The position of interactivity in electronic education and learning system

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Abstract: The rapid and increasing growth of information and communication technology (ITC) leads to changes in the various fields of human life, including the education system. Cyberspace gives many capabilities in education field to its users with enormous resources and facilities in science and knowledge field and features like timelessness, spacelessness and interactivity, etc. Expressions like class without wall, smart schools and virtual University, etc. refer to new type of e-training, which in contrast with traditional education, is being fit in educational systems of various countries. In traditional education because of the physical presence in time and place, student, professor and the content and school resources, the participation and interactivity is face to face and the main features of the education are the interactivities which knowledge and information are exchanged through them. With the introduction of e-educating, as a manifestation of the penetration of ICT to education field and teaching-learning process, the concept of interactivity in teaching and learning process has also undergone extensive transformation. Successful learning is achieved when the learners can interact well with the content, means of communication and ... until the enough motivation is created in the learner. In fact, in e-learning environment a condition should be created that the leaner see himself in front of the problem and seek and think to solve it. Some believe that if a technique or tool is in coordination with the technology and interactive, then it will be in the bests. The main question in this article is to investigate the interoperability of distance educating and answer to this question regarding that in virtual educating environment the interactivities are not face to face, whether this has an impact on the learning of learners or not?

Introduction

E-training means to use the internet for learning, which is an achievable goal through internet connection of web browser. E-training is a new type of education, which doesn't need the presence of the students in the scheduled classes.

During the recent years, with the increase in the use of modern communicating technologies, a new term called e-learning was born. All the programs, which lead to learn via computer networks especially internet, is called e-learning. The term e-learning includes a wide range of applications and functions, including web-based training, computer-based training, virtual classes and electronic cooperation.

Kahn (1997) considers the e-learning as an innovative approach which uses web resources to provide the education for distant audience. Anderson (2002) say in the definition of the e-learning that the learner uses internet in order to get knowledge and creating personal meanings, develop the learning experiences and access to learning content, make interactivities with the content, instructor , and other learners and obtain support during the learning process.

E-training has two distinctive features for effective learning; it emphasizes the self-learning and raises the opportunities for interactivity, dialogue and collaborative learning in the students through setting up virtual classes and group discussion environments. Thus, the biggest change that the virtual education provides its grounds, is the increase in the tendency of participation among learners and teachers. The main and actual effect of virtual education is to help create the new approaches, which recognize the interactive capabilities of e-learning and use it appropriately. Electronic communications technologies are capable to develop the interactivities among people in the field of time and place and transform the learning and teaching activities because of having its special text, audio and video media capacities.

Thus, teachers and electronic education providers should obtain enough knowledge about the types, state, and the proper means of interactivity in different situations of electronic education. Thus, in the present article the importance, types and the state of interactivity and its means in electronic education are explained using the resources.

The role of interactivity in e-learning:

Interactivity is a mutual connection which both the sender and receiver receive the information and provide a feedback through it. The different definitions of interactivity are presented including Moore (1989) who believes that the interactivity is the involvement of learner with the course content, other learners, instructor, and the technological media and the mutual exchange of information is the result of the interactivity of learner with the other learners. John Dewey considers the educational experience as the interactivity between the individual and what makes up his environment at a specific time, providing a concept "practical" in the education based on the activity. Dewey knows the interactivity as the main element of the education process and believes that this interactivity occurs when the students make some changes in the information provided to them and Use functions and their personal values in making their own knowledge (Campbell, 1995). Bandura says that the interactivity have dimensions including communications, collaboration, and active learning (1997). Generally, interactivity and mutual interaction is defined as the necessity and requirement of quality and efficiency in e-learning (Cooper, 2001).

Michael Hanafin (2006) believes that the computer-based interactivities has five functions to support the educational structure including:

Adjustment: The adjustment of interactivities can be considered from two social and individual perspectives. From the social perspective, it is tried that an educational group create specific order and harmony and work together. From the individual perspective, this function tries to determine the pace of progress during the course, so that the educational objectives are estimated within the appropriate time and in terms of effective training.

Developing: One of the functions of the interactivity is the development of the relationships between the new content and the schemas in mind, so that the learners can obtain more complex, prominent, transmissible relationships among information and the skills with information and new skills. At the same time that people demonstrate their concepts to others, these definitions grow and bind with the schema that are made in the internal structures and during the activities and personal experiences of students.

Regulating: this function is the most behavioral function of the interactivity. The stabilized interactivity usually takes place between the professor and the student. Nevertheless, this interactivity can be obtained through programmed computer feedbacks in the interactive tutorial programs and the peers during collaborative learning and problem-oriented activities.

Navigating: this function indicates the path that the learners can interact with each other and with the content during the function. The appropriate navigation is necessary when the students encounter to the volume and source of the information and the different ways on the network.

