

Review of E-Learning Methodologies in Pakistan

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Abstract: In today's world the most discussed priorities of modern universities is the solution of e-learning. It is becoming a global issue and everyone is paying attention towards e-learning approaches and strategies that what strategy must be used in order to create a learning environment. This paper is based on description about some of the existent methodologies used to create e-Learning system in last three years. Analysis of these methodologies have been done regarding to strategies, formation, standards and embedding technologies, to study the impact and process of e-learning activities in different levels of education. This article also reviews the e-learning different models and the challenges facing e-learning nowadays.

Key words: E-Learning • E-Learning methodologies • E-Learning systems • F2f learning • Digital libraries

INTRODUCTION

One of the contributions researchers can make to the field of e-learning is to give improved methodologies by which to examine the impact and process of e-learning activities in all levels of education. E-learning is more than upcoming and new technology-based instructional delivery mechanism. It is a new type of learning and teaching that requires educators to reorganize how the evaluation of process and outcomes should be conducted. New paradigms for learning and teaching call for new methods of assessment and evaluation. E-learning creates new variables, constraints and issues, making it different from face-to-face learning environments. The roles of the teacher, professor and student change. Required resources and infrastructure differ. Now there is difference in educational objectives among professors students, teachers and institutions [1]. Online education usually provides individuals with very active and busy lifestyle with a substitute to face-to-face learning courses, also allow the individuals to continue studies at their own pace and also let them to identify their personal course timeline by own [2]. Also the online instruction permit the students to have a very accurate perception about the effectiveness and efficacy of their own learning [3] and online classes also increases the interaction between student and professor and also

increases critical thinking [4, 5]. Interaction, flexibility, collaborative learning, teaching presence and a great sense of community are very vital aspects in students' discourses online [6]. This sense of online community considered to be an important predictor of online learning outcome [7].

Electronic-learning is more and more taking over from distance learning as the educational model for the 21st century. The term is applied arbitrarily to almost any learning activity which has even the most marginal link with the Internet. In fact, electronic-learning is an evolutionary movement which builds on diverse forms of distance education.

According to Anderson “ the anytime, anywhere, characteristics of e-learning tools and the fact they are available from devices including desktops and notebooks, can also accelerate the productivity gains by making education more accessible”. Indeed e-learning might be regarded as improvement on the delivery of distance and open learning.

E-learning is defined as “those that leverage various Internet and web technologies to create, enable, deliver and/or facilitate lifelong learning”.

An e-learning system encompasses and integrates critical learning conditions such as feedback, re-enforcers, motivators and information sources that enable learning to occur [8].

E-learning is encouraging an individual teachers and institutions to discover new ways of integrating technology and resources into their existing provision, or to start from scratch with new programmers which are completely online and which widen access to a new market of lifelong learners. With the progression of the: Technologies of Information and Communication (TICs), new education/learning development strategies emerge. Where electronic-learning strategy, is one of the foremost education strategies to, use the TICs with traditional learning elements. That leads us to view the electronic-Learning strategy as a keystone for technological and educational development. The goal of an electronic learning system is transference of knowledge efficiently and effectively. To do this, it is essential the adoption of proper methodology that tackle the particularities of the development of electronic-Learning systems [1] Electronic-Learning is now used by the majority of the universities around the world, it can be easily experiential at Spanish universities [9], like the “Univ. Complutense de Madrid”, “Univ. Politécnica de Madrid”, “Univ. Politécnica de Cataluña”, “U. Islas Baleares”, “Univ. Santiago de Compostela”, “Univ. Salamanca”, “Univ. Jaime I”. The platforms extensively used at these universities are “WebCT” [10] and “Moodle” [11].

In order to start e-Learning system it is essential to make and/or follow an organized methodology to implement e-Learning projects that takes into account all training project factors: infrastructure, economic, human resources technology, evaluation, learning modalities and content development and lastly have the application ready to perform and implement.

Literature Review: Education is very important for our societies. As a result, several people are looking for new ideas in the area of teaching and learning. We can use the renowned knowledge pyramid as a basis to clarify the learning process hierarchy [12]. This hierarchy starts with data gathering/ processing. Data in a context with a meaning are called information. Knowledge is defined as information in the perspective of humans. In order to solve problems, applying knowledge leads to capability. Capability goes away from both knowledge and skills/competence in that it represents “an integration of knowledge, personal qualities, skills and understanding used appropriately and effectively” [13]. Increasing innovative trends in information and communication technologies (ICTs) and the current expansion in electronic learning may create new forms of learning.

Today’s learners have tried to enhance their learning in institutions by embracing these technologies. Information technology (IT) has been empowered to support teaching and learning in classrooms [14-19]. For the successful implementation of e-learning system student participation is very much important [14]. It is essential to study the ways that can facilitate student participation in the systems of e-learning [20].

Previous studies have recognized a number of factors that can influence participation in electronic - learning systems [21-26]. In spite of this progress, a cautious review of these studies have uncovered that they have missed an significant aspect i-e communication environment (e.g. the role of psychological safety, perceived responsiveness and communication climate). Prior research argued that several students are usually reserved and are sometimes having fear of raising questions and expressing themselves [27, 28]. There are also some students who are having lack of experience about learning topic. On the majority of events, they choose to stay silent instead of expressing themselves may cause insecurity and personal embarrassment in front of peers and teachers [29]. In this type of situation, climate of psychological safety communication is vital because it can lessen the negative feeling (like embarrassment) and let the students to feel safe while voicing out their ideas and opinions. It draws upon the psychological safety concept, which can be defined as “feeling able to show and employ one’s self without fear of negative consequences of self-image, status, or career” [30]. Psychological safety communication climate concept considers the interaction and communication perspective of the environment. In such sort of environment, people typically remain involved in speak up, open discussion and listen actively [31]. Prior literature has discussed the importance of psychological safety in order to influence learning [32] [33]. Though, the effect of psychological safety communication climate on’ participation of students in Electronic-learning systems has not been studied systematically. Therefore, the psychological safety communication climate is integrated as a communication environmental factor.

In higher education the learning process usually starts from the bottom up and moves very gradually to the top of the pyramid. Beside this background, different teachers and scientists are in search of more competent path to capability [34].

