contain specific business methods, according to object-oriented programming paradigm.

The technology that underlies the generation level of presentation is Microsoft ASP.NET 3.5. Also each web page includes code to be executed on the client, namely the web browser. Here we discuss the popular JavaScript and AJAX components that will reduce the time to view the information in the website.

Error management is through a unified system to deal with them. There are special windows for error messages, all types of incidents occurring are saved in the LOG files, grouped by day, and important actions are stored in the database along with their current time and the operator who performed the action in the system.

Using a system of auditing by saving actions in the database brings a very important advantage when you wish to study a problem arising in the system, or actions that operators did not recognize.

Clear separation between different levels of application will allow easy maintenance and a great flexibility factor to the emergence of new requirements. Both change existing pages, and create new pages will be done very quickly because the system uses *MASTER PAGE* entity type, containing all the components common to a set of interface pages.

In terms of scalability, the number of users can overcome without any problem 5000 users in the first stage, without having to commissioning of new hardware. If necessary, both computing power, storage capacity and bandwidth will be provided at no cost to the beneficiary for the entire duration of the maintenance contract.

In terms of changes in access rights, an administrator is able to set access rights for each share of the system. Each user role associated with use, and each role with a list of rights. Creation operators, assigning roles and rights at specifics roles is managed entirely by the system administrator directly from the software management module. The system is designed to allow easy definition of new rights, their definition is only needed as a constant number and scope of operation.

Technical features

Performances: Supplier shall guarantee a level of availability more than 99% because our servers are connected to the Internet through a provider with whom we have an agreed SLA more restrictive than that. Any intervention in the production application will be made only between 2:00 to 5:00, making the exception to this rule only in emergencies maximum when the application can not be used.

Multi-user operating system

The technological solution chosen meets all the criteria to support more than 1,000 simultaneous users, up to 5,000 simultaneous users, depending on the workload of the application. and Internet connection.

Ensure data consistency by using blocking routines of the business logic stored procedures. This ensure that, at short time, users can simultaneously modify the same set of information. Also this problem is partially solved by designing easy and database, with a building that are more operations such as insert, update operations are used only on user's own data set that generated this operation, avoiding such a conflict is to update data in the database.

Complex management actions will be based on cursor type tasks, but will run only at night to avoid the period of maximum load application.

Used platforms

The operating system is Microsoft Windows 2003, whose spread has proven reliability. Windows 2003 has an advanced system access, but also a mechanism for tracking errors.

Both the operating system, application and have a role-based access, authentication is done in system based on a username and password. Creating new accounts in the system, or if the password is entered incorrectly three times, will ask the user a CAPTCHA code.

Access to the Internet server is not permitted on port 80, that's why data losses caused by unauthorized entries are excluded. Both the operating system, SQL Server 2005 and are continuously updated by monitoring and Packet-sized installation and updates necessary to maintain a high level of security. Personnel authorized to administer this server connects to it using Remote Desktop Connection type applications, but only through a VPN interface, secured by additional password. When connecting to the application users need a username and password active. Both are case-sensitive. Account creation is done only by administrators and their creation is also need a valid email address and a unique registration number, thus avoiding operating errors which an account can be created several times. Passwords are not stored in the database system, retaining only the password hash code using SHA1 algorithm, making it impossible to know the user password to be used later, even by the administration.

System functionality

Intuitive and friendly interface

The user interface is intuitive, consistent and systematic, with uniform operating rules, being able to work with both mouse and keyboard to optimize massive data records.

The system must provide error messages in Romanian for:
- Data entry errors (inconsistent);
- Errors in logic to use;
- Errors from the server database management;
- Other types of errors.

Depending on the type of registered user (student, teacher, administrator) will be available only for registered user menus. It also will allow and overlapping of roles, for example based on a single account access will connect a person who teaches a course, but still the same person may participate as a student in another course. The same person may also be at the same time the system administrator.

The interface is optimally structured to allow access as quickly and as intuitive to the system functions. Are very airy windows user, the user information found on these pages just need some suggestions.

Each page have a similar structure, consisting of three main areas: header, content and footer. As you can see in the picture above, the header contains a band with its name, the current user connected, disconnect button, connect time. Also in this band will be able to make and logos of the beneficiary, the EU logo and operational program that has made financing etc.

Under this bandwidth can still be found two bands in the region header. These are current and address the current page menu, both of which are arranged one under another.

All application menu has been ordered not to occupy the horizontal surface of the display page, allowing the submenus to be displayed as a popup. This menu is generated based on access rights and the role the current user.

Error messages:

For each data field, the application will validate the data. Some data will be built in database/catalogs and the user can select from the drop-down, some will edit directly in editable fields.

Data from the drop-down will be correlations in the database and the system will generate error messages such as "*uncorrelated data ...*" , "*Required value should be selected ....*", etc..

For the data in editable fields, validation will be introduced such as: long mandatory minimum or maximum required field. The system will generate error messages like: "*Required*", "*mandatory minimum length x characters*", "*type characters are not allowed ....*".

