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VIRTUAL LEARNING ENVIRONMENTS

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By tradition, learning programming in a traditional manner is not an insignificant mission and is often linked with many difficulties. In addition, there are many shortcomings in teaching and learning programming in the traditional method in classroom. Therefore, many classic colleges and universities in the Turkey have been forced to embrace distance education on account of the shifting demographics of the student population. However, on-line distance education is a new subject area in Turkey's universities. Today, there are new ways in learning program as such using virtual learning environments, evolving programming environments and software programs and applications. The information technology exists for this application providing for computer-based instruction or asynchronous and synchronous learning networks. The virtual learning environment is system constructed through internet which incorporates a number of same virtual models for tests, home works, classes, classrooms, and academic fields. These provisions are creating the "virtual campus"(Stenerson, 1998). It is this technology that supports on-line communications between learners and instructors and supports them to develop portrayals and descriptions of the solutions they are up to. There have been countless methods established to support distance education. However, as each institution has distinctive principles and special needs, a unique system designs must be developed that is designer for the institution. Virtual learning environments are a key to some of the problems of providing a reliable learning environment. Universities in Turkey came across many problems such as lack of finance and physical interaction, and risks to network environment when it is considered giving a real, physical specialist laboratory to teach computer networking. However, we resolved most of our troubles by developing and practicing some techniques. This study is presenting Distance Education Elements, its components and tools. Moreover, it also focuses on Virtual Learning Environments and its advantages and disadvantages for the learners and the teachers. It also offers the timeline of virtual learning environment in the world and Turkey; and the reader will see Distance Education Elements, its components and tools.

Keywords: Education, On line education, Virtual learning environments.

Introduction

Virtual Learning Environment (VLE) has become popular with both university students and teachers, as a means of learning and teaching technique, due to easily accessibility of Web-based technology (Beller & Or 1998; Kiser 1999). VLE is defined as computer/technology-based environment which is moderately opening systems, allowing communications and information sharing with other participants and instructors' and providing access to a wide range of assets and resources (Wilson, 1996). The significance of a VLE is to entirely bring out the characteristics of both 'Learning Anywhere and Anytime', i.e.,

learning in an asynchronous manner. The principle of a VLE is to underline on self-control, disperse thinking models, diverse viewpoints, and free-thinking (Hill & Hannafin 1997).

VLE is also a 'hot topic' in discussions about the education reform of teaching in Turkey. They are thought to be convenient for students to practice on and to be a worthwhile teaching and learning experience. Many university teachers in Turkey are coming to expect a VLE CD-ROM to be included in textbooks and there is a growing tendency to regard the provision of such resources. There have even been suggestions by some that virtual field trips will probably replace traditional field excursions at some time in the medium-term to long-term future. It is true that the abundance, variety and relative ease of delivery of VLEs do provide some advantages over traditional educations. For instance, Teachers have the opportunity to interact with students via web-technology from all over the world, as long as they find internet. (Arslan, 2010). They also provide the great benefit of diversity of experience to students. Nonetheless, despite these obvious advantages, it is our opinion that students must take traditional hands-on education in order to provide them with the necessary experience to take advantage of the opportunities provided by virtual learning environments. It is important for teachers and students to be aware of both the advantages and disadvantages of VLEs from the standpoint of the users so that they can choose suitable tools and university teachers can make the best use of them as learning and teaching tool.

VLE refers to anything interactive or with visuals, audio, video and graphics (Arslan, 2010). Multimedia combines five basic types of media into the learning environment; text, video, sound, graphics and animation, thus providing a powerful new tool for education (Duke, 1993). These are to demonstrate abstract concepts, to accommodate students with a variety of learning styles, to engage students, to enable active learning, by incorporating VLE into learning, activities, students can manipulate, create and interact with material rather than just absorb representations created by others (Kearsley, 1998; Person, 2003).

