New e-learning method using databases

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The objective of this paper is to present a new e-learning method that use databases. The solution could pe implemented for any typeof e-learning system in any domain. The article will purpose a solution to improve the learning process for virtual classess.
Keywords: *virtual classes, AJAX, dynamic web language, databases, e-learning;*

1 Introduction

In our days many companies are trying to create the project e-learning system in order to offer the best training from distance. E-learning intersects numerous fields and practice anc cannot be trivialized into a sample formula for success. Therefore our paper will try to include the database system as a bridge between traditional learning and modern learning.When e-learning was first introduced, it was widely promoted as a means of electronic networks or CD-ROM's. It fails learners as individuals and fails to take into account the social context in which e-learning occurs. Such as, approach relies in one way communication from teacher to learner attending individual and fails to take into account the social context in which e-learning occurs.

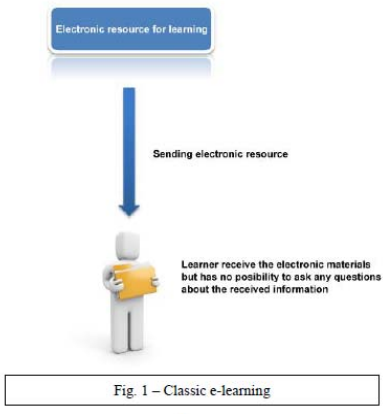

Figure 1. Classic e-learning

Like any process, e-learning depends on effective communication between teacher and student, whether this occurs in a face-to-face classroom or across the Internet. Our paper research is based on the fact that communication can be simulated by using a human knowledge database or using a real person that has the knowledge required.

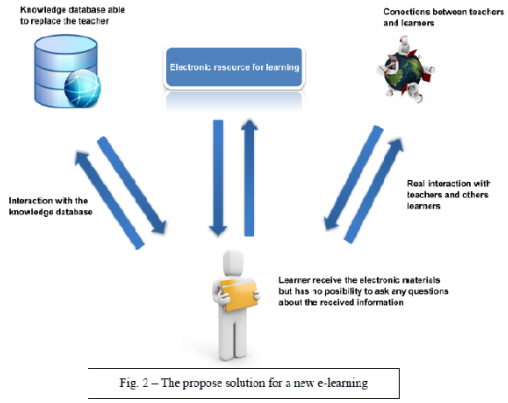

Figure 2. The proposed solution for a new e-learning

Let consider a prqactical lesson for a virtual classroom named identification of the best marketing strategy. None professor could use for simulating a real marketing campaign only text books, specialized programs but also show slides data sheets, pictures of real objects, or other media resources. Our research will try to identify how many students are working better and understand more when they are using an interactive program construct on databases.
The interactive program will offer them the possibility to build step a marketing campaign using an interactive simulating model of a company in connection with a lot of marketing factors. First we gave to the learners in text books and pictures of real

objects for identifing the triehedral. We have noticed that only four students from ten can succeeded in identifying a correct strategy for successfully marketing campaign. The special program will help nine students ten to understand the concepts and construct a better and more succesfully marketing campaign.

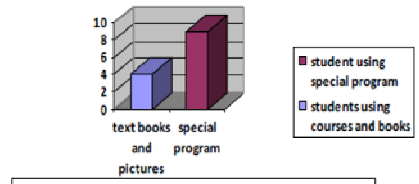

Fig. 3 – Learners capability for understanding the information

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Figure 3. Learners capability for understanding the information

The proposed solution will integrate in the same platform theoretical principles, applications and tests. The aim of this paper is to present a solution to improve the learning process for any virtual classes specially based on simulation. This solution is not limited just for economical classes. The new solution will help the learners to better assimilate the information received. The two main objects of using new methods in virtual classroom activities are:

1. Optimize performance of existing activities by using new learning methods;
2. Improve the quality and the attractiveness of learning using a new teaching method can be a great aid in developing a learning process with high performance indexes. Moreover, since some programming languages, like Java, PHP, Flash are designed for the Internet and enable to users to use interactively, the conversion for virtual classes learning could be provided all over the world.