For validation check-box type there will be validation rest of the fields and display confirmation messages/warnings, like: "*you checked ....*".

Also, there will be validations and error messages on the operating logic. This refers to the sequence of operations performed by the user. These validations will differ depending on the 4 types of users: visitor, student, teacher or administrator.

Validation will, where appropriate, before trying to save the data, for example when editing the value, or loss of focus by that field. Also the field is not properly validated, will be marked with different colors and an image that will attract user's attention. Also, when the user is with the mouse cursor over the component has not been validated, you will see a hint with description of problem.

The system will generate warning messages like "*You can not achieve the desired operation.*".

Special messages will be displayed in areas where access is denied due to lack of authorization "*You do not have sufficient privileges to perform this operation.*".

All posts information, warning or confirmation message will have both text and related buttons, translated into Romanian. Therefore be used to display custom dialogs, avoiding the use of standard dialogues given operating system, whose buttons with text in English or the operating system was compiled.

For each message, along with text and buttons will also display an image suggestive of type information: exclamation mark, question mark, sign error in red etc.

If unexpected errors of all kinds, will try to explain, where possible origin of this error as clearly, accompanied by advice to contact the system administrator to resolve the problem. Errors will be studied later by the system administrator in consultation log file type.

Help system

The User's *Manual* is written in Romanian and will be represented in PDF format, its content will be anchors, allowing users to navigate through the content using mouse clicks on the chapters of the document contents.

From the application context will be able to call help, and as a result of this action will open a special page manual in PDF format system, mentioned above, but open directly to the desired chapter, based on anchors in the document.

Besides manual application, there are manual addressed to the system administrator who deals with specific problems. Course, the language is Romanian. And it will be created as a PDF document with anchors.

Both the menu Help / Help and manuals will be changed according to changes made after any new program. The system is organized into modules, each module having its pages. Below we describe in detail the functionality of each module.

*Administration:*An administrator will be able to manage at least the following entities and links between them: centers, universities, mass education (bachelor, master, postgraduate) courses, groups, years, subjects, teachers, and curriculum specialties. The management means can add, change, deletion, activation, deactivation, association.

The centers will have several colleges, each college has the form of education, and within each there are specializations, and groups.

The curriculum will be defined separately for each specialty in each year of study.

Management module is given a set of catalogs. In this case the order of definition is the following: center, faculty in the centers, forms of education in each faculty, year of study, specialization, association study subjects in each specialty groups for each year of study will inherit previously defined schedule. After that you can associate to each field of study within each group, one teacher from the list of teachers previously defined.

Teachers are defined globally, but is associated to each center for each subject in the curricula of the group. Can therefore be more teachers who teach the same material but different groups.

Administrators will have the right to define specific entities for each center separately, that there may be one administrator for each center, or an administrator can manage some or all centers.

Each director shall be entitled to a center which he also created a central rights can be transmitted by another administrator who has this right. Once an administrator has the right to that center, you can define all the entities associated with a center: faculty, groups, etc. specializations.

Teachers: A teacher will be able to upload materials in the form of files of different formats Once a teacher is assigned to a course for a particular group, it will appear in the window classes when a professor associated with connecting to the system.

The teacher may select a field and will open a window that management course where the teacher will be able to view the files already posted, to delete or add new ones by uploading to the server. The documents will be stored entirely in the database as objects of type BLOB.

The teacher will be able to define a series of questions (with one or more correct answers) and their associated answers (correct ones). Questions are defined for each subject separately. A text question is optional and an avatar and a set of answers with text and / or image. A teacher can manage the list of questions for that matter, that can add questions, modify or delete. For each question will be able to choose an image, text and X responses (each in turn with text and image). Also will check and correct answers.

Questions will begrouped by category. In a test, questions can be grouped into categories corresponding chapters of that matter.

Teachers will be able to define one or more tests for each subject of dealing. As input values for a new test we have set of possible questions, Duration, maximum, number of questions, etc.. Periods of development of the test will be defined separately for each group of students following such material.

Tests are defined for matter altogether, but we also have data-specific groups, such as date and time that will take a test. The test duration and number of questions will be defined on the field, so that each group have the same conditions of participation.

Some questions in the set will be automatically taken from previous years or groups, through selection by the teacher.

During a test, the computer will randomly pick a set of N questions (N specified by the teacher) for each student, available from the set of questions previously entered by the teacher.

The computer will randomly select a total of N questions for each student to give that test. In this way and order the questions will vary from one student to another. Also to be mixed randomly and the answers, we refer to the student display order.

Test results can be viewed and exported by teachers for each subject and group. After completing the test the teacher will be able to see a report with its results, to print them or export them in PDF format.

Teachers can define certain questions in order to drive the student government.When a teacher defines the set of test questions, he can choose by checking questions, those that are public, meaning that students can access as a sort of quiz to prepare for the exam.

The teacher will be able to see the system access history by his students (number and login, download documents, etc.) and can choose whether it will help in establishing activating the final grade. During the course you have associated a teacher, he will be able to view a report history for each student to access the system and can then take into account the historical mark the award. Activity Report will include student name, date and time of action (connecting to the system, disconnect, download documents, etc.).

