Web Based Classroom Allocation System

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SCHOOL OF SCIENCE & TECHNOLOGY
A thesis submitted for the degree of

Master of Science (MSc) in Information and Communication Systems

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THESSALONIKI – GREECE
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Abstract

Web based classroom allocation system are attracting growing interest because, now considered to be instrumental in the management of education and training both economically and efficiently. Such multidimensional and innovative systems targeted through traditional values, with an emphasis on innovation, to equip students with skills of the 21st century, to combine knowledge, skills and values. The educational process is shifted to learning center and group coworker environments, in involvement focused active learning activities. Activities, in which students interact with each other, communicate, seek and process information. New technologies in recent years have entered the everyday life of people and could not be ignored by the utility. It becomes necessary to familiarize the traditional methods with new technologies in order to make possible the most of their exploitation. The novelty lies in the fact that it will re-grow methodologies, which should be followed in the process of e-learning, in order to adequate acquisition of knowledge.

Paparizou Zoi
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1 Introduction

This paper discusses the teaching models based on Internet. In particular, they explore the possibilities arising from the use of electronic media and the Internet at large, combined with traditional theories of pedagogy. In recent years, with the increasingly development of technology created new perspectives in the process of teaching and learning. The teaching models based on the Internet attract a great interest since they can offer high quality education and training services, finances in a geographically dispersed workforce.

The main objective of a teaching model based on the Internet is to provide a comprehensive solution for accessing and managing all learning events (learning events), supplied by an education and training organization. They are also able to improve the quality of education and training services offered by an organization through its ability to adapt to the particular characteristics of each trainee. These models highlight, as they evolve, the benefits they offer. Initially, the student becomes a participant in personal learning and educational events, creator of the "artifacts". Then, the teacher becomes a partner and mentor, he is the one who organizes, inspires and creates experiential activities, is the one that releases the student's strengths into the classroom, fosters initiative, responsibility and critical thinking. So with the diverse technological means teaching is individualized, amplified multiple representations, advanced search and retrieval. Finally, the student has access to much more information than the teacher can provide. So, it is able to discover knowledge through multimedia content, virtual visits to sites such as museums and various archaeological sites and cities.

The interactive educational materials offered make lessons more enjoyable, interactive, stimulating and helps students to learn in their own way and rhythm, really enjoying technologies. Thanks to online teaching systems concerned and the needs of students are placed in the core of the process. Teachers undertake and bear the radical changes compared to their traditional role and students' families, now have the opportunity of cooperation.
The internet is more frequently becoming a part of our daily lives, and its presence in medical education is unmistakable. Web-based courses seem to dominate the attention of educators and students. If presentations at international conferences are any indication, the interest in this new instructional medium is indeed commanding. At the 2005 meeting of the Association for Medical Education in Europe, for example, at least 104 presentations dealt with various aspects of web-based learning (WBL). But is all this hype warranted? Is WBL really all it is cracked up to be, or is it just a fad?
1. Web based education

1.1 The society of knowledge

The term Knowledge Society refers to a form of social and economic development where the acquisition, storage, processing, valuation, transfer and dissemination of information leads to knowledge creation and satisfying the needs of individuals and businesses and plays an important role in economic activity, wealth creation and shaping the quality of life of citizens.

Initially, the idea of the Knowledge Society is not new. In 1945 FA Hayek wrote an article on the use of the Knowledge Society, in which refers to the importance of the knowledge. In 1957 Peter Drucker wrote "productive labor in today's society and economy is the work that applies the vision and ideas, the work is based more in the mind than in the hands." ¹ Today's Knowledge Society is the result of economic and social transformation, which takes place against the introduction and diffusion of information and communication technologies. Knowledge and information are the foundation for the organization and development of economic and social activities. Information and communication technologies have the ability to encode information. Their evolution is rapid than previous technological excesses.

Communications systems combined with advanced information technologies are the keys to the Knowledge Society. The constraints of time and distance have been re-

moved from the networks that carry information, such as telephone, satellites, cables, basic services that allow people to use networks such as e-mail and interactive video and applications like distance learning and tele-working offer solutions to user groups.² The emergence of the information society, the Internet and the World Wide Web creates many new opportunities and facilitate access to vast information resources, learning tools, environments and services for all. This turn has specific effects on education and more specifically:

- Definition and objective of learning: education no longer defined as the possession of skills that can be assessed by specific test. In the US, for example, the six largest companies state that no one can prevail over the content of discipline in a graduate education because the rules change so quickly that accountants must continually be informed of them. Consequently, these companies are not looking for graduates who know everything, but they have the ability to learn. Education and learning must be given in many quarters, including the ability of critical thinking, communication skills, ability to search information and ability to interact with others.

- Characteristics of learners: we know about traditional students and students who attend the entire duration of the course, live in dormitories and they account for less than ¼ of pupils and students. Today, the society of students characterized by heterogeneity in terms of age, sex, nationality and financial status.

- Expectations of society: we observe that university education if a complete preparation for one life career is outdated. Analysts say that the average job in the future will consist of 6-7 different professions, each of which requires new skills and values.

The Information Society is first of all a society of knowledge. To create an education tailored to the needs of the 21st century it is necessary to know the computers and multimedia in all levels of education, while supporting and training of teachers. Created computer labs and new technologies, networked schools with the web of the internet, while supporting the production of digital multimedia educational material. The participation of the research community in the global search and dissemination of knowledge

sources, expanding the interconnection infrastructure universities and research institutes.

Finally, we would say that the result of the Knowledge Society is the reduction of physical human labor to produce goods and services, the development of knowledge and skills to increase production. To achieve this objective prerequisite is the existence of a higher education level.

### 1.1.1 Chronological development of the introduction of new technologies in education

The new information technologies have evolved considerably in recent years. Moreover, the evolution of import and IT integration in the education system has been quite rapid. When introducing new technologies and information technology in education, we can distinguish three major stages or phases importers computing approach (1970-1980), the average-subject education (1980-1989), technologies as a means (after 1990). Forerunner of all these phases can be characterized an entire period of educational technology, characterized by the attempt to introduce and integrate different media (media) and technologies (before 1970) in education.

The first stage begins in the early 70's, while the problem of which crystallized in the first official reports on the informatisation of society and education, the second relates to the period of the 80s, where is the massive introduction the computer in the school system at all levels of education. The third stage (the decade beginning 90) is in progress and have now recorded the approaches dominate the upcoming years.

### 1.1.2 Selection Criteria

Each training site shall meet the following criteria:

- Support Website: to be an evaluation and confidentiality in a website should record the name of the officer or person, group or organization and, which is a creation site. Contact information, such as the organization address, telephone number and the different copyrights is necessary.