Revelation: Hanafin concentrates on the revelation in the computer system that its aim was to demonstrate the content and supervise on the students answers, providing the concept of revelation in 1984. Interconnected and available structure that the internet has now created opens a new gateway to a greater quality and quantity in the revelation. The explore is one of the motivating and personal functions of the interactivity. The interactive ability that the explore gives to the students, enable them to pursue their own interests and routes.

Types of interactivity in e-learning environment:

In the classic education system, the communication between the professor and the student is face to face, and the field of the communication is the raised subject in the class and all the students talk about it.

E-training includes all the educational activities, which are carried out by individual or groups in online and offline, synchronic and asynchronic, by independent computers network and other electronic devices. Thus, interactivities in electronic education environment are divided into two general forms, synchronic and asynchronic. Each of these two interactivities forms are established with different tools and in different situation. The purpose of the synchronic interactivity is a kind of interactivity which people (including teachers, students, professionals, consultants, etc.) communicate with each other Live and simultaneously and exchange ideas and views or information face to face (through personal computers network). Synchronic communication becomes possible through video conference, virtual classes and chat rooms. Asynchronic interactivity is another type of interactivity, which time and place are not clear in it and people can enter the network at any time and any place and exchange the information. Asynchronic communication is usually carried out using email, news group and electronic discussion forum.

Michael Moor (1989) is the first person who proposed the most common form of the triple interactivity in the electronic learning from theory to practice book including:
- Student-student
- Student-professor
- Student-content

After that, this discussion was completed by Anderson and Grison the professors of At a Canadian Virtual University. They mentioned other forms of the interactivity including:

- Professor-content
- Professor-professor
- Content-content

Interactivity between student-student

Several studies indicated that the quality of the student-student interaction is more important than the quantity of the interaction among them (Bannan, 2002). Students do not learn just from their teachers; they also learn by discuss with each other about issues, believes and their expectations. Today technology provides the possibility of the social and group learning through computer conferences.

One of the ways of student-student interactivity is their presence in the class discussions synchronic and asynchronic. The professor designs a model to guide these discussions as an facilitator and these discussions slowly change to open discussions.

During the discussion (whether synchronic or asynchronic), the students are divided into smaller groups in order to participate discuss more deeply in the subjects of the discussions. Beyond the asynchronic discussions and the synchronic class session, the facilities and other web tools are available online for the use of the student-student interactivity.

Information and communication technology links the process of teaching and learning with wide world outside the class quickly. E-learning is able to develop the independent study, which is the main and positive feature of the early generations of distant education, and provides a series of synchronic and asynchronic learning activities. The design of the appropriate amount of these interactivities is so important and is subjected to a series of factors that most of them are stem from the expectations and capacity of the students to interact. We cannot consider the distant education as a purely individual or collaborative process any more.

Interactivity of student with the professor

The interactivity between the professor and the students is most important type of interactivity in the online environment. (Brinthaupt, Fischer, Gardner, Raffo, Woodard, 2011; Mayes and et al., 2011).

In the virtual education system, the role of the professor is not a mere mentor teacher, he also should modify the misguided believes of the student and guide him to find out the answer of his questions and this would be achieved with a stable and correct connection.

In the interactivity between student and professor, it is important to note the following points:

- Non-discrimination among students by teacher
- professor's acceptance and enthusiasm to the student's ideas
- professor's sensitivity to student's interests
- Respectful behavior of professor with the student
- encourage student to creativity
- Professor's availability
- Encourage student to further investigation by the master

The advantage of this method of the communication is that the learner does not feel embarrassed from repeating an experience or repeating questions, like the situations that is faced his professor. He can repeat a work based on his favorite and by a appropriate to his taste method several time until he becomes experienced in this particular case.

Video conference based on the computer, is a method that puts the professor and the student together like the traditional lecture method. By the means of computer conference, the messages, feedback of the assignments and the other communications with each member of the class can be exchanged be email.

By the means of the asynchronic conferences, larger groups can be supported.

Interactivity of the student with the content

In the traditional training system, the interactivity of the student with the content means to study the literature and library resources, but in the structure of the virtual education the content is often a rich set of computer-based training, simulations, and creative media.

In the online training system, the professor should select the appropriate educational-interactive content regarding to the subject of the training and the willingness of the students and prevent providing too much content to students. In effective online training, each section of the content has been selected carefully, and provides an appropriate opportunity to interact with the content for students. It is important to note that while the content should be selected with a particular obsession, the flexibility factor of the content, regarding the situation willingness of the students and the subjects of the class, is an integral part of an innovative virtual learning class.

Interactivity of the professor with the content

The first type of the three interactivities that first were considered by Anderson and Garrison (1999) is the interactivity between the professor and the content.

The development and the application of the content is one of the most important roles of the professors in the electronic and traditional training. The semantic network provides opportunities for teachers in order to be able to search the learning materials use them and create them in some cases. This learning material becomes up to date automatically by other content factors of new data and other environmental sensors and results of research.