Students can download their documents uploaded by teachers for school materials from the plan.After connecting a student in the system, among other things, will see the list of courses that is registered. When you choose a course will open a page with all the details of that course: title, description, teacher, etc. and also loaded the professor for that course.

Students can download/upload electronic files in default locations (essays, themes, etc). For each course, students can download materials and their various topics, as described in the

previous paragraph. Also students will be able to upload the server various themes or essays. Once they are loaded, the teacher will receive a message informing the student that made a theme and will have a link to access that topic.

Students can ask teachers questions his room in private or public system.

A student will be able to view posts related to his account and his notes for each subject.

Fig. 5. **Start Web Page U.E.B.** (Ecological University of Bucharest
http://www.kopernic.ueb.ro/GUI/Desktop.aspx)

Both students and teachers will have their mail box, where they can view past messages and they will be able to send and other messages in the system. The system will also have a chat, where you can discuss general topics in real-time.

At the date set by teachers, students will be able to pass the tests for materials studied, displaying to the final result.

Student input in support of the test section will be only the date and time set by the teacher, but it will resolve questions chosen randomly by the system, and finally the student will see only the result, not the right answers to questions.

In the event, while supporting tests of connection problems or other problems that make it impossible to access the student system, a top administrator rights will be able to reboot to test that a student or an entire group. The system will remain a history of these rebooting the user to reset the test, proof, date and exact time of operation are required. Optional and can store information about the host computer where to do this.

Resetting the test will be for a student or teacher the possibility to set the exact date and time when the student will again be examined. These actions are performed only by administrators, and all these actions are monitored in the system keeping all available information is absolutely important for user who executed the action (account information, which is connected station), date and time at second and subject affected by the initialization (the student group). As observation should mention that successfully completed a test by a student group or that there will be rebooted.

Virtual Library:

The system will have a module / library electronic menu.

This module will contain specialized books and other materials in electronic format could help with information platform users. Platform administrators and teachers with special rights can upload books and materials in electronic format.

Both students and visitors will users rights to view this book in electronic format. Virtual library module is a module of interest where you can upload documents in any format. Charging can be done by administrators or teachers, and access these documents can be achieved by any user of the system is that it is a visitor, student, administrator or teacher.

Reports:

The system should allow only the users access to a number of different reports. Reports can be viewed, printed to a printer or exported in various formats, PDF and Excel is required. Reports can be generated only by administrators or teachers, each of these categories have access to special reports. Any report can be viewed in web page to change the scaling factor, and be exported to PDF or Excel.

Generate report introduced a set of questions to each teacher for the part. A teacher will be able to view the set of questions for the courses they patronize, and can export them in formats like PDF or Excel.

Generate tests against reset.

Generate audit report access of the system. These reports will be available for each center administrators to have access rights.

Generate report with the results obtained by students in tests for each test / field / group / year / college / center separately.

Generate test reports / monitoring of the activities students (login, access menus, materials downloaded / uploaded in the system, etc.) These reports will be available for each center

administrators to have access rights. The teachers also will be able to access these reports only to his students.

7. Conclusion

In our information society, no one organization knows everything it needs to know collaboration creates a process for sharing information between interested parties - so that both benefit by having a more global understanding of issues and concerns. The global understanding created by collaboration fosters more accurate decision making, greater efficiencies, lower costs, and propels innovation. The on-line collaboration is applicable at any level, but specially for higher education and adults education.

In conclusion the e-learning systems are useful for any type of education, at any level. E-learning system are used also for the high school level or small children's education (eg. AEL system created by Siveco – educational software provider from Romania). The good practice example is concluding for the present work and emphasizes the importance of the information technology used in the educational processes.

As a future work we are designing a Virtual E-learning Center for adult specialization in different fields, center which will include MLearning for the people that doesn't have a PC or access to a computer but have a phone, taking into consideration the fact that today the number of phones in the world is three times bigger than the number of PC's

8. Acknowledgement

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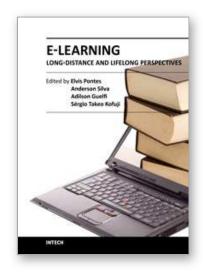
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E-Learning - Long-Distance and Lifelong Perspectives

Edited by Dr. Elvis Pontes

E-learning enables students to pace their studies according to their needs, making learning accessible to (1) people who do not have enough free time for studying - they can program their lessons according to their available schedule; (2) those far from a school (geographical issues), or the ones unable to attend classes due to some physical or medical restriction. Therefore, cultural, geographical and physical obstructions can be removed, making it possible for students to select their path and time for the learning course. Students are then allowed to choose the main objectives they are suitable to fulfill. This book regards E-learning challenges, opening a way to understand and discuss questions related to long-distance and lifelong learning, E-learning for people with special needs and, lastly, presenting case study about the relationship between the quality of interaction and the quality of learning achieved in experiences of E-learning formation.

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