



ISSN: 2319-5967

ISO 9001:2008 Certified

International Journal of Engineering Science and Innovative Technology (IJESIT)

Volume 3, Issue 2, March 2014

# The role of E-learning in facing the challenges of the century

Dr. Mozamel M. Saeed<sup>1</sup>, Prof. Dr. Al Samani A. Ahmed<sup>2</sup>

<sup>1</sup>Salman Bin Abdul-Aziz University, collage of science, Dept. of computer science, Al-Aflaj  
P.O.Box:710 zip code: 11912

<sup>2</sup> Al Neelain University collage of computer science & information technology, Dept. of computer science, Sudan

*Abstract: The aims of this paper is to clarify the concepts and basic advantages of E-learning and try to find the best definition of E-learning to applied in Sudan. Therefore, the vision of the use of information and communications technology in making the teaching and learning process electronic able to face the challenges of the century and the issues of the future. In order to ensure the continuity of survival, the paper shows the new roles of the student, curriculum and teacher. It has found the need to build a plan for E-learning depending on the framework of the Sudanese consistent with the evidence consists of five components, namely management, information and communications technology, education, ethics, education and assessment.*

**Keywords:** E -learning, E-learning plan, components of E -Learning

## I. INTRODUCTION

A significant expansion in the education sector has been noticed over the past few years as a result of the increasing number of those who want to learn. Unfortunately, there is lack of sufficient services to meet that expansion, especially in term of human resources and other facilities. The process of learning to achieve this development and progress must be built on the foundations and rules of scientific able to develop and manage educational system focuses on excellence and perfection, and invests enjoyed high of mastering the learning competences essential and relevant trends in requirements of the times and competition strongly and the effectiveness and contribute to development of the national economy based on knowledge. As the requirements which are imposed we present the need. Need continuing education. Teaching flexes communication and the openness to the others.

## II. CHALLENGES FACING EDUCATION

### *First domestic challenges:*

- Increasing numbers of people and students.
- Lack of qualified teachers well educated.
- All educational institutes have taken their full capacity.
- Lack of computer use in the classroom.

### *Second external challenges:*

- The tremendous explosion of knowledge and the consequent complexity in education.
- Increasing integration and inter dependence in the global economy.
- The joining with the world trade organization.
- Continuing technological revolution in the field of information and communications.
- Fraud and identity theft (the credibility of the e-learning).

## III. THE DEFINITION OF E-LEARNING

The pattern of education depends on the employment of information and communications technology for providing electronic curricula within the frame work of systemic prompt in order to provide high level of education with high efficiency. Free from stereo and tradition types in education. The names included are:

- Learning using network (WBL)
- Mobile learning (M. Learning).



ISSN: 2319-5967

ISO 9001:2008 Certified

International Journal of Engineering Science and Innovative Technology (IJESIT)

Volume 3, Issue 2, March 2014

- Learning any time and any place (A-Learning).

According to Talab [4]” The E-learning is a creative system that transport and deliver various types of knowledge and science to be a distributed, open and flexible. Depending on the integration of the components of management, information and communication education calendar and ethics education. The possibility of active interaction is allowed with the active learner, course study, and the teacher. Simultaneous or non-simultaneous”.

It was defined by Badr Khan [6] “It is an interactive method best for introducing an environment well designed and easy for every individual, in any place, at any time. For using characteristics and sources of internet and technological digital in the correspondence, along with the principles of the suitable education core to meet the needs of the open, flexible, and distributed learning environment”. There are some concepts related to e-learning, such as:

1. Technology education according to UNESCO, it curved systems for the design and implementation of educational process and evaluated according to the specific goals of the results of research in the field of education and human contact using human resources and non effective.
2. Distance education: it is one of the modern methods of education and relatively depends on the location differs from the source which may be a book or a teacher or even a group of students.
3. Opened education: it is very important to know that opened education system is one of the remote educational types which puts specialized interest to the educational quality. It is differ from correspondent education that suggested learning system is used in a limited percentage (20-25%), direct educational operations (face to face) which aimed to provide a suitable environment for the active and effective learning and the direct interaction between the learners.
4. Compact Education: it is one of educational formulas or the learning that electronic learning consolidated with traditional classroom learning in one stage. It employs e- learning tools that depends on the computer or on the network for the lessons, such as computer lab, smart classroom and the teacher usually meets the student face to face.

#### IV. AIMS OF ELECTRONIC EDUCATION

Electronic education has several aims:

- To change traditional concept of the education to keep up with the scientific progress and cognitive revolution.
- Increase the effectiveness of the teacher and the learner and taking into account individual differences between the learners.
- Overcome problems of the mass numbers in the classrooms.
- To make up the shortage in qualified scientific personnel.
- To widen the educational operation field, taking into account individual differences between learners.
- To get benefit from knowledge sites that available on the nets of the internet.
- To sustain self educational skills and encourage the self-continuous education.