The most known six advantages of e-learning are:

1. Reduced overall cost is the single most influential factor in adopting e-learning;
2. Learning times reduced an average of 40 to 60 percent;
3. Important delivery of content is possible with asynchronous, self-paced e-learning;
4. Expert knowledge is communicated, but most importantly captured, with good e-learning and knowledge management system;
5. Proof of completion and certification, essential elements of training and learning activities, can be automated;
6. The benefits of integrating, I.T. systems in the high education field must be very understood by the students and professors.

Our solution will generate changes in education and will have impact to traditional classes.

The proposed solution that we are going to present will have three aspects:

1. The solution will be credible;
2. The solution will resolve many of the learning problems;
3. The solution will correspond with the practical and theoretical necessitties in report with the final user, the student;

The student will also use interactive technologies that support different types of capabilities;

1. Internet access to digital versions of materials unvailable local;
2. Internet access to search, and transactional services;
3. Interactive diagnostic or adaptive tutorials;
4. Remote control access to local physical devices;
5. Personalized information and guidance for learning support;
6. Simulations or models of scientific systems;
7. Communication tools with for collaboration with other students and teachers;
8. Tool for creativity and design;

9. Virtual reality anvironments for development and manipulations;
10. Data analysis, modelling or organization tools and applications;
11. Electric devices and learners;

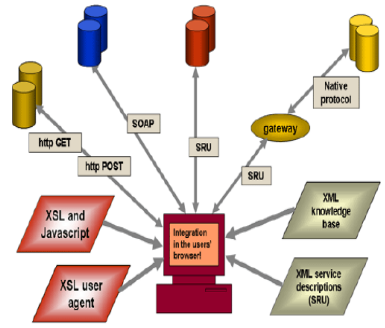

Fig. 4 – Technologies involved in e-learning

Figure 4. Technologies involved in e-learning

The figure presents the proposed solution. In the case that student can interact both with the teachers and also the knowledge databases integrating in IT system for feedback. Like the professor, the integrated IT system put the student in a virtual classroom with the possibility of interaction like into a natural environment. The integrating IT system is containing one server, specialized software based on AJAX, PHP, and MySQL databases and a broadband connection. The advantage is that the student/learner is able to access the course and interact with virtual professor from all over the world. Our research presents in the Figure 5 a solution to develop an integrating IT system with a new specification and using databases.

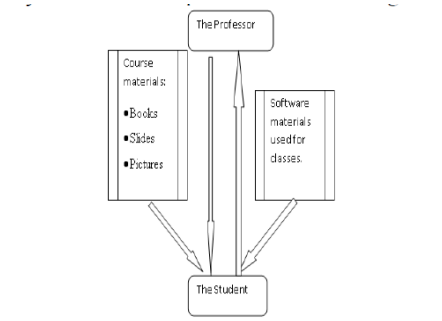

Fig. 5 – Short presentation of the module system interaction

Figure 5. Short presentation of the module system interaction

The new solution permits to the students to develop their own study plan schedule and arrange their leisure time to enable them to study from anywhere via the Internet. The students can study the multimedia teaching material interactively since we use web technologies, HTML, PHP, AJAX and MySQL. Each student's studying status is controlled by the system, so that the mechanism to reopen the lesson where the learner stopped last time, the mini tests mechanism designed for checking the student's level, and monitoring mechanism for the student's progression are offered. While learners are reading the course notes, they also can use the teaching material to verify what they have learned and to quantify the results. This is a new method of learning which we want to teach them. The knowledge verification could be done using homework and questions while studying, he or she can find the paper answers from there or wishes to know more details about the questions, the student can use the mailing mechanism on "Communication" page and the questions will be answered by online professors.

Conclusions and intentions:

The paper presented the challenge of integrating an IT software solution in virtual classes. The paper described a new method used especially for simulation real models.

The proposed solution that we have presented has three essential aspects:

1. The solution is credible;

2. The solution corresponds with the practical and theoretical necessities in report with the end users, the learners;
3. The presented solution could be a great help in learning process for virtual courses also have some advantages such as: reducing learning times, improve the teaching process, offer to student/learn new materials, books, examples and course notes.