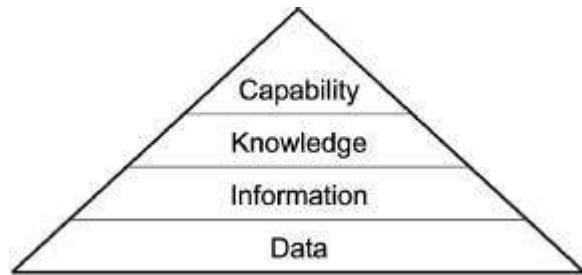


Fig. 1: Learning process hierarchy

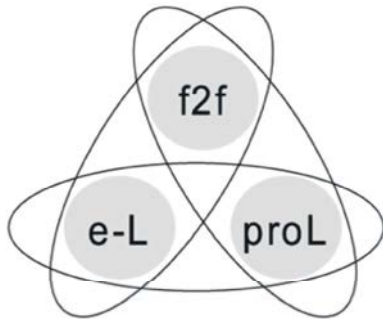


Fig. 2: Interaction between the three pillars of learning

Existing Learning Methodologies: Conclusion of the research shows that as online learning becomes incorporated into the everyday lives of individuals, there found a break-down of the compartmentalization of education [35]. Everyone is becoming a learner and an expert with lots of opportunities to share and seek what they know, critique what they learn and become more involved and engaged and with the global community [36].

Therefore, learning becomes part of day to day work (and play) and moves from a “push” model to a “pull” model that is driven by individual choices [35]. We are going to describe the three main learning methodologies with their particular advantages and disadvantages and afterward classify them in terms of the learning process hierarchy.

f2f Learning: Classroom learning or f2f is the classical learning approach, which has always been admired and will continue to be, as humans learn from humans this is the reason for that, we are modeled on human archetypes. After Recognition of IT’s importance, lots of researchers have studied electronic-learning systems that are deep rooted in traditional face-to-face learning [37, 38]. Researchers consider that the IT use in such sort of e-learning environment is important and may it increases learning outcomes [39, 40]. Some of its advantages are direct communication, Feedback/questions possible,

Very flexible, Not very dependent on technology. But also have some disadvantages like Uniform pace for all learners, Variable teaching quality, Not immediately applicable, No immediate answers etc.

Project-based Learning (proL): In order to solve real-world problems it requires some complex tasks most of them are launched as projects. In most of the cases, practical learning means proL or project learning.

It is clear from most of the research studies and on the basis of our own experience we can say that that proL addresses strongly both the capability and knowledge [41, 42]. Members of the group not only learn the relevant subjects or contents, but also the required skills for communication, team work and project management. This thing makes the proL an ideal methodology of learning. It has some advantages like Very intensive direct communication, Very flexible, Can be at the right location etc but with some disadvantages like Time-consuming, Highly resource-intensive, Unpredictable outcome.

e-L: It was a hype about e-L that has been started in the mid of the 1990s. Why it was like that? The technology especially the Web was available and most of the people thought self-directed individual learning at their home was the future-independent of everybody and everything. The entire e-L community had to learn a lot, for instance, it is quite difficult to motivate an isolated student who is watching a tutorial video for a very longer time.

Advantages	Disadvantages
Learning any location, any time	production costs of e-L content are much very high-a good estimate is 100 times the cost of content for a f2f lecture.
Easy distribution	Technology problems
Active learning at own speed	Not immediately applicable
Easier quality control,	No immediate answers and Isolation (no social contacts)
	Content mistakes are more serious

Electronic-learning has undergone a steady process of evolution and development and is changing as new technologies and thoughts were emerged and

possibly are not static even now Electronic-learning will keep on to develop as long as enthusiastic academics continuously struggle for improving their teaching methodologies in order to further develop the learning experience and to prepare students for working in industry. Most educators consider e-learning as advantageous and beneficial enabling tool that can help students in preparing for the challenging positions lecturers aspire them in order to achieve in future careers.

Electronic-learning is the knowledge exchange by online media, electronic-learning can give power to learners, as well as the mentoring system are held responsible and accountable [43]. In the perspective of this study, the word e-learning represents an e-learning platform usage (Moodle, Blackboard, WebCT, WebX) as an improvement to traditional teaching methodologies in blended learning form.

The specific forms of electronic-learning to be explored is where there is a use of technology to Enhance learning experience of students with the help of: communication forums,online course material distribution, chat rooms, discussion boards, submission and distribution of Assessments assignment, embedded web-links, use of electronic journals etc. sadly, because of time constraints students are not able to attend lectures all the time.

Luckily, with the initiation of electronic-learning, the lectures can be made accessible to the students electronically, so students those are abroad or absent can still continue with various classroom activities whenever they acquire an opportunity.

Electronic-learning gives instructors a very good medium to facilitate students so that they can view their peers work any time, enhance it, add to it or simply they can be benefitted from the quality, approach and appearance of the work that is undertaken at the same level of attainment by other students.To design e-learning material effectively, the instructor has to take into account; motivation,learning capabilities, prior experience and knowledge related to target audience. Lecturers should be attentive to their students need.

The lecturer can get helpful insight about improvement of the design of their electronic-learning content and for the improvement of student engagement and hence accomplishment by encouraging the students to share their views about handling of assessments, course material, etc. there are various factors that should

be considered to make e-learning more effective for the improvement of learning experience and to prepare students to work in industry, in a better way. There are the CSFs I-e Critical Success Factors that describe the guiding or underlying principles of an effort that must be regarded in order to ensure its success [44] (Caralli 2004).

Research revealed that the critical success factors for quality web supported learning are: ; technology factors,institutional factors, student factors, lecturer factors, pedagogical factors and instructional design factors [45]. The only contributory factor is the technology factors here that will not be applied to traditional teaching methodology. All of the other factors will affect the learning experience of students in spite of the medium of delivery. Academic teachers must be significantly reflective designers of their electronic-learning developments [46]. Lecturers must review the course content critically that they have designed by themselves and if it is possible do make request to colleague in the same perspective to review the material critically as well. And also it does help if lecturers have some sort experience of using electronic-learning by own as a student. Another factor that is related to the delivery of online course material successfully, is the willingness to modify and update course content as a result of developments in the feedback of student and marketplace.

In modern universities the solution regarding to e-Learning is one of the most discussed priorities. The entire problem lies in the question which strategy should be used to develop an e-Learning system. This paper is based on the discussion about some of the existent methodologies used to construct e-Learning system and its analysis.

E-learning Approaches

Blended E-Learning Approach: Blended learning is an appropriate combination of e-learning and traditional teaching, both are combined to improve students attainment level from a specific course of study. Human interaction is considered as a very significant ingredient in the experience of learning. In the recognition of the fact that learning has been taken place, the student should have capability to apply the knowledge in a worthwhile and meaningful fashion. There is a best way for testing the students' understanding and knowledge related to any subject, to let the students to discuss a

topic and then to answer the questions regarding to the topic. This methodology will rapidly reveal any sort of gaps in a students' knowledge about a specific area. Research reached to the conclusion that in order to enhance the learning experience of students technology can be used, but cannot replace the lecturer [47]. To make e-learning successful staff and university management should get ownership of e-learning and make themselves satisfied that pedagogy can be maintained, although the medium of delivery is varying. 'Administrators and Faculty at universities resist change because they perceive change as a threat to the existing status quo' and culture [48].