- purpose: it has to do with the subject, setting objectives and matter of the Site. These should be reporting the first page.
• Design: finding, using and archiving various information should be achieved with ease the same applies to the renewal and updating them.

• Content: subject matter: the content of a website is the most important criterion. The graphics available are able to facilitate and perhaps hinder the reading so the topic is not covered in detail. Let us note that the imperfect knowledge is worse than ignorance. Moreover, it should be disclosed and the source of information that there is misinformation and inaccuracies.

• Navigation options: all sites now have a wealth of information and for this reason it is essential and the navigation map, according to which the user is able to find the information you need.

• Assessment: there are too many questions, which related to the content, design, techniques and navigation capabilities. This, however, is not enough. You should define the various educational needs, the learning level of students and the appropriate method to present the subject.

Every teacher website should be able to answer the following questions:

1. Can the website to give courage to the students for further active and creative involvement of importance in learning?

2. Can the specific website to act positively to learning?

3. What is the difference from textbooks and other sources?

4. What are the advantages and what are the disadvantages?

5. Which of the characteristics and capabilities of the Site to help students understand the respective subject.

6. Reinforcing the participation of students on the Site.

7. What are the ways to influence the development of the exploration and students.

8. What are the ways of promoting and exploiting various techniques of received information.

9. What are the ways to strengthen team spirit, communication and cooperation among students and between students and the teacher.

10. Clarifies each source from which pumped the subject.

11. It is worth devoting one year to the activity.

12. Promoted cooperation, sociability.
Generally each training site should have interesting educational activities, be easy to use and has elasticity in various educational topics. In this way there will cover a variety of topics that will be addressed to the whole range of ages. They mentioned, certainly the sources and the various posts which are close to the material dealing with the particular website.

Also, to gain knowledge there should be active participation, critical thinking and testing ideas and perceptions. This will contribute to a virtual environment, learning that aims to create various concepts and perceptions through the receiving information and which teaching methods will provide opportunities to use in various learning levels and models.

1.2 Technology of Education

Educational technology is a term mainly used in the field of education. The word technology is used by some as the hardware (informative material on devices just created) devices, which provides information and serves as a tool to complete a task. Educational technology refers to a particular approach for the completion of education.

According to a brief historical background, educational technology can be said to have started with the emergence of language, a powerful tool that has allowed the accumulation of knowledge to pass from one generation to the next. Then we had the appearance of writing, the art of writing is believed to be associated with the birth of what we now call education. The technology of printing has shaped education as we know it today. Typography determined the educational process to such an extent that it seemed natural and obvious, enabled the rapid increase in the rate and intensity of information and led to the European Renaissance. Many books were printed 50 years after the invention of Gutenberg, which are produced by many European writers.  

The radio as a means of education failed to recognize and successfully integrated. While, the TV was incorporated into the educational process, taking someone special regional role. The 60s in America and England, was an important starting point of educational technology considered audiovisual media. In modern history, educational technology associated with computing technology. According to Papert, the computer is the Proteus of machines. What is particularly important is the universality and power to

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imitate. Due to the fact that they are able to get a thousand forms and simultaneously serve thousands of functions, are reasons that make it particularly attractive as compared to thousands of tastes and interests. The 20th century pre-occupied with the idea that new communication technologies, such as the cinema, radio and television, have a significant impact on education.

As Educational Technology is defined any material tool or instrument, designed with the intention to use the educational process. We can distinguish two categories: technological objects developed for another purpose, but in corporate in the educational process(e.g. text editor) and technological objects specially designed for the educational process(e.g. language Logo).

The educational technology refers to the use of technical devices in instruction; learning. As a special discipline of educational-methodology began developing in the late60s, first in the US and then in Europe. The American psychologist Lumsdaine distinguish educational technology:

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• Apply scientific knowledge of physics and engineering of production techniques of teaching learning devices from simple machines to computers.

• Development of an overall technological concept for instruction; learning, which is based on fundamental scientific researches.\(^5\)

The O'Shea and Self, in 80s, stated that 'the educational technology not only related devices or equipment, but it was a branch of behavioral sciences, which is currently not supported by any educational theory. Also they pointed out that technical education did not consider the computer as a piece of equipment. If the educational technology focuses on teaching and learning, the computer will be the implementing agent, regardless of its use. For computer-based education, learning environments give us a new perspective on the nature of teaching and training and general education objectives.\(^6\)

Different kinds of applications have been developed for Information and Communication Technologies, designed specifically either for learning, or for widespread use. These categories although retain their essential characteristics, modified overtime through growth and technology development. The main categories of applications of Information and Communication Technologies are:

• Simulation systems: this is what all of the different techniques that are able to use computers in order to mimic the functions carried out in the various operations of the real world or processes thanks to simulation.

• Modeling systems: is that interdisciplinary study in which used those models that can understand and construct systems for businesses with a view to development.

• Educational robotics: is we would say that the learning environment in which people involved in it are motivated by the design and construction of the creations (so that object whose characteristics are similar to those of life living that everybody lives from us or animals). These creations have been given initially and later mental form of cash. They are built with different types of materials and scrutineering carried out by a computer system. Domestic is called original or otherwise simulations.

• Experimental devices systems.


• Open software investigate specific issues
• Open programmatic software.
• Educational games
• Hypertexts
• Practice and training software.
• Intelligent problem solving systems.
• Collaborative learning systems.
• Open software regardless of contents.7

The concept of educational technology has affected the early 1980s, and the remarkable progress in the use of computers is developing new types of dialogues between learners and educators. The distance education, in particular, offers a dynamic, large improvements on previous models. Communication between schools, has achieved access to use the mail, but progress is slow. With the internet for the first time, we have an educational technology that supports fast and easy communication. The ability to dramatically transform the material, programs and text, showing remarkable progress.8

The need for alternative ways of automation may be more fervent in the field of distance learning. The principles on' distance education are in old fashion courses by correspondence, which feeds documents to prevent their students to study from home. The workshop cost approaches zero as the school requires a certain amount of re usable materials.

The Internet promises to raise the level of education by correspondence, and promises to do so cheaply by improving the availability of student material. Not only replace the mail, television and radio as means of delivery, but can achieve new topics, films, sound and automatically educational programs quickly. It can be used to add human communication in educational models, which is relatively impersonal. Using e-mail and computer conferencing, teams of students can be compiled into online communities where they can participate in discussions with their trainers on a simple basis.

Most courses offered in university education supported by hybrid or blended methods and multimedia. This mix and match of methods allows schools to offer a series of on-

campus, off-campus and records distance learning. Many colleges and universities focus only in online delivery schedules. 9

The increase in the number of online courses and programs that focus individually on a medium for teaching and learning tools have been shown to be less effective and pleasant to learners. Most courses and programs characterized as 'online' is actually a mix of distance and traditional university education. Many studies and evaluation projects suggest that combinations of different strategies and tools, and synchronous and asynchronous access to information, resulting in true education results.