2 Content details

E-learning includes all forms of electronically supported learning and teaching. For the implementation of the learning process are used information systems and communication systems. Transfer of skills and knowledge is provided by e-learning. Education opportunities and collaborative virtual digital computer-based learning, web based learning processes are provided by e-learning. The content is conducted on the Internet, CD-ROM, satellite, TV, audio or video-tape. The content can be instructor or self-paced and includes media in the form of audio, streaming, video, image, and animation. In the domain of education the new technologies are used. Young children can use the interactive new media and are able to develop their skills, knowledge, the perception of the world under the supervision of the parents. To achieve a certain objective in this era of the Internet and technological progress each individual must have the necessary knowledge in technology. E-learning is synonymous with IBT (Internet Based Training), WBT (Web Based Training) and CBT (Computer Based Training).

The latest estimates of the learning industry estimated at 48 billion dollars. The active based of e-learning is the development of multimedia technologies and the Internet. In 2008 about one quarter of post-secondary education had participated in online courses. Ambient Insight Report in 2009 states that a rate of 44% of middle school students after the United States participated in a part of all online courses. In 2014 this figure will increase to 81%. In the United States of America e-learning is moving very quickly. In the United States of America many institutions of higher education offering online classes. Academic leaders of the survey report belongs Sloan see that students are as satisfied as online classes, as well as traditional ones. Members working in these private institutions should have the necessary knowledge and be highly trained in computer use. E-learning is a growing and doctoral programs have developed and adopted it.

E-learning is used by k12 schools in the United States of America. Some e-learning environments took place in a traditional class, other allow students to attend classes at home or in other locations. Around the country there are many states that use virtual platforms for e-learning cyber school in the entire country and they have continued to grow. Virtual school offers students the option to connect to synchronous or asynchronous learning courses from anywhere there is an Internet connection. Students use technology in schools, universities and colleges and must meet for submitting their work. The progress of students is maintained by cyber schools and students have opportunity to select courses, giving students the opportunity this option to create their own program. E-learning is usually used by students who do not want to go to traditional school and mortar school because of severe allergies or other medical problems, fear or bullying and school violence, and students whose parents want going to homeschool, but aren't qualified. Cyber schools create a real paradise for students that want to receive a high and quality education. The most stable charters of cybernetics school offer to students a large and an extra program, which will not grow curriculum choices, that are offered and they also offer support for students to

have complete success. One of those programs includes: Assistance Student Program for students that want to fight with other domains as teachers. Open coordination for those students who need extra support, carrier orientation, a lecture title, Gifted Education Services, special educational services, trips to grow socialization in a cybernetic environment. Island of study helps the students to like mathematics. The supervisor monitors the progress of the students and offers communication to students for orientation and coordination in the carrier. The private schools are online available. These offer the benefits for e-learning for students in the states in which charter cybernetics school aren't available.

Corporate

E-learning was adopted and utilized form different companies to inform and educate the engagers and the clients. The companies with channels of distribution have utilized channels to educate the personnel of sales about the evolution of the products, without the need of organization of physical courses.

At the beginning of 1960's the teachers of psychology from Stanford University Patrick Suppers and Richard C. Atkinson have experimented the use of computers for teaching mathematics and lecture for child in schools from East Paulo Alto, California. The Program Standford Education for Young Gifted has the beginnings in that early experiment. In 1963, Bernard Luskin had installed the first computer in a community college of industry and has worked to the development of instruction assisted on computers. Luskin have turned off the reference point of his dissertation at UCLA with Rand Corporation, in the analysis of obstacles at computers assisted. The first systems of e-learning, based on computers Computer Based Learning Training try to reproduce the criticize styles for teaching in which the role of the systems of e-learning was assumed for the transfer of knowledge and the following systems next developed on computers –CSCL (the collaborative learning) have encouraged the development in common of knowledge. In 1993 William D. Graziadei had described a course about online computers, tutorials and evaluation projects with electronic email. Until 1994 the first online school was elaborated. In 1997 Graziadei, W. D. had published an article entitled "The Construction of Learning Teaching Asynchronous and Synchronous Environment Exploration of a Course / The Solution of a class about Management System. They have described a process at University of State from New York (Suny) about the evaluation of products and the elaboration of a global strategy for the development of a course based on technology and management in the process of learning-teaching. The product must be easy for utilization and administered, portable, repeatable, scalable and easy accessible and must have a high probability of success for long term and with cost-efficiency. Today the technology can be multiple and are utilized in e-learning, from blogs for collaborative software, e-Portfolios and virtual classroom. The most situations of e-learning use combination of those techniques.