On the other hand, the use of the internet, saving time in the compilation, provides the opportunities for them to study their favorite articles times and times and as soon as possible and in the shortest time refer to the several prior years versions of the publications and search their specific subject and save it somewhere. When this internet information facilities are mentioned in the virtual training and learning dimension, indicates that by means of this network, the professor and the student can communicate Around the world without any local, geographical, political and social limitations, live, audio and video.

Interactivity of professor-professor

The presence of multimedia and low cost networks, have lead to create unique opportunities for the interactivity of the professor-professor. A set of broad and diverse network tools have been created in order to support the synchronic and asynchronic interactivity between professor and professor. If the e-learning professor wants to take the maximum advantage from the developments made in his field, also developments in education through e-learning, he should know this type of network tools and use them.

The interactivity of professor-professor is main base and axis of a society that the professors work within it. Structuralists believe that such a society is necessary for providing multiple perspectives needed to develop education in complex fields, especially multi-cultural fields, which are specific for e-learning.

Such networks provide opportunities for supporting and professional improvements of professors through communications with colleagues. Moreover, these interactivities encourage professors to gain benefit from the improvement and explore of the knowledge on their subject about the scientific community of the professors.

Interactivity of the content-content

Computer scientists and educators are creating and developing new types of educational interactivity in which the content is programmed in way that communicates with other informative sources and is being updated constantly with more new features. Right now, some factors and programs are being developed, which are able to retrieve information, run other programs, adopt a decision and examine other resources on the network.

Tools and interactivity patterns:

Generally, following models are discussed in the e-training models topic.

1. Web-based training

The training is via internet in this method. In the most cases, the tests and the licenses are via electronic and web. Classrooms, lecture notes, handouts, discussion rooms, emails, etc. are included in the features of this method, and all of them are stored on the web. However, due to the extraordinary flexibility of the e-training, the way of training can be designed and implemented arbitrarily, regarding the activity, condition and facilities.

2. Computer-based training

This method does not require an internet connection or even network, except in special cases. The information is stored on an electronic medium and the user can use it using a computer or e- reader of the electronic medium device. A typical example of it is the use of educational CD.

3. Training through mobile digital devices and tools

Training which is offered through mobile digital gadgets including PDA, tablet PC.

4. Training through mobile phone

It is a new training method and it can be almost included in the above group, but due to the increasing number of people having cell phone and concentrating on this method known as mlearning, a separate category is considered for it. It can be implemented properly. But it is necessary to establish a communication infrastructure.

Conclusion

Heidegger says that technology is the inevitable human's fate. It can be said that, according to this, the e -training phenomenon will inevitably be seen abundantly in many parts of the world. E-training may cause concern among some experts like many changes that technologies have created in our lives; because this type of training reduces the interactivities between teacher, student and content, resulting in academic failure of student. However, according to the fact that the base of the e-training in

student-centered, even regarding the personal meaning of the word, student, a person who should seek for knowledge and science, e-training provides an example of the correct word. Interactivities in virtual environment is not restricted to walls of the classes, the books of one or some libraries and a limited number of teachers and students, it provides a class with the extent of the virtual boundless space without the constraints of time and place for the student.

While e-learning technology is not restricted by time and place, it broadens the social interactivity environment and makes some changes in its structure. From the educational viewpoint, e-learning should be considered from the perspective of the nature of the interactivity between teacher and student.

Asynchronic nature of the e-learning (for more use of the users from asynchronic type) provides opportunities for collaboration or disaffiliation.

E-training includes both synchronic and asynchronic human interactivity which is provided by a volume of the distant communication technologies especially audio and video and computer. The ability of the networks in using different types of the human skills for the improvement of the interactivity in the virtual environment is increasing. Manufacturing of the content and knowledge, either individually or collectively, is happening during talking about the content, assignments, and projects.

E-training is a virtual learning environment that the interactivity of the learner with content, other learners or mentors is carried out through communications and information technologies and tools. Thus, electronic communication and interactivity make a different type of interaction compared with what happened in traditional trainings happen. In the electronic training environment the teacher and the learner are separated in time and place and the learner communicate with teacher, classmates, and other people or sources With the help of computer communication to perform individual and group learning activities. Due to the fact that the interactivity is the main type of the activity in the teaching-learning process and the learning is the result of interactivity of the teaching elements, and if the expectation in the electronic educational environments is that the learners should reach beyond receiving the knowledge, then the learners' experiences should be involved, and the opportunities for interactivity with information and other elements of the learning such as other learners and the teacher should be provided. E-training provides broad interactivities synchronicly and asychronicly in order to access to a extensive information and communicate different types communications using new technologies such as: internet, e-mail, weblog,

webcam, audio and video conferences, chat rooms and etc; this opportunity in the traditional training process was existed very limitedly. Thus, professors, teachers, and the training leaders in electronic environments should be familiar with types, forms and diverse tools of communications and mutual interactivity with each other in order to obtain effective training and learning and reach the ultimate goal of training which is an effective learning opportunity by selecting and applying appropriate tools for different types of educational interaction in different situations.

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