The basic objective of a lecturer is to get the related points across and make sure that the students can apply this information in a constructive manner, and the methodologies of delivering the course material can be applied by traditional teaching methods, through electronic-learning completely or by blended learning.

Analysis: Research revealed that online learning has shown positive impact on attainment, but the evidence recommended that attainment might have been greater influence if the teachers changed their methods by combining/merging online learning with methods with more traditional methodologies [49]. That shows that online learning or electronic-learning can not achieve the same level of student attainment by its own without the blending of e-learning with traditional teaching methodologies.

Blended learning is one of the approach that can overcomes most of the disadvantages of e-Learning by combining electronic-L and face to face learning and is now considered as a state-of the- art for virtual university.

Mobile E-Learning Approach: Mobile learning is the latest innovation in this sector [50, 51], which can be taken to mean a version of electronic-L by usage of a mobile device. But this thing underestimates the potential of mobile learning, might happens at an appropriate location, e.g. learning about how to construct bridges in front of a bridge and information on buildings as walking through a city. Lots of research projects are addressing this point, especially applications in museum.

Concerning to the learning process hierarchy, just like classroom learning, electronic-Learning starts from the bottom but it does not address capability.

Digital Library Approach: IT has made a deep effect on knowledge repositories and learning activities Before the digital library concept prevalence and its applications it has already been recognized that electronic information resources may help learners in order to get a wider world of information, like one in which learners would be stimulated to built up new research skills and searching strategies [52]. Nowadays in the world of digital library rational access to a huge organized repository of digital resources can be provided without the user awareness related to all the fundamental complexities innate in mapping its resources and content and there found no need to discover the separate elements of such sort of knowledge because all such resources cab be integrated apparently [53]. Explained digital future scenario in which teachers and students both are having an easy approach to information resources and tools that has been conceptually as well as physically unattainable to them. Digital library thus provides more wide venue in order to help learners and to build up the ability to, use, access and evaluate information for building of knowledge, in order to think critically to solve problems [54]. The academic libraries have gained the various advantages from the existing digital technologies to extend considerably the breadth and range of their electronic-information services and digital repositories. These all facilities have made the e-library more powerful in the academic setting for responding in a positive manner to the new electronic-learning scenarios and agenda [55]. Electronic-learning has forced itself as a new domain of the electronic-library services. ELLS i-e E-learning library service are related to that bundle of CMS-oriented library information services that are offered through electronic means to distance learning community at both business and academic settings. ELLS is also nominated as flexible, distributed, virtual, franchising, synchronous or asynchronous web-mediated services [56].

ELLS Model Approach: The electronic-library and electronic-learning were engendered effectively within the UAEU ICT-rich learning environment as a distinct e-based domains. Its design lots of benefits from the associated works, which have been reviewed previously. This referral information was incorporated in order to define the spatial relationship between electronic-library services and resources and the contents of the web-based courses. The aim of ELLS model is to delineate the

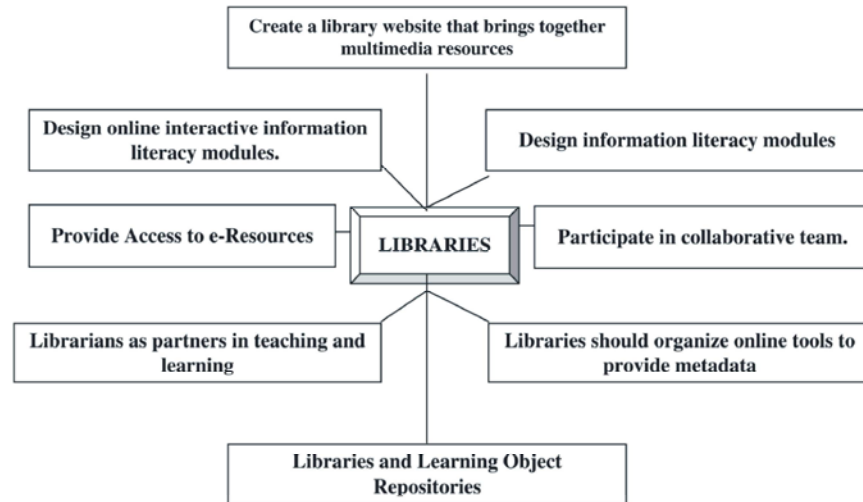
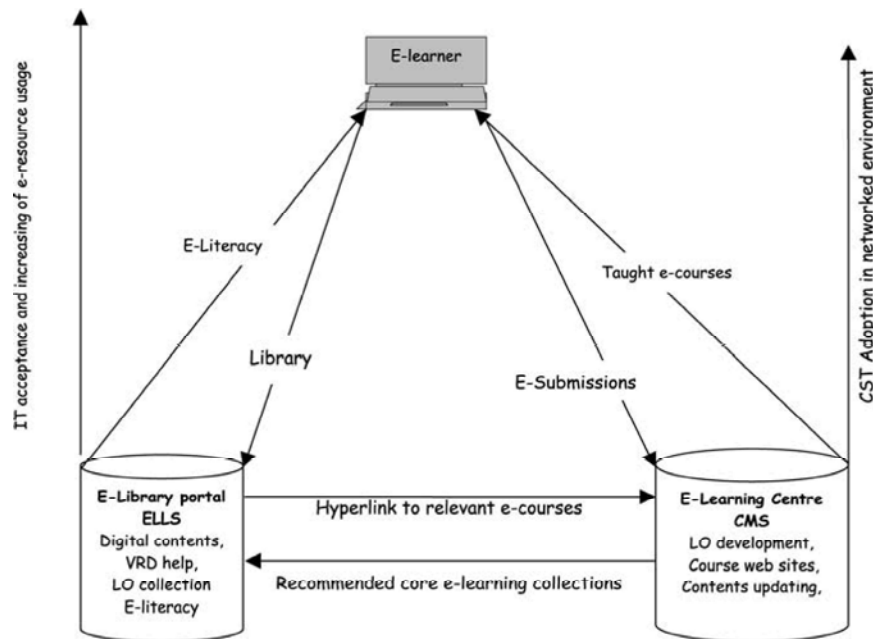


Fig. 3: Lib-eLearning starting points for libraries and e-learning

Source: Helen Nneka Eke (2006)



Note: Author's own design

Fig. 4: A model depicts e-learning library services in academic computing environment

Developed by (Ahmed Taha, 2006)

potential interplay between the two domains to provide instructors a systematic assistance in identifying related networked electronic-information resources and services in support of their distributed projects regarding to learning.

Some of the core functions of each e-based domain were integrated into the ELLS model strategically are given below:

E-library Functional Roles:

- It hyperlinks the e-courses with the library electronic-reference resources like e-journals and e-books and also with the open-access resources based on web.
- VRD i-e virtual reference desk that help and e-mail enquiry service like expert librarian.