E-learning 2.0

The term of E-learning 2.0 represents a neologism for CSCL systems that came in time of appearance of Web 2.0 about a conventional perspective of e-learning based on instruction patches, that were delivered to student to utilize missions. The tasks were evaluated by the teacher. The new places of e-learning have grown and were accented on social learning and use of social software, like, blogs, wiki, podcast and virtual world like Second Life. This phenomenon was mentioned like learning with long queue.

E-learning 2.0 is not based on CSCL, that suppose the knowledge (to understand) is constructed social. The learning is placed with conversation on the content and interaction about problems and actions. It

must be remarked that a lot of online courses like those developed by Murray Turoff and Starr Hiletz Roxanne, in 1970 and 1980 at New Jersey Institute of Technology, courses at the University from Galph from Canada, British Open University and online at distance courses from the University of British Columbia have utilized always on-line discussion with students. The practitioners like Herasim based on using networks for learning and construction knowledge until the term e-learning 2.0. Exist a higher utilization of the virtual classes (on-line presentation, delivered directly) like an online learning platform and classroom for a diverse set of learning providers, like the state college from Minesota and universities from Sachem School District.
In plus the social networks became an important part of e-learning 2.0. Social networks were used for promotion of on-line learning communities on subjects like preparation and testation of the education language.

Mobile Assisted Language Learning (MALL) represents a term that describes the usage of portable computers or mobile phones for helping at the learning of stranger languages. Humans think that schools aren't in tendencies with social networking. The educators of a few traditional schools have promoted the creation of social networks with exception of the case in which exists the communication with the colleagues.

An approach of e-learning:
E-learning has evolved from the computers that were used in the domain of education. Exists a tendency to move on services of blended learning, in the case of computer is based on activities that are integrated with practical situations or classes situations. Bates and Poole(2003) and OCDE suggest that different types or e-learning forms can be considered like a continuum, from any e-learning, like the utilization of computers and the Internet in teaching and learning, with help in the class, like the classroom to realize the lecture of the slides.
Power Point is sliding at the disposition of the students intermediary of a course of website or a management system of learning, of the programs of laptops, in the case that students need the bringing of the laptops in the classroom and use them like a part of a face-to-face in the class, of the hybrid learning in the case that the time class is reduced, but aren't eliminated, with a lot of time is reduced, but aren't eliminated, with a lot of time on-line learning, that represents a form of learning at distance. This classification is more similar with that of Sloan Commission Reports reporting the e-learning statute, which refers at web consolidation, complete web and dependent of web to reflect the grow of intensity of using technology. It can observe that e-learning describe a large game of application and is usually supervised reciprocally by publications of research which realize from e-learning a course of discussion. Popular instruments of e-learning are: Blackboard Inc. and Moodle. Blackboard Inc. has much 20 millions of users day by day. Blackboard offers six different platforms like: Blackboard Learn, Blackboard Colaboram, Blackboard Mobile, Blackboard Connect, Transact Blackboard and Blackboard Analitycs, Blackboard instruments permits to educators to decide if their program will be mixed or completely online, asynchrony or synchrony. Blackboard can be utilized for K12 Education, Superior Learning, of Business and Collaboration of the Govern. Moodle represents an Open Source Course Management System. Is free to download and offer opportunities of blended learning and the platform for courses of learning at distance. Moodle website has a lot of tutorials for creating a program or to become a student Moodle.

Computer Based Learning
Computer Based Learning it refers at using

computers like a key component of educational environment. In time that this thing it can be referred at utilization of computers in a classroom, on large term it refers at a structured environment, in which computers are utilized in didactic objectives. Cassandra B. White has researched the important role of computers that plays in the superior learning. This evolution, to include the computer had supported the collaborative learning, in plus data management was realized. The type of computers has changed in the last years from heavy dispositive, slows that had occupied a space in the class, at home, at the office and laptops and portable dispositive, that are much mobile, in the form and dimensions and that is minimalized about technological dispositive that will continue.