In blended or multimedia courses, training technologies do not enable it not only facilitate the training, meet the challenge to provide adequate, affordable and great cognitive changes. In all cases, some types of traditional grades and face-to-face interactions (such as electronic tutor) is a necessary part of the blended learning environment.

In distance learning promoted centers distance learning providing teaching materials, training and educational services tailored to SMEs (SMEs), large enterprises and public logistics, expanding the advanced techniques of distance education in schools. The European Commission should support quality standards programs and courses that create a favorable environment. The industry and public logistics gain from cost reductions and optimize the use of training and education elements also employees who need more knowledge can take advantage of lifelong learning programs, people who are stranded at home and in remote locations, students who have access to higher quality teaching.

The existence of a network for Universities and Research Centres carried out the development of connections through trans-European networks (high bandwidth, high definition, interactive multimedia services) universities and research centers across Europe, with open access to their libraries. Universities and research centers will be set up networks, private companies could also link their laboratories with them, as well as a trans-European public library network. There is also an increase in the productivity of research programs through the creation of wider groups leading to partnerships between institutions.

Greater use of telematic services promoted (e-mail, file transfer, video conferencing, distance learning, etc.) by European SMEs, with links to public authorities, trade associations, customers and suppliers. Improvement of information relating to value added

services and communications in general, among SMEs. Increasing accessibility to trans-European data networks. If the necessary ISDN networks are available, the private sector will provide trans-European value-added services tailored to SMEs.

Collaborative learning (collaborative learning) is a field in which cooperate scientists coming from different scientific areas (psychology, pedagogy, computer science, etc.). Described the collaborative learning as "a situation in which two or Most people learn or try to learn something together." In Unlike other environments supported by default in the technology, Collaborative learning does not require the use of advanced technology. Emphasis Located on cooperation, which systematically studied both the learning space and the workplace. In cooperative learning they can be caught from binary groups to large communities and develop activities that are synchronously or asynchronously in the same space or remotely, with or without the computer intermediation and duration. It ranges from a few minutes to several weeks.

Collaborative learning by computer mediation concentrates relevance of the research and education community in recent years, since firstly there is significant evidence of the effectiveness of this approach, other major developed software tools supporting learning supported by computer is one of the most promising ideas for improving teaching and learning. This due firstly to the possibilities offered by modern technology information and communication, and secondly, the renewed interest the role of social interaction in learning.

Learning can be enhanced and the success can be achieved with a live online order, not only with the knowledge of how to use tools effectively, but to learn to build a reliable cooperation of professors and students and to encourage use of new approaches and techniques of online collaboration by involving students in this.10

1.2.1 Traditional testing differences with Web testing

In order for somebody to be able to effectively start testing web environments they need to understand the differences between the technology and architecture of traditional and web testing.

First of all there are three types of applications each of one differs in the environment in which they are tested. Below we are going to see each of them in details.

The first and most known is the **desktop application**. This type of application runs on personal computers and work stations, so when you want to test the desktop application you are focusing on a specific environment. You will test the complete application broadly in categories like GUI, functionality, load, and backend, for example DB, so generally speaking to categories that compose a computing machine.

Moving on to the **client server application**. In this type of application there are two different components to test. The actual application is loaded on a server machine while the application’s exe is loaded on every client’s machine. Testing will happen broadly in categories like, GUI on both sides (both sides meaning the server and the machines the application is running), functionality, Load, client-server interaction with all the types of operating systems, backend. This environment is mostly used in Intranet networks. During the test scenario the tester needs to be aware of the number of clients (individual computers), the number of servers hosting the applications and their locations, so the testing can run properly and detect all possible bugs.

The last type of application is the **web application**. It has quite a few differences from the two previous ones as the tester doesn’t have that much control over the application.

This application is loaded onto a server. The location of each server can be either known or not. Nor exe is installed on the client computer. These applications must be tested in different Web browsers and OS platforms because perhaps there will be inaccuracies. Thus in general such applications are controlled primarily on the browser compatibility, operating system compatibility, error handling, and for the backend and the load.

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The different tests performed for the backend applications are:

- **Server operation testing** is the function that tests whether the server can serve up the content along an HTTP protocol and that it can use different templates.

- **Integration testing** is the phase in which individual software modules are combined and tested as a group.

- **Script testing** is a set of instructions that will be performed to test that the system functions as expected.

- **Database functionality testing** checks if the elements of the database work correctly relatively to the data being stored.

- **Database security testing** is the phase in which attacks are being done to check if there are any bugs in the database’s security measures.

- **Database performance testing** in which elements are withdrawn from the front-end and the time and accuracy needed for them to get processed is checked.

So to sum up the main differences between a desktop application and a client/server application is that a desktop application runs in single memory (front end and backend in one place) and there is just a single user. A client/server application runs in two or more machines and is menu-driven. The connection with the application exists always until the logout of the system and it allows just a small number of users.

**Web testing**

These applications are mostly developed for Internet, Intranet and Xtranet connections depending on their usage. Again these applications need browsers, web servers and DB servers. A web application has a browser, which monitors the data, a web server which manipulates the mentioned data and a database server in
which the data is stored and retrieved. The applications accessible in browsers are developed in HTML, DHTML, XML, JavaScript etc. (We can monitor through these applications). Applications for the web server are developed in Java, ASP, JSP, VBScript, JavaScript, Perl, Cold Fusion, PHP etc. (All the manipulations are done on the web server with the help of these programs developed). The DB server uses Oracle, SQL server, Sybase, MySQL etc. (All data is stored in the database available on the DB server).

The different tests performed in these applications are:

- **User interface testing for validation & user friendliness** which checks how a user using different operating systems and machines can interact with the application.

- **Functionality testing** to validate behaviors, i/p, error handling, o/p, manipulations, services levels, order of functionality, links, content of web page & backend coverage’s.

- **Security testing** to both web server and DB server testing to reassure that no gaps are present in order for a malicious attack to take place.

- **Browser compatibility testing** is the phase that browsers are tested to see if all functions are presented as they are supposed to.

### 1.2.2 Web Application components structure

A typical web application would involve the basic components detailed in figure. A web based application operates as a standards based service, powered by server side software. All end user and administrative functions are accessed remotely, using any standard web browser software. Web servers are configured to respond to publicly accessible web addresses as well as to password protected web addresses. Web based applications are often viewed as simply a form of software systems. Web based applications have unique characteristics that pose challenges in development, testing, deployment.