- Designing of an integrated web portal to offer friendly access library scholarly electronic-resources with proficient browsing and research abilities;
- Electroni-literacy programs to develop skill related to e-learning information search.
- Attainment of core e-collections specially those that are recommended by electronic-learning initiative.
- Promotion of the library electronic-services to the virtual electronic-learning community.
- Prompt delivery of document and services that are out reach through electronic transmission.

E-learning Institution Functional Roles:

- Expansion of innovative web-based electronic-courses with the use of simulation and multimedia effects.
- An integration of various recommended core electronic-learning reference readings through e-library digital resources.
- Digitization of textbooks and various other learning resources for the creation of usable objects of learning.
- Permanent updating of electronic-course contents that are possible.

On the other hand, the major limitations of this model are the gap in computer and web knowledge and lacking of librarians readiness to be involved in ELLS that might affect the full utilization of both CMS capabilities and electronic-library facilities.

Electronic-learning-oriented library service has boomed a lot nowadays as a basic topic of most of the studies in digital library domain. The research study of [57].

Cornell University Library has clearly revealed the strategic importance of the involvement of library in the course website created by instructor.

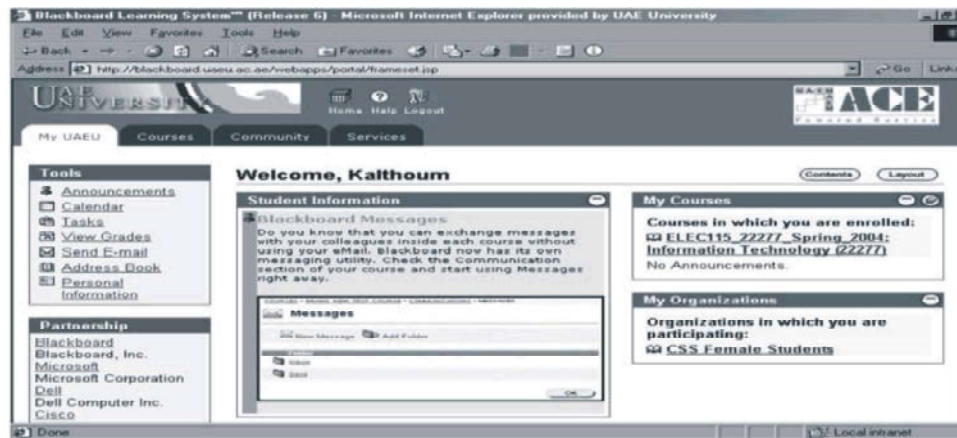
Literature has identified expectations of instructors and requirements in order to develop electronic-learning oriented collections for the use of virtual classroom [58]. Other study has identified the core procedures to build a support an effective virtual electronic-learning environment through integration of digital library resources [59]. A case study is proposed about electronic-learning library services at Victoria University Australia as model of integrating both the library digital

resources and running electronic-learning programmers by developing a client portal for accessing learning objects [60].

Analysis: For integrating the digital library into electronic-learning environment it is required to have substantial knowledge building on the part of organization involved. Many researchers came up with the suggestions that digital library must classify the resources into some logical categories and should include all those resources that are appropriate and to build up a knowledge vocabulary includes a thesaurus and develop index and search mechanism. The digital library best contribution is in the increase value and enhancement of learning process which are the outcomes of combination of learning support and services with digitally delivered content [61]. (Waller and Wilson,2001).

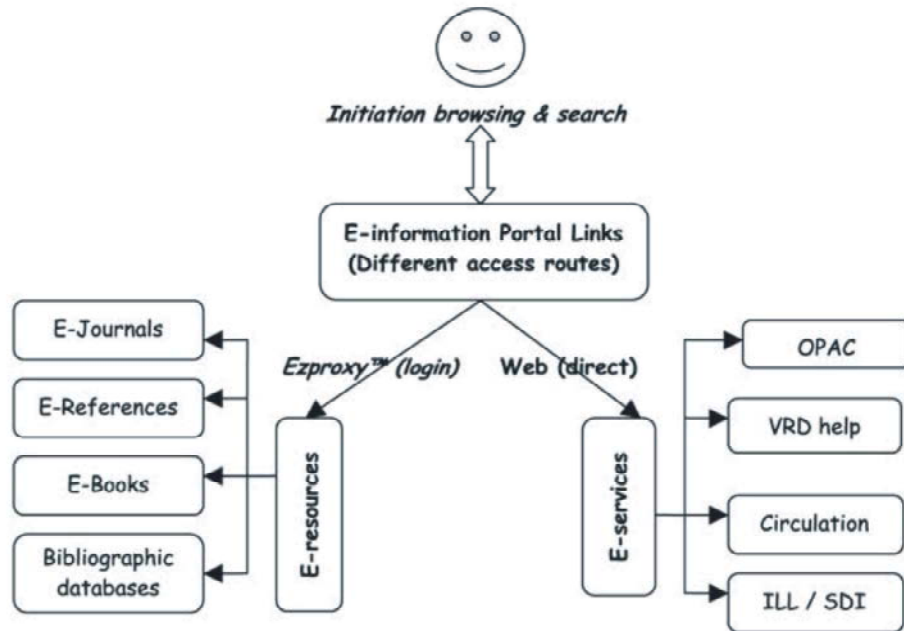
Evidence-based CMS Acceptance Modal: The “Laptop Project” is initiative in electronic learning at the UAEU. It has furnished a new Virtual learning landscape by allowing instructors to connect the IT knowledge for defining learning and teaching with new perspectives. As a new instructional tool, the Acceptance by and impact of the Blackboard-based learning on the student academic Performance has received unusual concern. A questionnaire survey integrated in a technical report and three scholarly research studies have been conducted concerning this theme.A questionnaire survey is conducted as LAPTOP project on its web-based learning programmes by the end of the winter semester of the academic year 2002/2003. The survey was primarily aimed at evaluating learning quality, technical reliability, students’ satisfaction and ease of use (The Project, 2004). The questionnaire was emailed to 5,740 students who has at least one Blackboard course; 25 percent students (1,435) responded with completed and usable questionnaires. The survey analysis revealed that improvement and satisfaction of teaching and learning process were found to be 70.5 per cent and 78.4 per cent, respectively.

Methodologies of E-learning System Development Data Inc’s: Data Inc’s is an electronic-Learning roadmap that employs a phased approach to content enlargement. It has been modified for the teaching deployment and development of various e-Learning modules, including campus gateways and dashboards, as well as learning



Internet tools e-communication utilities e-courses & assignments

E-learner-in-Context



Source: Taha (2004a)

Fig. 5: Networked e-information services in ubiquitous computing

management systems. some methods from a basic project management and e-Learning are combined by this so the organization that uses this methodology can collect the requirements and can convert them to tasks, assign the resources and execute and develop the program.