Computer Based Training (CBT's) are auto-paced from accessible activities of learning from the intermediary of a computer or portable dispositive. Usually CBTs has the content in the presence in a linear way, also like reading an online book or to obtain knowledge and abilities through methods that are much favorable. From this point of view, they are usually utilized to teach the statistics processes, like the utilization of software or complete of the mathematical equations. The terms Computer Based Training is usually used alternatively like web based for formation (WBT), with the principal difference by the delivery method. In the case that Computer Based Training (CBT) is usually delivered by CD-ROM, Web Based Training is delivered using a web browser. The evaluation of learning in CBT (Computer Based Training) usually comes with questions with multiple variants, or other evaluations, that can be easily obtained by a computer, like drag and drop, radio button, the simulation of others interactive ways. The evaluations are easily marked and registered by online software, offering immediately to end-users the feedback and the finalization state. The users have the possibility to imprime the registration of finalization by a certification form. CBT's offers learning stimulus forward the methodology of traditional learning from manual, or class based on instruction. For example, CBT's offers friendly user, solutions for the satisfaction of needs of continuum education. In replace of limitation of the students at courses participations and reading to print solutions, the students are capable to have knowledge and abilities by methods that are much favorable. For example Computer Based Training offers visual benefits of learning by animation or video, usually are not offered by other ways. Computer Based Training can be a good alternative at the learning materials edited from reach mass media, including video clips and or animations, can be easily incorporated to grow learning. Another advantage for CBT's is that it can be easily distributed at a large public, at a low cost if the initial development is finished. With all this, CBT (Computer Based Training) have some problems of learning, also. Usually the creation of CBT (Computer Based Training) in course of development (e.g. Adobe Flash or director) is usually much complex that an expert in the subject or if the teacher is capable using it. In addition, the lack of human interaction can limited also the type of content that can be presented and the type of evaluation that can be effectuate. Much organizations of learning start to utilize CBT (Computer Based Training / Web Based Training) like a part of a program much complex of online learning, that can include online discussions or another interactive elements.

Computer –Supported Collaborative Learning

CSCL (The Supported Collaborative Learning) represents one of promises innovations for enriching the process of teaching and learning, with the help of modern learning of information and communication. Is unanimously accepted for distinguish the collaborative learning

from the traditional model of "direct transfer", in which the instructor it supposed is distributor of knowledge and abilities, that is given in many ways by the neologism

E-learning 1.0, even that this method of direct transfer is the most accurate it reflects Computer-Based Learning Systems (CBL). Blogs, wiki, Google Docs are used usually CBCL environment in the group of teaching community.

Using the social Web 2.0 instruments in the classroom is permitted to students and teachers to work together, to discuss ideas and to promote information. According to Sendall (2008) blog's, wiki, and abilities of social networks are investigated to be utile in the classroom. After initial were used instruments, the students have reported a growing of levels of knowledge and of comfort using Web 2.0 instruments. The collaboration instruments are preparing to students with the needed technology the force of work from today. In function of the activity of work Cassandra B. White consider that the continuum aspects of motivation and success regarding e-learning must be keeping in the context of the learning efforts.

The enriched technology of learning (TEL)

The enriched technology learning (TEL) has the objective to offer innovations, improvement of efficiency of costs) for practices of e-learning, about the physics persons and organizations, independently of time, place and pace.

The technology problems

With the conditions of learning the technology, the technology of instruction, the term of Educational Technology is used to refer the utility of technology in the process of learning in a much broad sense different from instruction on computer or assisted instruction on computer from 1980. At the same time, is much larger than the learning of online terms, terms or online education that in general, it refers to the learning based on web. In the cases in which the mobile technologies are utilized, the term of m-learning had become more much frequently. With all this, e-learning have implications fare from the technology and it refers at the effectively learning, that has placed by using these systems.

E-learning is naturally prepared for distance learning or flexible learning, but can be used in the conjunction with face-to-face teaching, in the case in which the term of combined learning is frequently used.

The pioneer of e-learning Bernard Luskin sustained that "E" must be understood in large sense, in the case that the understanding of e-learning is efficiently. Luskin tells that "e" must be interpreted in the sense of interesting, energic, enthusiast, extended, emotional, educational, surplus of "electronic" that represents a national traditional interpretation. This large interpretation permits to applications of 21 century and bring the learning the psychology mass-media in equation. In the superior learning in special, the tendency of growing is to create a virtual environment (VLE) that is in some cases combined with a Management Information System (MIS) to create an environment of learning managed in which all aspects of the course are treated in a consistent standard interface of using the whole institution.