The web application includes of sets of servlets, JavaServer Pages (JSP) pages, tag libraries, Hypertext Markup Language (HTML) images, document, audio,
video, style sheets, and other Web content that can be used on any server compatible with the servlet specification. A good designed web application is portable across the majority of web servers without requiring changes to any of the servlets, JSP pages or HTML files within the application. Additionally, each web application has its own session, servlet context and class loader as well as directory structure. This design ensures a sufficient level of coordination between the various components of the application while allowing separation from other applications that could be running on the same web server\(^\text{12}\).

One of the benefits of web applications is that they have a standard place on all these the different instruments contain a web application should go to function properly on servers web. Following is described the place of the majority of standard components of an application web:

- WEB-INF/lib directory - JAR files (holding packages of Java classes providing a certain piece of functionality)
- WEB-INF - web.xml that provides the core configuration for the web application
- WEB-INF/classes - Individual Java class files of the application
- Top-level directory of web app or a subdirectory excluding WEB-INF - All files (JSP, HTML, images, style sheets, etc) that are accessible via a web browser

The model way to organize an application decreases startup time for new applications and reducing ramp up time for a new development, joining an existing project. The figure below shows the standard locations for web applications deployed to Tomcat:

\(^{12}\text{http://www.java-forums.org/}\)
Mobility of Web Applications

The standardization of Servlet Technology Model encompasses standardizing the position of the web application funds means that any web server that conforms with the standards of the Java Servlet should be able to develop and run any standard web application.

The benefit of this is to avoid vendor lock-in, as well as forcing suppliers to compete with the characteristics that matter most to you and your organization and price. This happens because the seller knows that if you are not satisfied with the performance, power, ease of use, support and the cost of their web server, it will not be hard for you to redeploy your application to another web server.

Segregation of applications using the Servlet environment

When the various web applications deployed on the same web server, the Java Servlet technology model is designed in such a way that web applications do not interact. The two ways in which this works is that each application will have its own uniform resource locator (URL) which is used to access the functionality and will have its own Servlet Context object in order to communicate with the web server. Finally, a key point to note is that when the web application is running on a web server, where a server receives a request from a client, not the web application that handles the request, but the web container in which the applica-
tion has been developed. The container then gives web application, the HTTP request and response and calls the appropriate method of implementing web. This is one of the key ways that web applications are kept separate while running in the same web server. This formulation facilitates both the development and deployment of applications web. Neither the project nor the administrator does not need to deal with how the web application will integrate with existing applications for the web server. Only if there is a reason for the web applications to communicate with each other, there is a standard means of accomplishing this (normally through the Servlet (Context).

**Structure of a Web Application**

As shown in the first picture organizing an installation of Tomcat web applications have a standard format that is portable across all compliant Web or application servers. The list of top-level application Web (called MyTestApp in the figure) is a directory name of the user's choice. Below this list is a clearly defined organization, which defines content types go to specified locations.

**Individual Servlets, Beans, and Helper Classes**

Servlets are Java classes that are designed to respond with dynamic content to client requests over a network. Similar to all Java classes these files are placed either in WEB-INF/classes or a subdirectory of WEB-INF/classes that matches their package name. Access to a particular servlet is done by specifying a URL using the servlet-mapping element in the web.xml deployment descriptor file. This files is located in the WEB-INF directory of the Web application. An example of this is shown below:

```
XML Code: Servlet Mapping in web.xml

1  <servlet>

2  <servlet-name>MyTestServlet</servlet-name>
```
Servlets, Beans, and Helper Classes

Exploiting the existing packages that could contain servlets or other files. Class provide functionality in your application. This could be JDBC connectivity, security or a number of other key areas of your application. These courses are generally grouped into files JAR, and JAR files placed in WEB-INF/lib directories. Most of you will be placed prepackaged, but can utilizing the existing functions of the body, someone to make sure that the classes are in the packs and that the correct structure that matches the package name inside the JAR. In most web servers, JAR files can also be shared across multiple applications Web

JSP Pages

A JSP is a page that the servlet container will translate into a full class compiled Java servlet. Initial JSP pages are placed either at the top level web application directory or in a subdirectory with a name that is related to this topic.

HTML Documents, Images, and Other Regular Web Content

Regarding servlet & JSP engine, the different HTML files, GIF and JPEG, style sheets, and other Web documents, it is worth noting that they follow exactly the same rules followed and JSP pages. They are in the exact same positions and access to URL addresses in the same form.

The Deployment Descriptor - web.xml
A deployment descriptor, web.xml file is a key aspect of your web application. It provides the configuration requirements of your web application in an XML format. In the web.xml file, your web container will find all the information to:

- register and create the URL mappings for your servlets
- register or specify any of the application's listeners and filters
- specify the context init parameter name/value pairs
- configure any error pages
- specify the application's welcome pages
- configure session timeouts
- specify security settings that control who can request which web components

Tag Files

Tag files are used to create custom actions to be used in JSPs. You might already be using some in your web application in the JSP Standard Tag Library (JSTL). This library is most likely already included in your application in a JAR in the WEB-INF/lib directory. But for functionality for your application that is not standard you will most likely build your own custom tag handler for doing this. To create and use custom tags, there are three components that you will need to do:

1. Create a tag handler class that defines the tag’s behavior
2. Create the tag library description (TLD) file that maps the XML element to the tag implementation
3. Apply the tags to one or more JSP files

Tag Library Descriptor Files
Along with the tag handler you have created to provide the functionality needed for a web application, will need to provide a tag library descriptor in order to associate the class with the chosen XML tag name.

**1.3 Teaching models**

The Student calculator support and supplement standard or non-teaching methods is a valuable tool and a highly effective means learning with multiple benefits. The various didactic models (Joyce Etal 2009, Boss, Krauss 2007) used for this purpose, can be grouped into the following three main categories:

Based on the educator

- Lecture-based, tutorial-based
- Inductive model

Based on the student

- Web quest, inquiry model
- Problem-based, “POE”
- Project-based
- Role- play

Based on the group

- Collaborative learning
- Communities of practice

The pupils, as part of lesson plans, in which the use of technology and particularly the Student Computer in the educational process has been integrated:

- They approach knowledge with exploratory and often playful manner through interdisciplinary work.
- They act creatively, experiment, learn through discovery.
- Critically address the issues raised and develop search skills and selection of information instead of memorizing and mere data presentation.
Co-operate as members of groups of students with common goal.

They become "teachers" conveying useful information or experiences to members of the group in which they work.

Follow their own pace in the process of consolidation of matter through individual self-assessment tests.