#### V. ADVANTAGES OF ELECTRONIC EDUCATION

##### 1. EFFECTIVENESS

Memorizing information rely on our all sensory abilities while response depend on individual abilities and his motivated learning. So, the means of transmission must provide to the learner the possibility of repetition due to different sensory methods and these possibilities can not be provided by traditional educational methods. This gives learners on opportunity to immediate effectiveness electronically between them and the teacher through the means of electronic e-mail and chat rooms.

##### 2. LESS COST

Providing immediate electronic learning service through the internet, compact storage discs and DVDS to the learner to travel to remote educational centre that means he saves time and provides travel cost.

##### 3. THE EASE TO ACCESS TO THE CURRICULUM

Electronic educational curriculum is available at any time which make the learner follows them at any suitable time through the internet.



ISSN: 2319-5967

ISO 9001:2008 Certified

International Journal of Engineering Science and Innovative Technology (IJESIT)

Volume 3, Issue 2, March 2014

#### 4. *ENHANCING PARTICIPATION*

Learning theories that enhance the participation confirm that human interaction form an active concept in the learning cooperation. So, simultaneous electronic education provides such as participation through assuming educational classroom, chat room, electronic message and meeting via video.

#### 5. *INTEGRATION:*

E- Education saves knowledge and educational resources which provide them in integrated way through assessment tools that allow analyzing learner's knowledge and processing that achievement.

#### 6. *FLEXIBILITY*

Learner can be able to work with large group of teachers round the world through the internet at anytime that suit his schedule. So, learner can leave at home, in his work or anywhere that he can be able to use internet. Using accurate different and various methods in evaluating learners performances.

#### 7. *TAKING INTO ACCOUNT THE STATE OF THE LEARNER:*

E-education provides to the learner the possibility of choosing appropriate speed in his learning. So, he can accelerate educational operation or slow it according to the need. It also permits him to choose the content and the tools that match the interests, needs and the level of his skills.

Especially, it includes several educational methods which depend on various ways to transmit knowledge to different learners which makes it more effective to some of them. Those methods help the student to receive scientific article by the method that suit his abilities through the video audio and reading method, taking in account the individual differences between the learners and help them to complete learning operations in their suitable environment.

### VI. **CHANGE ROLES IN THE NEW ERA OF KNOWLEDGE**

The revolution of information technology and tele-communication impose that we must move quickly and effectively to join this revolution. For this reason we have to change the objective of the education from education for all to distinguished education and excellence for all and adding the following new aims:

- Using information technology and communication in schools and homes to all students and teachers.
- Using information technology and communication by all teachers to help students gain high academic standards.

Scientific research and correction look forward to improve the coming generation in the application of acquiring skills- in order to realize those aims, it requires the changing of traditional education pillar teacher, learner and school and charge it to more modern educational operations.

#### *a. Teacher:*

The progress thought and teacher skills, so, we promote the method of explanation through providing him by training programs in technology and education and modern explanation methods. All these support the spread of information technology and its role in progressing education.

Teacher's characteristics and specifications:

- Unique and untraditional teacher.
- The teacher's disagreement with the others is considered as the source of information.
- Purgative and facilitator.
- He practiced critical thinking of the learning.
- He is capable of Comprehensive and continuous self-learning.

#### *New role of the teacher:*

- Critical and sustainable friend.
- The best, creative and innovative leader.
- Interlocutor and a good speaker.
- Advisor and Observer and director.

#### *b. The learner:*

The traditional role of the student has to change from receiving information has limited participation. His role is how to keep or save the information in the curriculum and the books and keep it in the memory and call it while the examination.

#### *The positive role of the learners:*

- Creative and active participant who participate in the discussion.
- Display his thought courageously and freely.



ISSN: 2319-5967

ISO 9001:2008 Certified

International Journal of Engineering Science and Innovative Technology (IJESIT)

Volume 3, Issue 2, March 2014

- Criticize the existing ideas and show replaced ideas.
- He is capable to use modern technology of the era.
- He is capable to take self- decision.
- He gains creative thinking skills and used it.
- He contributes in the knowledge production and develops it.

**c. Educational establishment:**

It is very important to our nation to start a new change from declining to progress the concept of the educational tree instead of educational ladder because the educational tree concept included the following:

- An active entity is usually moves and grows.
- A single trunk is education in the foundation stage and then the branches and wings a learner can climb by his desire and ability.

**VII. TYPES OF E-LEARNING**

**1. Synchronous**

It is a type of E-learning in which the teacher is connected with the learners in areal learning environment to enable the learner to communicate with the teacher directly despite the geographical distance. And by this sort of learning, the teacher will be able to direct the classroom through his her direct speech to the learners in addition to the capability of learners to see the smart board inside the teaching hall during teaching.