Analysis: As most e-Learning methodologies, DATA Inc's tries to build an e-Learning system by translating the traditional formation into the Internet, but it is not making any real use of the Internet advantages, like common resources, chat room and flexible definition of

user roles. DATA Inc's now the formation course is presented by DATA Inc as a Microsoft's Power Point, due to which it is a poor revolution at the e-Learning methodology world. Its functions are not fully integrated that is one of its poor points, offering a total solution that can be utilized by multiple types of users. Its one of the most important point is that this methodology lacks is the separation between the electronic-Learning content and its presentation. It is observed that this methodology does not base upon any e-Learning standard and therefore not giving more credibility to the methodology.

ADDIE Model: ADDIE model is a procedure of educational design iterative, it means: Design, Analysis Development, Implementation and Evaluation. During the analysis, the designer develops a clear understanding of the “differences” between the wished results or the behaviors, during the analysis and the existing knowledge of the auditorium and his skills. The phase documents of design specify the targets of learning, instruments of evaluation, exercises and contents. The current formation of materials of education is completed in the stage of development. These materials are delivered or distributed to the group of students during the implementation., the efficacy of the materials of formation is evaluated, after the delivery.

Analysis: As being too systematic the ADDIE model has been criticized by some, that is, too inflexible, too linear, too constraining, too time-consuming to implement and too constraining. As a substitute to the systematic approach, there are a variety of systemic design models that highlight a more holistic, iterative approach to the development of training. Rather than developing the instruction in phases, the entire development team works together to rapidly build modules from the start, which can be tested with the student spectators and then revised based on their feedback. When it comes to the creation of technology-based training, the systemic approach to growth has many advantages. To create engaging metaphors or themes, artists and writers work jointly in a process that validates the creative approach with students early in the development cycle. Programmers and designers gather agreement as to which learning activities are both successful as well as possible, given the constraints of the client's computers or network. There are practical challenges with a purely systemic design approach in the management of resources, regardless of these advantages. In the majority cases, training programs must be developed under a fixed -- and limited schedule and budget. While it is very easy to allot people and time to every step in the ISD model, it is harder to plan deliverables when there are no different steps in the process. The holistic approach asks the questions, "How many iterations and time, will it take to finish the program?" "Do the contributions made by artists and programmers in the design phase, who have no formal background in instruction, necessitate the extra time required and additional compensation for this time?" Each phase in the ADDIE model includes a

Interaction/Feedback and Quality Control loop that sets upon intuitive dovetailing into the next phase. The systematic approach have significant advantages in the creation of electronic-Learning, making agreement on results at the end of each phase a must before happening. Early in the development process the creative approach is validated, ensuring courseware output is optimized and the audience is appropriately engaged.

Edu-Interpretation: Edu-Interpretation has seven-step learning solution development methodology enabling to deal with online or hybrid training prospect in a practical way based on the objective: transfer of knowledge which can be applied by the student in his professional life. They work in association is commercial one with the tutors and its approach.

Analysis: If professional developers of an e-learning group can be hired, this methodology work correctly to develop the changes and new sections in the training process that present to learners, that suppose a high cost which surplus this methodology to be widely used. Edu-interpretation, every project is developed for just one type of e-Learning project that must be characterized before. It cannot be adopted for numerous projects at once, which makes working with it be a difficult issue. We can see also that the methodology does not make a distinction between the e-Learning content and the way it must be presented. It just tries to build the project in a good looking and easy way in which learner and tutor can use it easily. Even though this methodology treats more training points than the other ones mentioned, this methodology does not base upon any e-Learning standard.

Proposal for E-Learning Project Development, University of Caraboba: To implement e-Learning projects, this methodology was designed ; it is based on the investigation-action strategy that divides the development process into phases, this methodology takes into account the feasibility study (technological, infrastructure, economic), project elements (human resources, learning types), design, evaluation and content development until it rollout.

Analysis: It does not support a high number of users at the same time here in this methodology; the user interface

is not clear and is not easy to work with it. The resources offered to the users are not saved with safety that they could not be changed by users or visitors. Course management and user administration is assigned to administrator users that are not related to the instructor users, which make project users depend on these persons to apply changes to the materials.

Methodology to Develop E-learning Systems: The idea of this methodology is developing an electronic-Learning system that favors the competitive place of the organization that uses it and be adaptable to suit the student/employees needs. It refers to the form and manner in which they produce the content that will be used in training and how to determine the technological platforms to use the organization.

Analysis: This methodology constructs e-learning systems that their content must be defined before because it needs to define the structure of the learning model. Content management is not based on any e-Learning standard that define how these contents and formation must be presented to users to be studied. This methodology now work with a verified type formats of learning contents and the user interface is not alienated from this content, where to make an e-Learning system with this style all, contents and presentation are connected together. It gives a high cost to administrations and university to work with it and users have to be specialized to work with these systems.

IADIS E-Learning: This method of creating e-Learning systems is knowable through the gained experience in the development of the multimedia content applications and its use in the clarification of the analysis model and design processes. The engineering teaching content project is approved through a methodology, which divides the production process in different stages and gives different tasks to every member of professional development team. To all of these dissimilar phases it is integrated the investigation on the appropriateness of e-Learning contents. All the different stages include research on appropriateness of the content for electronic-learning, a preceding analysis to select multimedia techniques to apply and lastly, the development of the contents depends on the project design.

Analysis: This methodology is based on multimedia, due to which it is useful for media classes where students are not in interaction with the presented information to the student. The formation of large-scale electronic-Learning content needs software developed in order to apply proved techniques of exposition and software development at a elevated cost; it also needs a multidisciplinary team (group of professionals). Whenever this project is developed it needs a high quality developer team: Teachers, whose task is organization of the subject program, scriptwriting and the proposal combined agreement with the project manager on the multimedia didactic units; Project manager, who advises teachers, coordinates efforts of the development team and assigns tasks related to the planning done; Designers, for tasks of graphic design, user interfaces and creation of 2D and 3D elements; Analysts / programmers to develop software application analysis and programs (HTML, FLASH, Actionscript, PHP, JAVA); Multimedia technicians, accountable for recording editing and post production; diverse tasks of each professional profile combine together in order to generate a production line to make the most of results but due to this project becomes complicated and working with it wants always with every subject with every class or theme professional engineers.

Finicia: The methodology created in this project depends on seeking a appropriate combination between traditional learning and distance, to go with individual needs, resources and labor. It is understood that this methodology depends upon the collaborative learning. It is developed in stages, which starts with the analysis of user needs and it determines the methodological approach and communication platform, design and programming of course material, training of teachers and lastly, estimation and amendment of the methodology and materials.