1.3.1 New forms of internet-based education

The impact of the Internet in education seems not just limited to use as an auxiliary tool, as an additional educational tool that they have at their disposal the teacher and learners. The very nature and advantages of the Internet resulted in the development of new forms of education which, as we shall see below, have global changes in the institution hitherto called 'education'. The first signs of these new forms of education identified in Higher Education. It is estimated that currently over 80 million people attending a university in the world over the Internet. Moreover, 35% of educational institutions of the world offer courses on the Internet, while developments are clearly more pronounced in the US, where it is believed that in two years, 4 out of 5 universities and colleges in USA will enable online courses (e-versity).

So today we talk about these forms of education are implemented basically the computer and use the Internet:

- Level indicators: High or Low depending with the processing where have suffered the data
- Formats Visualization where adopted from the system
- Type renovation at which target the Visualizations B.C. Year Study Objective, Access in sources, etc.
- Destination information: In what addressed information where provides the system via of representations interaction B.C. educational, trainee, User, researcher

We should note that these terminologies are one attempt to describe the various forms of education that appear nowadays following the rapid technological development in recent years. Trying to approach critically to some extent modern education, especially for simplicity we will refer to all forms of the generic term 'Online Education'. The
above simplification is not of course mean that ignored possible variations in the findings of work for each form of education separately. Nevertheless we will try to give a possible general framework in our analysis.

There searchers conclude to discuss to day a web Open Education, which can be offered by Open Universities, Traditional Universities with special centers, "On-Line" Educational organizations University Networks and other organizations. We believe it is important to note that the above includes non-governmental or non purely educational organizations.

In our country, the development of online education is not on the same level as the other countries of Western civilization and especially the United States. Currently applications are few and are mainly in the implementation or pilot operation phase. Some academic institutions, including the National Technical University and the University of Athens, have moved in the experimental implementation of relevant educational programs, especially for postgraduate studies (laccase, 1999). But for now these programs have not been developed to a degree sufficient to be considered studying entirely through Internet. A representative case is the Greek Open University (EAP). The EAP offers undergraduate, postgraduate and graduate education studies (www.eap.gr) Most of the work is done through Internet, but part of the materials sent by post, the students participate in regular meetings in vivo with teachers and participating in a written exam made in various cities of the country.

1.3.2 Types of E-Learning

E-learning on Acoustics tele-education, tele acoustics using graphs and distance learning using multimedia. These types of e-learning, analyzed individually in the following subsections, offer an alternative clearly better than other training methods, such as training using computer (Computer-Based Training, CBT), computer-assisted instruction (Computer- Assisted Introduction, CAI), educational radio and educational television. These types interact in a structured and planned way. In contrast, e-learning interact in real time and can be adapted quickly and successfully to the specificities but also the way the response of students, but also to changes in the educational environment.

Thanks to distance learning universities and various educational institutions and centers may offer courses and seminars effectively remotely. This replaced the traditional edu-
cational structures and processes. Add, then, "virtual components" in the way they function, yet allow their conversion to entirely "virtual organizations» (virtual organizations).

Audio tele-training

This is for him the type of e-learning, in which the dual direction audio communication is supported between a professor and his students. students are feasible in remote areas (acoustic audio conferencing). The acoustic distance learning using a telephone network selected as telecommunications infrastructure and combined with special devices to minimize noise and various interference if the groups of participating students is great. Basic structural components of the acoustic distance learning are the telephones, microphones, speakers, and the "acoustic bridges", which provide for the interconnection of multiple phone lines.

Acoustic distance learning using graphs (audio graphic tele training)

This type of distance learning supported by the transmission graphs via facsimile device or H / PC. As to the type of acoustic tele teaching the main communication tool is the voice. This is because the transmission of complementary graphs providing the indispensable visual stimuli.

E-learning using multimedia

This type of e-learning supports dual direction communication, both visual and acoustic (video conference) between multiple locations. Uses computer systems (computer-based interactive videoconferencing). These are systems that allow the exchange of information of various types, such as data, audio, animation and still image.

Mobile Learning

By Mobile Learning or M-Learning we mean a form e-Learning which is achieved when the user does not participate the educational process being in a space but a planned uses the advantages of learning opportunities which offer technology of mobile devices. With the use of mobile devices Students can participate in learning from wherever found. The term M-Learning covers the possibility of learning by using mobile devices such as mobile phones, tablets, palmtops, PDAs, netbooks, laptops. Additionally the M-Learning term focuses on the mobility of both the trainee and the trainer while raises some restrictions on the creation and presentation of educational material on mo-
bile devices. By using smart devices to support educational process have several advantages as well as restrictions due the small size of these devices.

**Learning Advantages of using Mobile Devices**

Mobile devices are very popular and wide spread worldwide. The popularity of mobile devices and the growing their use for purposes other than telephony as is on Distance learning is due, and that:

- It is portable
- It's personal
- easily parameterized by their user
- Enable collaborative learning
- They offer connectivity from anywhere in the educational content
- It is be operable with one hand, even with a finger
- They can directly operate even when the user changes network or country.

From the above points it is apparent that the Web can now be accessible from anywhere and anytime so it is now easy and direct access to any application e-Learning. The user no longer needs to remember that it must do a certain work when he returns to a desktop computer and may be submitted by mobile device or to update the score. In addition, as mobile devices appearing on the market in new forms and shapes, the variety of their potential increases (GPS receivers, cameras and cameras, voice recognition, touch screens, etc.) in Web may be accessible to a much larger audience and under all situations (such as access to medical information during Operation rescue on a mountain). Finally, today, many more people have access to mobile devices than on desktop computers. Especially in developing countries is very likely that mobile devices with Web capabilities play an important role in trying to access all the Web and about making e-Learning through mobile devices even more popular as compared to formal education.

### 1.4 Web based learning

The term e-learning was born in the mid-1990s, while developments in Web and interest in the asynchronous forums. E-learning is essentially the synchronous and asynchronous communication, which by using electronic instru-
ments aimed at creating and foundation of knowledge. Technological foundations of e-
knowledge is the Internet and related communications technologies. Basing on this very
association defines e-learning as a synchronous or asynchronous learning, which is con-
ducted via the Internet, intranets, the Extranet and other Web technologies. moreover,
defined as "the use of technology of computer networks, including the Internet, to pro-
vide information and education. " The American education and development commit-
tee(American Society for Training and Development-ASTD), with reference to the
technology and education of minors, stating that "e-learning is the teaching material and
learning experiences delivered or enabled by electronic technology ".

Online Management Systems e-Learning, e-Learning Standards Soon appeared the need
for open standards for the description of the learning material. The main reasons for de-
veloping learning standards description Object is the need for reuse of the learning ma-
terial. It is very important after creating a course for e-learning this material may be re-
used the next time you learned the lesson and only the updates and improvements need-
ed. Developments in e-learning is rapid and needs required to cover one platform e-
learning management is increasing with thus continually out new versions and develop
new platforms.