**2. Asynchronous**

Asynchronous learning process is to be a learning process between the teacher and the learner indirect and not limited with specific time but to take place in different times, such as self learning through the net or (CD-ROM) , forums and e-mails.

**VIII. COMPONENTS OF THE E-LEARNING**

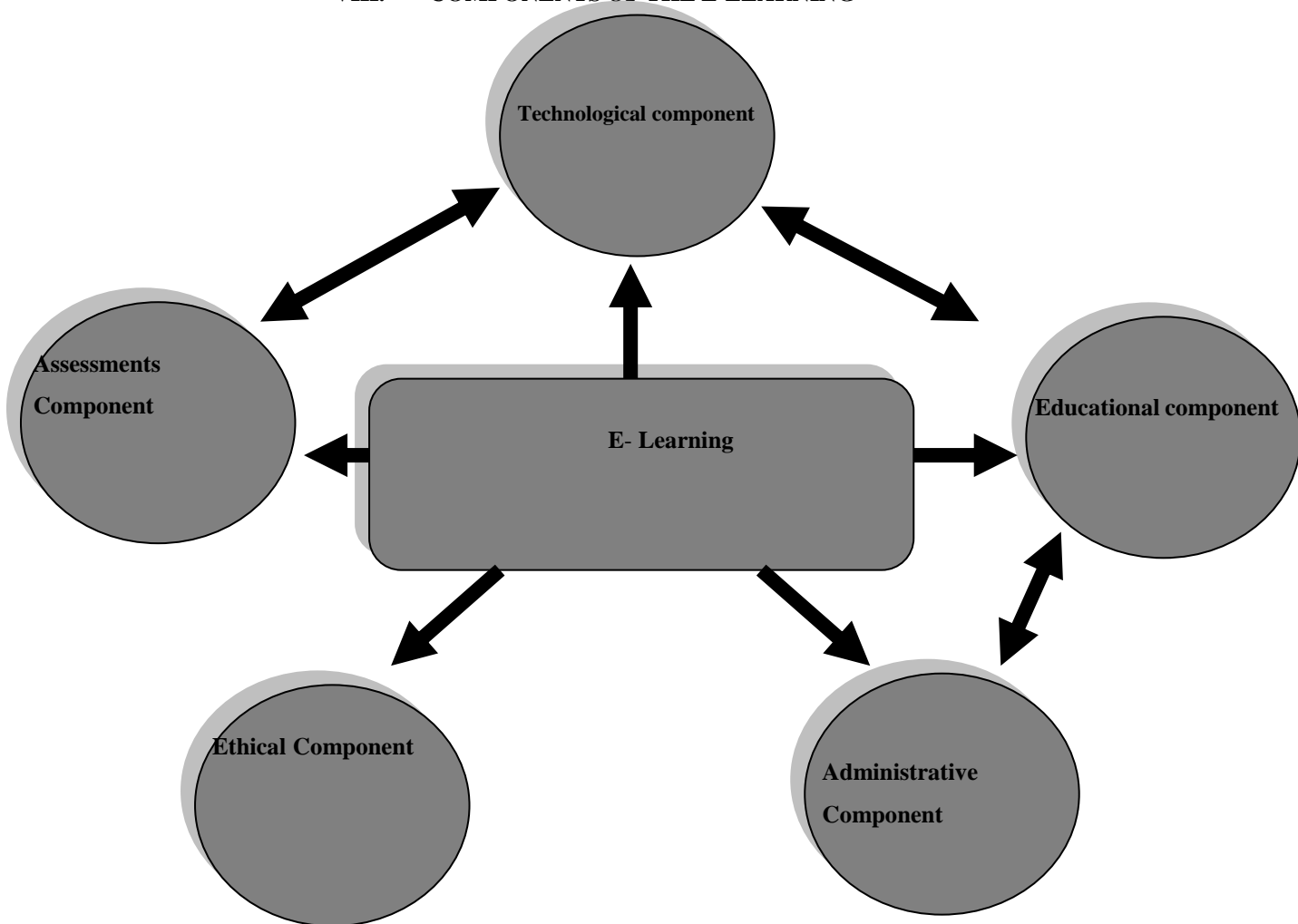


Fig (1): Components of the E-learning



ISSN: 2319-5967

ISO 9001:2008 Certified

International Journal of Engineering Science and Innovative Technology (IJESIT)