Analysis: This methodology does not treat properly from the first step the idea of the partition between the learning content and its presentation. It presents the traditional subjects (content, practices, classes and works) in normal presentation without studying the student condition and his needs to recognize the lessons alone using the internet technology and the professional material the teacher organize for him.

Methodology and Tools for the Generalization of E-learning in the Continuous Formation: The idea of this methodology is to generate and build up an

electronic-Learning system where persons who are not highly qualified in e-Learning training processes are able to interact with it. This methodology is reflected in the design of a communal training plan adapted to each group of learners with modified treatment.

Analysis: This methodology like the mentioned before do not talk about any electronic-Learning standard on what it uses to present the learning content. the design is so friendly for the user and it is very easy to use, but the user interface and the CMS and LMS are connected in strong way and it is hard to separate them, which force after any change in its aspect or content to reconstruct the whole project. This method work with a determine type of set-up of documents and media, which bound its work to determine type of CMS, LMS and e-Learning projects.

ENN-INS E-Learning-Methodology: The thought of this methodology is to present effective and pedagogically the e-Learning contents. The ENN-ICS course consists of a variety of courses (lessons), where learning substance becomes learning objects; these learning objects are thematic and précis of the additional technical information.

Analysis: There is hurdle in this methodology between pedagogues and information technicians where we must know that these both groups developed their Learning-Arrangements in a disciplinary way. Teacher is the active person in this methodology. The learners are inactives. The interaction between teacher and learner is not observed.

MDA-based Development of E-learning System: The thought of this work, is that as the majority companies and research departments are devoted to, develop their electronic-Learning based on LTSA [9] and SCORM standards [61], specifying the format, syntax and semantics data to be transferred between varied platforms. This methodology create electronic-Learning systems by using J2EE [62] and leaning technology MDA Analysis They use a comparable focus in this methodology as we want to apply to present our idea, but they present it in an wrong way which makes it lose its proficient focus. Here we locate that the learning materials will present to the learners in small and dependant "bricks". The bricks are similar to small black boxes, which are without a logical context. The bricks exist in a

linear way. The learner must learn all bricks in a specified way to reach the learning goals. Then he has no option to choose an own way. In this learning methodology planning has a strong theoretical focusing. There is no reference of practical examples. So learner cannot transfer his knowledge. When there is no transfer of knowledge, it's very hard to employ the knowledge in new (and real) situations. One of the chief problems in this methodology is the technical centering. Means, the learning materials are filled with video, animations etc. But the course-designer forgets to include the essential didactics. So it's not easy to find a good balance for using multimedia components within learning materials.

CONCLUSION

There are lots of e-learning methodologies by observing them we can find the impact and processes of e-learning activities in all levels and fields of education. Student participation is very much essential in order to make e-learning strategies more effective.

We can examine that these strategies have related stages in their process of methodology development that because all of the projects development should have a work sequence to present and finish it to practice and to apply. But the major barrier is that most of these cooperatives do not have great sense formation technology use, at the side of a poor qualification level in information management in basic characteristics and lack in learning tools, particularly in the auto-formation. Contributing to all this the low knowledge in communication and information technologies are using in the formation of learning process in different collaborative virtual environments, electronic -Learning. All of the used methodologies and strategies platforms that are mentioned before have appeared and not any of them prevail over the others. Each and every platform can offer the same set of services in its own manner, with its own set of benefits and disadvantages.

F2f learning, project based learning and e-learning are some of the methodologies of learning but e-learning or online learning appear to have a positive influence on the attainment and retention of students. Several approaches are being used for this instance like blended e-learning approach that is a suitable combination of traditional learning and e-learning. Mobile learning is another innovative approach in this area and the concept of digital library contributes a lot in the enhancement and increase value of learning process. Data inc's, ADDIE model.

Edu-interpretation IADIS e-learning and some other methodologies that are widely used in today's learning environment and are been analyzed step wise in this study.

REFERENCES

1. Al Ghazzawi, D., 2012. "NEW E-LEARNING SYSTEM METHODOLOGY A Comparison of eLearning XML with current e-Learning System Development Methodologies", International Conference on Information Human Computer Interaction & Learning.
2. Shanley, E.L., C.A. Thompson, L.A. Leuchner and Y. Zhao, 2009. "Distance education is as effective as traditional education when teaching food safety", *Food Service Technology*, 4: 1-8.
3. Shohreh, A.K. and G. Keesling, 2000. "Development of a web-based internet marketing course", *Journal of Marketing Education*, 22(2): 84-9.
4. Hay, A., J. Peltier and W. Drago, 2010. "Reflective learning and on-line education: a comparison of traditional and on-line MBA students", *Strategic Change*, 13(4): 169-82.
5. Swan, K., 2009. "Learning effectiveness: what the research tells us", in Bourne, J. and Moore, J.C. (Eds), *Elements of Quality Online Education: Practice and Direction*, Sloan-C, Needham, MA, pp: 13-45.
6. Hansen, D.E., 2008. "Knowledge transfer in online learning environments", *Journal of Marketing Education*, 30(2): 93-105.
7. Arbaugh, J.B., 2005. "Is there an optimal design for on-line MBA courses?", *Academy of Management Learning & Education*, 4(2): 135-49.
8. Solheim, I., Y. Barnard, M. Storrosten and E. Sorhaug. 2009. "E-Learning in enterprises: identifying and realising benefits and improved business processes." In IV International Conference on Multimedia and Information & Communication Technologies in Education. Badajoz, Spain.
9. E-learning en las Universidades Españolas, 2009 G.T. T.I.C. de la C.R.U.E.-Sevilla.
10. WebCT, 2009. <http://WebCT.com>
11. Moodle, 2009. <http://moodle.org>
12. Barnett, R., 2009. *The Limits of Competence: Knowledge, Higher Education and Society*, Open University Press, Maidenhead. Salomon, G., Perkins, D.N. and Globerson, T. (1991), "Partners in cognition: extending human intelligence with intelligent technologies", *Educational Researcher*, pp: 20.
13. Stephenson, J. and M. Yorke, 1998. *Capability and Quality in Higher Education*, Kogan Page, London.
14. Batatia, H., Ayache, A. and Markkanen, H. (2002), "Netpro: an innovative approach to network project based learning", *Proceedings of the International Conference on Computers in Education (ICCE'02)*.
15. Martins, L.L. and F.W. Kellermanns, 2009. "A model of business school students' acceptance of a web-based course management system", *Academy of Management Learning & Education*, 3(1): 7-26.
16. Selwyn, N., 2007. "The use of computer technology in university teaching and learning: a critical perspective", *Journal of Computer Assisted Learning*, 23(2): 83-94.
17. Voogt, J., M. Almekinders, J. van den Akker and B. Moonen, 2010. "A 'blended' in-service arrangement for classroom technology integration: impacts on teachers and students", *Computers in Human Behavior*, 21(3): 523-39.
18. Wan, Z., Y. Fang and D. Neufeld, 2009. "The role of information technology in technologically mediated learning: a review of the past for the future", *Journal of Information Systems Education*, 18(2): 183-92.
19. Chang, K.E., Y.T. Sung, Y.L. Chen and L.H. Haung, 2008. "Learning multiplication through computer-assisted learning activities", *Computers in Human Behavior*, 24(6): 2904-16.
20. Ozdemir, Z.D., K. Altinkemer and J.M. Barron, 2008. "Adoption of technology-mediated learning in the US", *Decision Support Systems*, 45(2): 324-37.
21. Wu, J.H., R.D. Tennyson and T.L. Hsia, 2010. "A study of student satisfaction in a blended e-learning system environment", *Computers & Education*, 55(1): 155-64.
22. Ong, C.S., J.Y. Lai and Y.S. Wang, 2004., "Factors affecting engineers' acceptance of asynchronous e-learning systems in high-tech companies", *Information & Management*, 41(6): 795-804.
23. Ong, C.S. and J.Y. Lai, 2006. "Gender differences in perceptions and relationships among dominants of e-learning acceptance", *Computers in Human Behavior*, 22(5): 816-29.
24. Roca, J.C., C.M. Chiu and F.J. Martí'nez, 2006. "Understanding e-learning continuance intention: an extension of the technology acceptance model", *International Journal of Human-Computer Studies*, 64(8): 683-96.
25. Chen, I.Y., 2007. "The factors influencing members' continuance intentions in professional virtual communities-a longitudinal study", *Journal of Information Science*, 33(4): 451-67.