Also, it is very important an upgrade of the platform or a transition from one platform to
another, can’t result in re and the learning material. The learning management systems
should to meet the numerous needs and requirements of their users.

The e-learning follows an open and flexible training concept in which the student is the
"center of the learning process." The pace, the theme and the method of learning the full
control of the student, who can be educated in many different ways, anywhere and any-
time. The main objective of e-learning is the creation of a broad research community,
through the use of information and communications technology. This idea reflects a par-
ticular educational approach, with the use of new and evolving technologies assist in
creating collaborative learning communities, sustainable beyond spatial and temporal
constraints.

Moreover, it is possible asynchronous collaborative learning. The asynchronous collab-
orative learning to recommend was an oxymoron in education. Plus, both autonomy and
cooperation are not contradictory concepts. Opposite, now considered as those neces-
sary data for a unique and qualitative change of criticism. With the ever-growing infra-
structure of digital networks and improving the ability of students to access and use
their unlimited resources and tools. However, the industry of e-learning extends beyond just access to information. Posing as the basis of communication and the additional interaction of the people involved in the learning process.

A "future based on knowledge" based on adequate access and understanding of information. In other words, the capacity and classification of knowledge. In the 'era of over-information" does not need access to additional information. We must learn to manage and understand the existing sea of information. The revolutionary power of e-learning seems at this point. It offers one better way processing, understanding and Information reproduction. Current Information passive transmission methods conflict with interactive and productive potential of e-learning. E-learning improves access to learning materials while the cost of online access to information decreases with the evolution of information technology and communications. E-learning is not just another tool, but will inevitably subvert all forms of education of 21ouaiona. Although the influence of the traditional educational institutions was initially weak, but better understand the possibilities and strength of both e-learning will drastically transform the learning and teaching approaches. The Web-based learning include any educational intervention that is able to use the Internet (ora local intranet). Today there are three major types or configurations in WBL: first seminars, the second on-line discussion groups and thirdly the virtual patients.

The purpose of the Teaching System Design (Instructional System Design, ISD) is to support and automate (partially) the process of guidance of learning in cognitive area, such as a course, a seminar or a lecture series. The teaching (guiding) process (instructional process) refers to the combination of all actions that teachers and students perform to learning objectives are the best achieved. ISD uses sources allocated into three categories: humanitarian (human), educational (educational) and technological (technological). According to the philosophy of education and available learning resources didactic systems (instructional systems) differ. Particular importance is given in the sense that students are at the center of the system and surrounded by all the resources and tools that facilitate learning process.

To ISD based on an instructional design model that depicts how learning. The main purpose of an ISD model or process is the construction of a learning environment in order to provide the conditions that can to support the learning process. The didactic de-

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design is developed five (5) stages, each of which incorporates formative evaluation to assess the educational process during the implementation period of. Most modeling based on one or more learning theories which shape their model. If the creator based on behavioral theory (behaviourist) or theory Gnosticism (cognitivist) or constructivism (constructivist) model. It reflects the theoretical background.

Considering that e-learning is the use of Internet technology for the distribution and acquisition of learning experiences, the didactic design is the process that focuses on learning rather than technology. By using ISD in e-learning is possible:

a) To improve consistency(Consistency) between learning component
b) To structure effective learning content
c) To keep the student- centered educational process.

While all models are designed to facilitate the non-internet technology have the necessary information in order to extend the electronic learning. Regarding the structure and content of the model of instructional design and all three models include analysis and guidance steps and educational material and choice and interaction may be applied to the eLearning since in this process is given by content and the possibility of access for learners to essential information. On activation, interaction and involving all three models can be applied to e-learning.

1.5 Advantages

The wider use of new technologies is the key to eliminating educational barriers. E-learning can contribute significantly to the creation of a culture of life long learning and to make the education and training access sible to all, whatever their place of residence, age or employment status.¹⁴

Learning with the use of digital technology is everywhere and always available, without requiring organized training grounds. Instead, it is available to all those with even just technological means, such as a common electronic Internet connection. In this way, contribute to saving time, money and physical stress of all participants fold, teachers and students-since no longer movement required participation in the learning process.

E-learning is extremely rich in content, which indeed improved easily and continuously. When properly designed, can support a highly sophisticated presentation of the learning object text, hypertext, multimedia, video, audio, image and simulation. Offers reusability and establishment of a common base for many education issues through multiple forms of organization of learning content. It also provides many ways to target the educational presentation material which take into account both the level of knowledge of each trainee. As well as the diversity in the way of conception. In this way, the student surpasses the "serial model of education" and select the parts to which it wishes to focus to. In addition, over the Internet, directly accessible at no cost, to rich information sources, such as foundations data and international libraries and hardware designed by famous Mind scientists.

It undoubtedly excellent possibilities for individual learning, so to suit the preferences of each student, even with special needs. It may be effected in different ways, such as self-study, asynchronous collaboration teaching. Furthermore, the student dynamically accessing the learning materials to suit his needs, can manage the progress of repeating as often as appropriate at the same learning activity and exchange views with teachers and classmates.

The open network environment allows students and scholars from different parts come into contact, thereby enhancing creating user communities. It may therefore to strengthen cooperative as active participation of students in specially designed environments which provide more incentives, better quality interaction, enhance communication, flexibility, continuous support among students and eliminate competition. It also provides capable of measuring certain characteristics and statistics evidence, collated by the platform e-learning and related the effectiveness of the training.

E-learning undoubtedly offers opportunities for lifelong learning in the creating new educational activities in academic institutions and organizations education. More specifically, the operator has the option to train a theory unlimited number of executives at a lower cost, regardless of geographical restrictions and best timing chosen by each student. It requires an initial development costs, but the learning material remains available for repeating without additional costs. The level of education may even be continuously improved during the year while the students have the opportunity to choose between similar available training topics offered by different players.
The current manual system of allocating labs to students is not only time consuming for lectures and head tutors but it also inefficient, inconvenient, causes lapse in communication, and increase in human resources. Using manual system such as the one above haw drawbacks. The first no-table point that comes to mind is the increase in error. For example, lab clashes may not be avoided if a chosen lab times are not checked for each of the student’s subject during lab signups; this checking could save student time and hassle latter.

1.6 Disadvantages of web based learning

The e-learning initiatives require a significant investment of time, resources and staff. Therefore, main disadvantage is the cost for designing and development of programs and the cost of hardware and software for access users with high speeds.

One of the main features of e-learning is accessibility. Everything is a "click" away, whenever necessary, at the office or at home. Very often, however, ignored the difficulties of finding space and times the e-Learning. It is at least unrealistic to believe someone how busy people are required a-plomb to devote time to e-learning. Furthermore, electronic technology makes it affordable a vast database, which converts into a extremely difficult task finding the required material.