In time which programs ask students to participate at ones campus classes or oriented, a lot are delivered online completely. In addition, a lot of universities offer online services for supporting students, like on-line counseling, the registry of e-counseling, the manual for online buying, the students governs and students newspapers. The recent tendency in the sector of e-learning is screencast. Exists a lot of instruments of screencast available , but the recent is the instrument based web screencast that permits to users to create direct screencast from their browser and to realize available online video, so that the viewers can transmit direct video.

The advantage of these instruments is that offer to the presenter the possibility to demonstrate his ideas and the flux of thoughts. With an video and audio combination the expert can imitate one of the experiences from the classroom and can offer clear and complete instructions. From the point of view of the student, it offers the possibility to interrupt and give to the learner the advantage to pass from their proper rate that a classroom can't always offer.

Technologies of communication used in e-learning

The technologies of communications are classified like asynchronous and synchronous. Asynchronous activities like blogs, wiki and forums of discussion. The idea is that here the participants can engage in interchange of ideas and information, without dependency of implications of another participants in the same time. The e-mail is asynchronous, in which the e-mail can be sent or received, without the implications of the participants in the same time. The asynchronous learning offers to students the possibility to work in their rate. This thing is very important and benefit for students that have problems of health. They have the possibility to finalize their works in a reduced environment of stress and in a flexible time interval. The synchronous activities imply the interchange of ideas and information with one or multiple parts in the same time. A face-to-face discussion represents an example of synchronous communication. Synchronous activities appear with all participants at accession of a date, like example an online chat session or a virtual classroom or a meeting. Classrooms and virtual meetings can use much times a combination of technologies of communications. The participants in a virtual classroom use icons and emoticons to communicate their feelings and answers at questions at questions or declarations. The students are capable "to write on board" and to distribute their desktop, when are administered the rights of the teacher. Another technology available of communication in a virtual classroom includes text notes, rights of microphones and sessions of breakout. Session of breakout permit to participants to work in collaboration in a little workgroup to realize a task, also to permits to teachers to have private conversations with his students. The virtual classroom offers, also the possibility of for students to request direct instructions from a qualified teacher in an interactive environment. The students have direct access and instant at his instruction for the instant and direct feedback. Virtual classroom offers a structural program of classes that can be helpful for students that can find the liberty to learn asynchronous. The virtual classroom offers also, a learning social environment that produces closely traditional "mortar and stone" class. The most virtual class applications offer a characteristic of registration. Each class is registered and is stocked on a server, which permits instant play from any classroom during the scholar year. This thing can be extremely useful for students to reevaluate the materials and concepts for future exam. This offers also to students the possibility to visualize from any classroom that it lost so that cannot be return. It also offers to parents the possibility to monitor any classroom to assure that they are satisfied about the education of children. At online and asynchronous courses the students continue in their proper rate. By online courses the students can obtain the diploma fast and repeat lost courses. The students have access at an incredible reach of courses in the process of online learning and can participate at online courses at faculty, stages, sport or work and also graduated with their classes. In much models, the community and the channels of communication it refers at e-learning and m-learning. Both communities offer a general presentation of the models of learning of basis and of the necessary activities to

participants to work to sessions of learning in the virtual classroom or in standard classroom with technology. A management learning system (LMS) is the software used for delivery and management of education/formation. The LMSs gama of the systems of managed of formation/ registry of learning for software for distributing of courses on the Internet and offer function of online collaboration. A management system of content learning is software for the author content (courses, reusable objects of content). A LCMS can be dedicated to produce and publication of the content which is hosted on LMS or can host the content. A LMS permits teachers and administrators to watch the presence, the load time and the progress of students. The parents can connect to a LMS to present the topics and to access the program of the course and the lessons. The E-evaluation varying from automate test or tests grid to more sophisticated systems became frequently. With one systems, the feedback can be oriented to mistakes specifics of a student or computer and the student can navigate in a series of questions of adaptation of the student that can or can't learn. The best examples are a structure of formative evaluation and are stocked on a XML file. A common format standard of e-learning is SCORM in time that other specifications allows the transport of "objects of learning" (school cadre) or metadata categorized (LOM).

An excellent example of e-leaarning , that refers to the management of knowledge and reutilization is E-learning Marine that is available at active service, members of pensioners and a military dezactivation. This online instrument offers courses of certifications to enrich the user in different domains about military preparation and sets of competences civil. The system of e-learning doesn't offer the objectives of learning but evaluates also the progress of students. This realization is an excellent example of knowledge and the retention of cyclic process of transfer of knowledge and the utility of data and registrations.