Volume 3, Issue 2, March 2014

The studies and researches that concern, with the activation of electronic learning, refer to that there is a group of basic components which are important to apply the E-learning system successfully. Starting from adopting the idea, applying and evaluating, reaching to the assessment and repetition of the evaluation and improvement. Each of these components has many branches that corer specific characteristic to the E-learning which cannot be defined in general scientific way, only through establishing strategy to the E-learning to be adapted with the Sudanese environment, these components are:

1. **Administration component:** It includes many basics some of them are: financial circle, circle of admission and enrolment, circle of graduate affairs circle of student services, personal affairs circle E-learning circle and circle of quality and confession.
2. **Communication and information technology component:** It includes many basics some are: construction beneath, equipments, internet and communication, programming, standard setting and technical aid.
3. **Education component:** It includes many basics, some are: Content analysis, learner, guidance aid, directions of designing, organization
4. **Education ethics component:** It includes many basics, some are: cultural differences, time difference, those of especial needs, digital gap, behavior of network, cases of cheating, and breach content and examinations, intellectual property rights.

**Assessment Component:** Includes a number of pivots, such as assessment of content and design, assessment of the environment for the electronic education, and assessment of the educated.

## IX. RESULTS

- The provision of E-learning requires management and enlightened leadership to be responsible for providing financial and technical support and technological infrastructure, there for, there must be a national council for the E-learning.
- The provision of E-learning requires teachers training and preparing curriculum and students scientifically sound, so, there must be a center or town or national university for E-learning to be responsibly for the evaluation of the educational process in a continuous manner.
- Concluded from this paper that E-learning is one of the most effective means, especially after we realized that education is no longer a stage in human life, but became continuous process and sustainable and necessary issue for the individual himself and the whole nations, if it becomes and individual of us need more to be learned worked and then back to the education of new then worked .thus, E-learning provides a possibility of continuous learning. As well as the features and characteristics of the many that make it on essential component of education, also supported the modern theories in education and philosophy of the direction of learning through exploration and provides E-learning potential exploration through desire or curiosity which helps to increase the effectiveness of teaching and learning. To achieve an effective E-learning to be successful and build a plan for E-learning environment a adapts to the Sudanese.
- Directing educational research and technical educational research in research centers and universities to serve the development of software to share in the computerization of the curriculum and building educational applications.
- Adoption of the definition and concepts contained E-learning paper help to spread the concept of Sudan and framed to serve a well- defined strategy and features.
- Adoption of E-learning comments contained the paper to be a framework for a plan to build E-learning in Sudan.

## REFERENCES

- [1] AL-Far, Ibrahim Abdul Wakir, the use of computers in education, Dar AL-fikr, Jordan,2002.
- [2] Ali Ali Hubaysh, third ware and the issues of survival, AL-Ahram foundation, 2005.
- [3] AL-muhaisin, Ibrahim Abdullah, informatics, education rules and the theoretical basis , Dar AL-Zaman,AL-Madina , 2005.



ISSN: 2319-5967

ISO 9001:2008 Certified

**International Journal of Engineering Science and Innovative Technology (IJESIT)**

**Volume 3, Issue 2, March 2014**

- [4] AL- Sammani Abdul muttalib Ahmed Talb , a scientific paper, using the web to improve and transform the education process , downal of the white Nile for science and technology , Sudan , 2012.
- [5] Awad Haj Ali and Abdul Muttalib Samani, a scientific paper , measurement and evaluation case study of mathematics testimony secondary Sudanese , Journal of Higher Education , Sudan, 2000.
- [6] Badr Khan E-learning strategies, beam to propagate and science, 2005.
- [7] Cunningham, Morag F; Kent, Fiona H; Muir, David. “Schools in Cyberspace”, 1st edition, Hodder & Stoughton London, 1997.
- [8] Elzayat, M.F, A strategy to improve E-learning adoption, implementation and development in higher education in Egypt” PhD Thesis, University of Sunderland, UK, 2009.
- [9] Ismail ,AL-Gharib Zaher, E-learning from application to professionalism and quality the world of books, cairo, 2009 .
- [10] Khan B., Web Based Learning, Educational Technology Publications, NJ, USA: Englewood Cliffs, 2001.
- [11] Mansour Abdel mahmoud osman, a scientific paper, Technological Education, unpublished, sudan,2011.
- [12] Selim, H., Critical success factors for E-learning acceptance: Confirmatory factor models [Online], Journal of Computers and Education, Vol. 49 No. 2, p.p. 396-413, 2005.
- [13] Slama, Abdel Hafez, means of communication and technology in education, Dar AL- Fikr, Jordan,2006.

#### **AUTHOR BIOGRAPHY**



Dr. Mozamel M. Saeed is the head department of Computer Science at Faculty of Science, Salman Bin Abdul Aziz University. I've published some papers internationally.



Prof. Dr. Al Samani A. Ahmed is Academic affairs secretariat, Al Neelain University. have published some papers & books internationally.