VLE Timeline

Distance education is being considered a new phenomenon by many of the Universities and institutes; however, it is not really a new trend. It began hundreds years, when on the 20th of March, in 1728, Boston Gazette covers an announcement "Teacher of the New Method of Short Hand" by Caleb Phillipps, directing that any "Persons in the Country desirous to Learn this Art, may by having the several Lessons sent weekly to them, be as perfectly instructed as those that live in Boston" (Börge, 2005). Later, distance teaching primarily depends on the progress of posting services of 19th century and has been experienced no less than since Isaac Pitman educated shorthand via correspondence in Great Britain, in the 1840s (Moore & Kearsley , 2005). In 1883, the Correspondence University of Ithaca, in New York (a correspondence school) was founded (Bower & Hardy, 2004). The first president of the University of Chicago, in the United States, William Rainey Harper, established the idea of extended education, whereby the research university had satellite colleges of education in the wider community, and in 1892, he also fortified the idea of correspondence school courses to further endorse education, a notion that was carried out by Columbia University (Levinson, 2005). In 1911, the University of Queensland in Australia founded its Department of Correspondence Studies (White, 1982). In University of Alberta, the director of the School of Education, M.E. LaZerte, settled a set of instructional strategies for teaching and learning in 1929. For instance, he established a number of strategies and techniques to diminish trainer participation, with the intention of raising the possibility of collecting information in a steady way. One of the devices that he developed was the "problem cylinder" which could present a problem to a student and check whether the steps to an answer given by the student were correct (Hunka & Buck, 1996). In 1996, Glenn Jones, Chairman, and Bernard Luskin, founding leader of Jones International University launches Jones International University which becomes the first qualified fully web-based university (http://www.jiu.edu/people/glenn-jones). In 2002, Mobile Learning started to develop (Traxler, 2007). In 2008 Open University started at YouTube.com (citation is needed).

In Turkey, VLE starts in 1860 which is implemented by newspaper tryouts. Between the period of 1927-1960 VLE is discussed and many suggestions presented. For example, in order to resolve the educational problems of Turkey, the attempt of taking advantage of distance learning was made in 1960. In this first attempt, the Ministry of National Education, established 'Correspondence Course Center' (Mektupla Öğretim Merkezi) in order to implement learning through correspondence in vocational and technical departments. (Fidan & Okan, 1975). In the early 1970s, an increase in the number of those who want to enroll to higher education aroused, and with the existing formal education the education needs could not be fulfilled. Thereupon, the Ministry of Education has given duty of providing higher education via correspondence to the Correspondence Course Center in 1974, and YAYKUR was founded. Developments in learning technology contributed to the establishment of Distance Education System which was implemented 1982–1983. In 1983, the 5th and 12th articles of 2457 Law, which restructured Turkish Higher Education, provided an opportunity to Anadolu University to have a right for open education faculty (Karakaya, 2005). The first Internet-based distance education program, Information Management associate degree program, started in 2001-2002. In 2005, Higher Education board (YÖK) founded Distance Education commission from its members (Mutlu, 2006). In 2010, Open and Distance Education Faculty was established at Istanbul University (Aslan, 2010). In 2012, Istanbul University and Ahmet Yesevi University made first live lesson from Turkey to Kazakhstan.

What is Virtual Learning Environment?

Virtual learning environment (VLE) is a set of teaching and learning tools intended to develop a student's learning capability via computers and the Internet in the learning process (Rouse, 2011). The principal mechanisms of a VLE package contain curriculum planning (breaking curriculum into sections that can be assigned and assessed), student tracking, online care for both teacher and learner, electronic communication (e-mail, threaded discussions, chat, Web publishing), and Internet links to external curriculum resources. VLE users are assigned either a teacher ID or a learner ID generally. The teacher sees what a learner sees, however the teacher has extra user privileges to produce or revise curriculum and watch student act. There are numerous profitable VLE software packages obtainable, together with Blackboard, WebCT, Lotus Learning Space, and COSE (Rouse, 2011).

The notion of multimedia and VLE took on a new meaning, as the capabilities of satellites, computers, audio and video come together to make new media with enormous potential throughout the 1980s and 1990s. In conjunction with the developments in hardware and software, these technologies were able to make available greater learning facility and with consideration to the specific needs of individual users (Fenrich, 1997; Meyer, 2001; Mayer, 2003). Virtual Learning Environments are a term frequently overheard and debated among educational technologists today. Actually, the term VLE covers a lot of territory. VLE, in its comprehensive sense, means graphics, music, sound effects, voice, video, and animation, in any grouping, in the same program or presentation (Blumenfeld, 1991. Fensham, 1990; www.aare.edu.au). It can be described as a combination of VLE elements (audio, video, graphics, text, animation, etc.) into one synergetic and symbiotic whole that results in more benefits for the end user than any one of the media elements can offer separately. These can be defined commonly as any grouping of two or more media such as sound, images, text, animation, and video. On behalf of educational technology resolutions, VLE refers to network based systems that use associative connections to let users to direct and possess materials and data stored in a combination of text, sounds, graphics, video, movies, music, lighting and other media as for education (Meyer, 2001; www.wps.prenhall.com; Sandholtz, 1997; Vanbuel, 2006). Once the word is used with computer technology, VLE bring up a multiplicity of applications that syndicate media and that use CD-ROM, video, audio, DVD, and other media tools. As it is seen that multimedia is the pooled use of media, such as images, video, audio, CD/DVD-ROMs, the internet and communicating applications such as applets and flash for education and entertainment (Chang, 2004; Finn, 2002). VLE hardware necessities consist of a basic computer system with the regular input devices, central processor, and output devices, CD-ROMs or DVDs, sound boards or cards,

speakers, video boards, high-speed central processors, extensive secondary storage or hard disk (Lieshout, 2001; Millar, 2005). VLE basic technologies contain text, maps, graphic images, electronic presentations, animation, videoconferencing, digital audio and video, web learning environment, videoconferencing systems (Lieshout and etc, 2001; Phillips, 1997; Behrens, 1996, 1997; Bijnens 2004, 2005; Cleveland, 1998).