Multimedia and high resolution graphics, which are used to make learning more fun and more attractive, not easily transmitted to a average user, with a medium to slow connection. Having often result in disappointment learner and the abandonment of the effort. Also prohibitive can be come time a user needs to be familiar with basic Internet concepts but also with the appropriate e-learning tool.

In many programs e-Learning lack of interaction between learners. This results in a peculiar kind of isolation of learner, who should regularly interact with both the teacher and with peers. It is this cold communication atmosphere can make the average as less attractive and thus less useful.

Using static and non-interactive learning can create the mindset that the information which is presented electronically can be considered as education. In other words, sometimes forgotten how to train needed something more than merely providing information.
Required practice, feedback and guidance. Even many scientists say that they must "Stop pretending that the passage term is education".\textsuperscript{15}

However there are many disadvantages. Many of these are related to the advantages which there are above. Many teachers benefit from using WEB and MISCELLANEOUS activities performed due to, especially if one considers the total time needed in order to execute and complete any work.\textsuperscript{16}

1.7 Phases of a learning e-learning system

Learning is a result of the progressive development and processing concepts and designs. So we would say that knowledge is a microcosm of a simplified, yet coherent logical system, which represents a finite and specific part of the world that has been created to serve the education and training. The detailed understanding of a distance learning system should be supported by the following learning stages:

1. Preparing to deal with the training materials.
2. The collection of information required.
3. In relation to previous knowledge.
4. The transformation by creating organizational frameworks, based on the authorized interpretation of educational material.
5. The development of personal understanding.

If we want education and training to be more effective it is necessary to incorporate an e-learning system in the following teaching functions, which are either parallel or cover learning phases mentioned above:

- Orientation. This is setting the scene and explain the requirements.
- Mobilization. This is the challenge and maintain interest.
- Presentation. This new knowledge is introduced in a clear haptic.
- Clarification. This is the explanation with examples and support, where there is not enough prior knowledge.

• Detailed processing. This is the introduction of additional material to develop detailed knowledge.

• Consolidation. It is providing opportunities for the development and control of personal understanding.

• Confirmation. This assurance Suitability knowledge and understanding achieved.

1.8 Why students and staff drop out

Initially, a prospect to leave the school students are school officials, teachers, managers and general staff. Reasons why this perspective is important are listed below:

1. In many cases, school officials are not able to understand the students’ decision to leave school. It is likely that students have difficulties in some courses, the time may even be not to be sufficient. Required course teachers to be able to understand the reasons why the current student chooses to retire.

2. The prospects of the staff on the withdrawal inevitably reflected in those strategies arising from the withdrawal of the establishment concerned. For example, there are few times when the staff blames students for lack of basic intelligence, in which adopted a strategy which sets recovery and rehabilitation. In cases where students are unable to study and attend classes in the school, the staff there is no reason to try to recover these students.

Plenty of research shows the views of staff regarding students' withdrawal. It is hardly surprising that great emphasis is given to academic criteria leading to withdrawal. Criteria such is the lack of preparedness of students, the failure of intelligence and poor skills. ‘In effect staff tend to emphasize to those factors associated with withdrawal over which they feel they have little control—such as student intake.’ Sometimes the reasons can be quite pejorative—‘laziness’, ‘playing the system’ and so on.

Comments ranged from the simply factual to the more complex but appeared to fall into categories:

• Personal circumstances:
  – ‘J discussed withdrawal with me in February as she felt there was too much conflict between her studies and social commitments.’ – ‘Husband made redundant and she has had to take on extra work to compensate.’
– ‘A was lacking in confidence. “When required to express ideas in writing, I gave her some extra help and she was improving but a difficult domestic situation with one of her children was the final straw.

• Time factors:
  – ‘M underestimated the time it would take to study. Her first assignment was very good but it took her a long time to produce it. She felt she would have to give up all her other interests to get a degree and she didn’t want to.’ (Comment from tutor: ‘The preparatory material sent out before the course start is very good but gives a misleading impression of the pace of the actual course as they can work through it at their own pace.’)
  – ‘Student felt overwhelmed by the amount of reading involved. She hadn’t expected the course to be so academic’
  – ‘First assignment was of a low standard, which may have been disappointing. But her letter talked of work and family commitments.’
  – ‘Student seemed keen to get on but he has a baby daughter and his wife seemed slightly hostile to his studies when she answered the phone. He said he had to withdraw because of family commitments.’ (Comment from tutor: ‘He was my only black student and I wondered if he would have felt more at home if the group had been more mixed.’)

• Tutors’ judgments:
  – ‘This student was elderly and difficult and said the work was beneath her but I think she’s simply no longer capable of organized study’
  – ‘She just didn’t seem very committed.’

• Student attitudes:
  – ‘Student said she found the course material “abstract” and “unreal”. She explained that she liked things to be “black or white” and found it difficult to deal with conflicting perspectives.’ ‘Student claimed lack of time but I think he was finding the work too tough.’
1.9 Content management systems

Content management systems are software that run on creating and managing content on the Internet. The term Content Management Systems (CMS, Content Management Systems) refers to applications that allow customers to manage the web content, such as text, images, tables, etc., in an easy way, usually similar to the use of an editor. The management applications content allow changing the content without necessary expertise related to creating web pages or graphics, as usual the texts written by some online WYSIWYG ("What You See Is What You Get ") html editors, text editors that special, similar to MS Word, which allow formatting of text whenever necessary.

Changes of the site can be made from any computer connected to the Internet, without having installed specially Web editors, graphics etc. Through a simple web browser (browser), the user can write a text and immediately inform the website. What we call often "dynamic content" in a website no It is far from the information presented on the site and can change by themselves administrators through any application which essentially can import (add), rectify and delete records in database tables, where most often recorded all such information.

This means not having to create many separate sites for the presentation of information on the site, but sufficient for a single design to where we want to display our content and bean expert in a particular programming language (ASP, PHP, Coldfusion, Perl, CGI, etc.), who undertakes to display the correct information in the right places

Briefly, some of the advantages and characteristics of aintegrated CMS is:

- Quickly update, management and archiving of content website
- Update content from anywhere
- Simultaneous updated by multiple users and different Software
- Do not require special technical knowledge by administrators
● Easy to use and direct knowledge of the final result, as with known writers

● Ability to search the contents recorded and automatic file creation

● Safety and protection of the design site from wrong actions that could create problems in appearance of

● Separation of content from planning and navigation (navigation) site

● Changing the design or navigation mode without requiring the update all pages by the user himself

● Automatic creation of links between pages and avoid problems existent page

● Less burden on the server (server) and using less space, since there are not many repetitive static pages, the once the development of the pages is done dynamically

● All content is recorded in the / databases, which we can more easily and quickly protect them respecting backups

Additional Features

Of course there are other features and additional services, according to the CMS, formerly charged extra and sometimes incorporated they are free to use, such as:

● Application management and display of advertising banners, polling and configuration (personalisation)

● Ability to display content to partner sites(syndication)

● Statistics

● Manage Members

● Newsletters

● Forum
1.10 The application

The implementation is designed with CMS identifier. When speaking ID CMS is a system WYSIWYG web application intended for managing content. Also can and allow the front end, generating inline. It is responsible for the care of the web in a way that offers ease of use, drag and drop interface.