25. Cheng, B., M. Wang, S.J.H. Yang, Kinshuk and J. Peng, 2011. "Acceptance of competency-based workplace e-learning systems: effects of individual and peer learning support", *Computers & Education*, 57(1): 1317-33.
26. Huang, E.Y., S.W. Lin and T.K. Huang, 2011. "What type of learning style leads to online participation in the mixed-mode e-learning environment? a study of software usage instruction", *Computers & Education*, 58(1): 338-49.
27. den Brok, P.J., J. Levy, R. Rodriguez and T. Webbels, 2011. "Perceptions of Asian-American and Hispanic-American teachers and their students on teacher interpersonal communication style", *Teaching and Teacher Education*, 18(4): 447-67.
28. Paulhus, D.L., J.H. Duncan and M.S.M. Yik, 2002. "Patterns of shyness in east-asian and european-heritage students", *Journal of Research in Personality*, 36(50): 442-62.
29. Hwang, A., S. Ang and A.M. Francesco, 2002. "The silent chinese: the influence of face and kiasuism on student feedback-seeking behaviors", *Journal of Management Education*, 26(1): 70-98.
30. Kahn, W.A., 1990. "Psychological conditions of personal engagement and disengagement at work", *Academy of Management Journal*, 33(4): 692-724.
32. Edmondson, A., 2008. "Psychological safety and learning behavior in work teams", *Administrative Science Quarterly*, 44(2): 350-83.
31. Gibson, C.B. and J.L. Gibbs, 2010. "Unpacking the concept of virtuality: the effects of geographic dispersion, electronic dependence, dynamic structure and national diversity on team innovation", *Administrative Science Quarterly*, 51(3): 451-95.
33. Tucker, A.L., I.M. Nemhard and A.C. Edmondson, 2010. "Implementing new practices: an empirical study of organizational learning in hospital intensive care units", *Management Science*, 53(6): 894-907.
34. Udo Bleimann, 2011. "Atlantis University: a new pedagogical approach beyond e-learning", *Campus-Wide Information Systems*, 21(5): 191-195.
35. Alex Bennet and David Bennet, 2008. "e-Learning as energetic learning", *VINE*, 38(2): 206-220.
36. Netday and Blackboard, 2006. "Learning in the 21st century: a national report of online learning", available at: www.blackboard.com/inpractice/K12/onlinelearningreport (accessed February 2008).
37. Bonk, C.J. and C.R. Graham, 2009. *The Handbook of Blended Learning: Global Perspectives, Local Designs*, Pfeiffer, San Francisco, CA.
38. Davis, H.C. and K. Fill, 2007. "Embedding blended learning in a university's teaching culture: experiences and reflections", *British Journal of Educational Technology*, 38(5): 817-28.
39. Alavi, M., Y. Yoo and D.R. Vogel, 1997. "Using information technology to add value to management education", *Academy of Management Journal*, 40(6): 1310-33. 370
40. Yoo, Y., P. Kanawattanachai and A. Citurs, 2002. "Forging into the wired wilderness: a case study of a technology-mediated distributed discussion-based class", *Journal of Management Education*, 26(2): 139-63.
41. Bruffee, K.A., 1999. *Collaborative Learning: Higher Education, Interdependence and the Authority of Knowledge*, Johns Hopkins University Press, Baltimore, MD.
42. Boud, D. and N. Solomon, (Eds) 2001. *Work-based Learning: A New Higher Education?*, Open University Press, Maidenhead.
43. Wild, Rosemary H. and Kenneth A. Griggs, 2010. "A framework for e-learning as a tool for knowledge management." *Industrial Management & Data Systems*, 102(7): 371-380.
44. Caralli, Richard, A., 2004. "The Critical Success Factor Method: Establishing a Foundation for Enterprise Security Management." In *Technical Report CMU/SEI-2004-TR-010 ESC-TR-2004-010*.
45. Fresen, Jill, W. and Lesley G. Boyd, 2005. "Caught in the web of quality." *International Journal of Educational Development*, 25(3): 317-331.
46. Seagrave, S., D. Holt and J. Farmer, 2010. "The Power of the 6three model for Enhancing Academic Teacher's Capabilities for Effective Online Teaching and Learning: Benefits, Initiatives and Future Directions." *Australasian Journal of Educational Technology*, 21(1): 118-135.
47. O' Neill, K., G. Singh and J. O' Donoghue, 2011. "Implementing eLearning Programmes for Higher Education: A Review of the Literature." *Journal of Information Technology Education*, 3: 314-320.
48. Peach, Brian E., Arup Mukherjee and Martin Hornyak. 2007. "Assessing Critical Thinking: A College's Journey and Lessons Learned." *Journal of Education for Business*, 82(6): 313-320.
49. Condie, Rae and Kay Livingston, 2007. "Blending online learning with traditional approaches: changing practices." *British Journal of Educational Technology*, 38: 337-348.