In the development countries e-learning is "a popular mode of delivering educational materials in higher education by universities throughout the world".

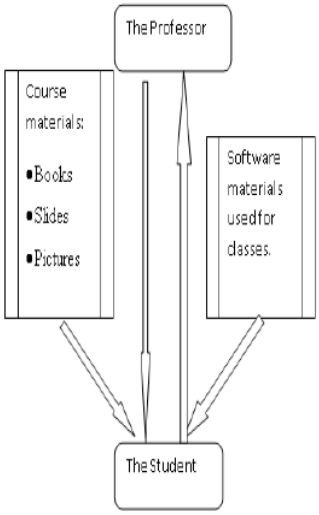

Figure 6. Short presentation of the module system interaction

The e-learning represents „a popular mode of delivering educational materials in higher education by universities throughout the world"[1]. According to this study it exists six dimensions and twenty critical factors of success for e-learning systems in developed countries. Using Delphy method and AHP(Analytic Hierarchy Process) the study colects seventy six of useful answers. According to this study factors of success are important in e-learning systems and in developed countries. For successful e-learning implementations in developing countries technology awareness, motivation and changing learners' behavior are fundamentals.

"This study found six dimensions for implementing e-learning systems in developing countries, including learners' characteristics, instructors' characteristics, institution and service quality, infrastructure and system quality, course and information quality, and extrinsic motivation"[1].

The study called "Online or face-to-face? Students' experiences and preferences in e-

learning" answers at two questions like "Which aspects of e-learning courses do students experience as being favorable for learning?" and "When do students prefer online or face-to-face learning components?". At these questions responded 2196 students from 29 Austrian universities The 2196 students have completed the questionnaire that had like basis the experience and knowledge acquired in time of the e-learning courses and on their own preferences for online components or face-to-face of the learning. These students developing countries: A comparative analysis between ICT experts and faculty".

The students from twenty nine Austrian universities in the study research "Online or face to face? Students' experiences and preferences in e-learning" completed a questionnaire on their experiences attending a course of e-learning. In the end of this study we conclude that students "appreciated online learning for its potential in providing a clear and coherent structure of the learning material, in supporting self-regulated learning and in distributing information. They preferred face-to-face learning for communication purposes in which a shared understanding has to be derived or in which interpersonal relations are to be established. An especially important result concerns students' perceptions of their learning achievements: When conceptual knowledge in the subject matter or skills in the application of one's knowledge are to be acquired, students prefer face to face learning. However, when skills in self-regulated learning are to be acquired, students advocate online learning" [2].

3 Conclusions

The proposed solution that we have presented has three essential aspects:

1. The solution is credible;
2. The solution corresponds with the practical and theoretical necessities in report with the end users, the learners;
3. The presented solution could be a great help in learning process for virtual courses also have some advantages such as: reducing learning times, improve the teaching process, offer to student /learn new materials, books, examples and course notes;

References

[1] Wannasiri Bhuasiri, Oudone Xaymoungkhoun, Hangjung Zo, Jae Jeung Rho, "Critical success factors for e-learning in developing countries: A comparative analysis between ICT experts and faculty", Computers and Education, Elsevier, 2011;

[2] Manuela Paechter, Brigitte Maier, "Online or face-to-face? Students' experiences and preferences in e-learning", Internet and Higher Education, Elsevier, 2010;

[3] C. Mohora, O. A. Calin, D. Anania, "Improving high education process using knowledge management concepts"- Proceedings of the 6th International Conference of Management of technological Changes", 3-5 september 2009, Alexandroupolis, Grecia, Volume 2, ISBN 978-960-89832-1, ISI WEB of Knowledge, ISI Proceedings Database;

[4] C. Mohora, O.A. Calin, L. Mohora, "New strategies to improve the engineering learning process", The 4th International Conference of Manufacturing Science And Education MSE 2009, Review of Management and Economic Engineering, Indexed in Ulrich's Periodicals Directory, EBSCO Business Source Complete Database, Volumul 8/no.1A(31), Todesco Publishing House, Cluj Napoca, ISSN 1583-624x, pag. 71-79;

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