Below are the features of the website for users who have registered and want to participate in the activities of the application. In order to enroll someone at the site enough to choose the button "create an account" and fill in the required fields. If a user is then registered to be able to exploit the content of this page should enter that. It is therefore necessary to complete the e-mail, and its password. If one of the two elements is incorrect, you will be unsuccessful login message appears, otherwise it will display the home page of the application.
Home

The display shows the home page of the application. The home page, prepares the visitor for the contents of the application and at the top, there are the following tabs:

Educational tool

From this tab, the user can obtain information about educational tools and their usefulness. Moreover they can be presented various educational tools and methods used as alternative forms of education.

My Account

From this tab the user can see information on the registration information of the application. So you can modify by choosing the tool of processing of the e-mail address, contact telephone number, address and the group that has joined.

Even after clicking the printer icon located above the elements has the ability to print its account information. So may at any time have access to information without the need to ask the administrator of the website.

If you modify any of the data, the storage will be completed by pressing the Submit button.

Test

From this tab, the user can gain access to activities and quizzes. Essentially pressing the menu of tests will appear the following window:
This is a table with information for each test such as the ID, the duration that the time will be available to the user to complete the creation date and the date from which and after the test shall not be available. Moreover, at the bottom of the page are links to move next and previous page in order to monitor and test the previous years.

Having selected the tests to which the user wishes to participate will have to press the button of the projector to switch to it.

Then would one introductory page appears with specific information about the test that is to follow.

### Name test:
In this field, indicate the name of the test that will follow

- **Description:** Here the user can obtain information on the content of the test
- **Number of questions:** Written questions involving test
- **Duration:** The time given to the user to complete the test
- **Start / End:** The date of publication of the test and the date of termination
- **Success rate:** The percentage of correct responses to that user if the test conducted in the past

To start the user completing the test is sufficient to press on the display button. The questions are multiple-choice questions and must choose the correct answer through a number of proposals. Above left indicating the remaining time to complete the test, and if the user is over, can register his answers by clicking on the submit button Test.

Then, the display will show a message of successful completion of the test and a link which will redirect the user to a page display of results.
**Basic computer**

Q1) Which of the following is not purely output device?

- Screen
- Memory
- Mouse

In addition from the user's success rate, there is information such as the total time it took the user to complete the test, but they managed to "get" successful activity.

Moreover, it has the possibility by clicking on the View answers in detail to see the answers given and whether it was right or wrong, and can send the table below via email to the address entered in the application by pressing the button sent to email.

**Result**

In that centralize data for conducting tests of each user tab. Essentially able to follow the grouped test which involved and the degree of success.

The person responsible for the management of the application is the administrator. An administrator can modify content intervening in the code and application files, but also through the same page. Specifically upon entering the page will display some additional tabs and options through which can add modify and delete content.

**Members**

The administrator by pressing the tab members will see all users who are registered in the application. In addition they will see their data and has the ability of the search bar type in someone's name and the system to return the possible results.
In the picture above we see the window that appears when the administrator chooses the members tab. On the left there are three buttons:

**View:** pressing the button of the projector will display a table with details of user information as shown below.

So shall obtain information about the direction of the user's e-mail address, contact number, his address, the educational group belongs to the state, ie whether it is set as active or inactive user and role, which has appointed the manager himself.

**Edit:** By means of this button, the administrator is able to modify some user information, makes inactive for example, or to change the group belongs.
Delete: Pressing the delete button, the administrator will delete the corresponding user from the application, so he will not have access to it.

To add a new user to the application, the administrator should select the button «add new user» displayed by selecting the members menu. Then asked to complete the data and complete the registration by the button «submit».

Questions Bank: The question bank management menu of questions that will be added later in a test.
And here there is a search bar through which the administrator can search questions. Since the projection button will display the respective questions while the button deleting the specific question will be deleted.

To modify the existing query should be selected icon processing «edit». Having done this, the manager will display the below image.

Next to the subject, there is a drop-down menu in which that question is part of the respective module. Moreover, they can be added via "add new option" and other possible responses, and can be changed and the question that is in their field.

**Add new question**

To add a new question to be achieved on the button "Add New" and the display screen will appear.

The scope of the question should be typed text associated with the question and the theme option the corresponding issue to which the latter refers. In the areas of the bottom of the page typed the possible answers and should were taught and the right of selection boxes. They can give the least two possible answers and can be added over the button «add new option».

**Test**

From this menu is managed to test each one of them containing the respective questions, as stated earlier. Here deleting and projecting through buttons that are next to each of them.

As regards the processing by selecting the corresponding button can change options for each test.
The administrator can set the date of publication and end of the test, the holding time and other items as shown in the picture above.

**Results**

From the menu of results, the administrator can obtain information about the performance of the users, which is essential not only for statistical purposes and to assess the uptake of educational material and identify the weaknesses of the users.

So it can be seen beside each test the respective rates of success, which can be shut off from the delete button. Moreover you can see more details from the display button.
This information concerns:

• The full names and names of users who completed the test.

• The name of the test.

• The correct answers to all questions.

• The percentage of correct answers.

• The time required to complete the test.

• If users or not successfully passed the test.

Setting

The settings relate to two categories, topics and groups.

Themes

The administrator can monitor the existing training modules and add a new order to match educational activities and questions in it. Moreover they can modify or delete existing ones.

Groups

It is possible to modify or delete groups of the application and create a new order that users are categorized according to the educational levels or directions.
2 Conclusions

In this work the main point discussed was the distance education as an alternative way of education. Now the trainer can deliver the training materials without being in the same place with the learner. The history and development of distance learning provides the opportunity for new roads and a new dimension to education. Besides, the most valuable asset of this alternative form, is equal rights to all people without exception. Everyone has the right to education and it is not possible to acquire a physical presence somewhere, can do from home, the workplace or where he wishes, as long as in possession of a computer. The design of educational activities is a key point that the e-learning to achieve the target. With the help of technological means are new ways of implementation and take-up of information and on the part of the trainer acquires more and more features such as the monitoring of student progress, or the overall conduct statistics. The platforms presented perform some of the possibilities of e-learning systems today. For all these reasons it is necessary to inform people about the advantages and the correct application of rules and design standards by entities that implement this action.