50. Muhammad Imran Qureshi, Khalid Khan, Mansoor Nazir Bhatti, Aamir Khan and Khalid Zaman, 2012. Quality Function Deployment in Higher Education Institutes of Pakistan Middle-East Journal of Scientific Research, 12(8): 1111-1118.
51. Muhammad Imran Qureshi, Mehwish Iftikhar, Syed Gohar Abbas, Umar Hassan, Khalid Khan and Khalid Zaman, 2013. Relationship Between Job Stress, Workload, Environment and Employees Turnover Intentions: What We Know, What Should We Know. World Applied Sciences Journal, 23(6): 764-770.
52. Lathrop, A., 2008. "online information retrieval as a research tool in secondary school libraries", in Lathrop. A. (Ed), Online and CD-Rom Database in school, Readys, libraries unlimited. Eaglewood, Co, pp: 287-339.
53. Marchionini, G. and H. Maurer, 2005. "The role of digital libraries in teaching and learning", communication of the ACM, 38(4): 67-75.
54. Neuman, D., 1997. "learning and the digital library", Library trend. vol. 45 No. 4, PP. 68-709 Waller, v. and Wilson, j. (2001), "A definition for e-learning", ODLQC. Newsletter, October, pp: 1-2.
55. Taha, A., 2004a. "'Digitally yours': UAEU Libraries-a proposed strategic plan to meet the challenges of digital dilemma-visions and aspirations", Proceedings of the 1st International Conference on Digital Libraries (ICDL 2004), New Delhi, 24-27 February, Vol. 1, TERI, New Delhi, pp: 208-15.
56. Association of College and Research Libraries (ACRL) (2010), "Guidance for distance learning library services", available at: www.ala.org/ala/acrl/acrlstandards/guidelinesdistancelearning.htm.
57. Rieger, O.Y., A.K. Horne and I. Revels, 2010. "Linking course web sites to library collection and services", Journal of Academic Librarianship, 30(3): 205-51.
58. Sumner, T., M. Khoo, M. Recker and M. Marlino, 2011. "Understanding educator perceptions of 'quality' in digital libraries", ACM/IEEE Joint Conference on Digital Libraries (JCDL'03), Houston, USA, 27-31 May, ACM Press, New York, NY, pp: 269-79.
59. Wang, M.Y., 2003. "The strategic role of digital libraries: issues in e-learning environments", Library Review, 52(3): 111-16.
60. Parker, D., L. Maquignaz and J. Miller, 2011. "Library services to support e-learning: user surveys at the Victoria University of Technology", available at: http://eprints.vu.edu.au/archive/00000196/01/IATUL_2001_Presentation_Paper.pdf
61. Fox, J., 2012. The R Commander: A basic-Statistics Graphical User Interface to R, Journal of Statistical software. September.
62. Fardoun, H., F. Montero and V. López-Jaquero, 2008. eLearnXML: Hacia el desarrollo de sistemas e-Learning basado en modelos, IX Congreso Internacional de Interacción Persona-Ordenador, Albacete, June 9-11, Spain, pp: 351-360.
63. Livingston, Kay and Rae Condie, 2012. "The Impact of an Online Learning Program on Teaching and Learning Strategies." Theory Into Practice, 45(2): 150-158.
64. M'hammed Abdous, 2009. "E-learning quality assurance: a process-oriented lifecycle model", Quality Assurance in Education, 17(3): 281-295.
- Donnell, E.O. (2008), "Can E-Learning Be Used to Further Improve the Learning Experience To Better Prepare Students For Work In Industry", Dublin Institute of Technology, Eileen.Odonnell@dit.ie
65. Taha, A., 2011. "Networked e-information services to support the e-learning process at UAE University", Jimi Business and Engineering Library, UAE University, Al-Ain, United Arab Emirates, 25(3), 2007, pp: 349-362.
66. Sambrook, S., 2010. "E-learning in small organizations", Education + Training, Volume 45 • Number 8/9 • 2003 • pp: 506-516.
67. Eke, H.N., 2010. "The perspective of e-learning and libraries in Africa: challenges and opportunities", Library Review, 59(4): 274-290.
68. ADDIE MODEL, ISU College of Education. <http://ed.isu.edu/addie/index.html>[5] DATA INC's, Nikanorov, 2006. <http://www.learningcircuits.org/2006/August/nikanorov.htm>.
69. Edu-Interpretation, Quality-Assurance, 2009. <http://www.eduperformance.com/english/Methodology-Quality-Assurance.html>
70. Riena Loaiz, 2010. Proposal for e-Learning projects development University of Carabobo. <http://ares.unimet.edu.ve/encuentroted/trabajos/trabajosPDF/MaEugeniaArevalo.pdf>.

71. Ibermetica, 2009. Methodology to develop e-Learning system www.ibermatica.com/ibermatica/formacionelearning/elearning/ArticuloMetodologia.pdf download Carmela, 2007. FINICIA, <http://www.florida-uni.es/>
72. European Neurologic Network, 2012. ENN-INS e-Learning-Methodology, http://www.ennics.org/lenya/ennics/images/pdf/ENNICS_E-Learning-Methodology_v1.0.pdf
73. Hong Wany. MDA-based Development of E-Learning System, <http://csdl.computer.org/dl/proceedings/compsac/2003/2020/00/20200684.pdf>
74. Ulf Daniel Ehlers, 2009. "Web 2.0-e-learning 2.0-quality 2.0? Quality for new learning cultures", *Quality Assurance in Education*, 17(3): 296-314.
75. MASON, R., 2009. "MODELS AND METHODOLOGIES IN DISTANCE EDUCATION", Institute of Educational Technology, Open University, UK. (R.d.mason@open.ac.uk)
76. Andrew Ettinger, Viki Holton and Eddie Blass, 2006. "E-learner experiences: key questions to ask when considering implementing e-learning", *Industrial and Commercial Training*, 38(3): 143-147.
77. Jianhua Zhao, David McConnell and Yinjian Jiang, 2009. "Teachers' conceptions of e-learning in Chinese higher education: A phenomenographic analysis", *Campus-Wide Information Systems*, 26(2): 90-97.
78. Attwell, G., 2010. "E-learning and sustainability", available at: www.ossite.org/Members/GrahamAttwell/sustainability/attach/sustainability4.doc (accessed 1 September 2011).
79. eLearning Africa, 2011. "Elearning and schools", available at: www.elearning-africa.com/newsportal/english/news257.php (accessed 25 January 2011).
80. Kefela, G., 2011. "Mobile phones revitalize economic growth in Africa", *Accountancy Business and the Public Interest*, 9: 6-14.
81. Bacelar-Nicolau, P., S. Caeiro, A.P. Martinho, U.M. Azeiteiro and F. Amador, 2009. "E-learning for the environment: The Universidade Aberta (Portuguese Open Distance University) experience in the environmental sciences post-graduate courses", *International Journal of Sustainability in Higher Education*, 10(4): 354-367.