The Advantages and Disadvantages of VLEs

The key to constructing a successful VLE module and a fruitful teaching implementation is to detect the advantages and disadvantages of VLEs. VLEs have a lot of advantages as opposed to classical teaching methods. For instance, teachers can track if learners are engaging with the internet-based communication and related materials by submitting evaluations online and providing quick feedback. The message services can inspire teamwork and communication both between instructor and learner and learner and learner. Teacher and learner can also involve more enthusiastically in a course at a time and place that is suitable for both (Becta, 2005). Moreover, Course information such as past exam papers, timetables, and administrative information can all be found in one place, and are accessible from one authoritative source. Careful signposting (such as including links with course material) can provide extra care for learners, or inspire learners to study at an intensive level. With a VLE, it is possible save time for teachers by dropping time required for photocopying, course material delivery and updating course material (Becta, 2005). The main benefit of virtual learning environments appears to be that they can present information at a variety of scales and present images from a variety of perspectives at once (for example aerial views, cross-sectional views, animated rotating block diagrams, etc.). Consequently, extremely varied forms of information from the field, laboratory or library can be unified together to form immediately obtainable material. (Qiu & Hubble, 2005)

Expectedly, the apparent and most thoughtful shortcoming of VLEs is that they are less effective at informing mere based skills than actual world (Shroder et al. 2002). The material presented on a computer is only an abstraction of the real thing' and 'being on a VLE does not have the same impact as a real world or face-to-face education. VLEs can be designed to be interactive, but 'there is limited give-and-take interaction with a computer, in contrast to the interaction between real field trip leaders and participants' (Hurst 1998).

Common Distance Education Systems

Distance learning has a broad, mixed category of techniques which deliver learning. For example, (1) Modular Object-Oriented Dynamic Learning Environment (Moodle) is an unrestricted source e-learning software platform, also known as a Course Management System (CMS), Learning Management System (LMS), or Virtual Learning Environment (VLE). It is delivered without restrictions as Open Source software. In essence, this means Moodle is copyrighted, yet that you have other choices. You are permitted to duplicate, use and change Moodle so long as you agree to, (a) offer the source to others; not alter or eliminate the original license and copyrights, and (b) put on this same license to any copied work. ("About Moodle," n.d.). (2) Open Meetings (Virtual Class) another platform which is flawlessly combined as a part of Moodle and there is own classroom in every single course. In these computer-generated rooms, teachers and learners can have chosen lectures and sessions with audio and video over the Internet. The conferences are going to be recorded for the learners who missed them and the recordings will be connected to the course after the lessons. In order to use the Open Meetings, one needs to have the latest Adobe Flash plug-in set up to his/her computer and for the browser. If one cannot lookout the videos from YouTube, then he/she does not have the Flash installed. ("Open Meetings virtual classroom," n.d.). (3) Adobe Connect (previously as Presedia Publishing System, Macromedia Breeze, and Adobe Acrobat Connect Pro) which is completely Adobe Flash based is software used to produce

facts and common presentations, online teaching materials, web conferencing, education modules, and user desktop sharing. All conference rooms are structured into 'pods'; with each pod performing a specific role (i.e. chat, whiteboard, note, etc.) ("Adobe Connect," n.d.). Enocta is an SME essentially concentrating on plan, progress, delivery and promotion of custom or common e-learning contents for official and specific usage; project and growth of learning organization system software for e-learning contents, as well as their fixing and support services. Enocta with its authorities has tough mechanical abilities on Instructional design, Simulation design, Motivation design, Visual design, User interface design, Online interactivity design, Instructional material development, Skill development, Serious game development, Behavioral change development and Innovative authoring tool development. In addition, Enocta has nationwide and worldwide plan experience. ("e-Learning, Learning Management System, Content Development," n.d.). (4) WebCT (Course Tools) or Blackboard Learning System (BLS), which is owned by Blackboard, is an online branded virtual learning environment system. It is sold to universities and other establishments and used in a lot of academy grounds for e-learning. To their WebCT courses, teachers can add such tools as discussion boards, mail systems, and live chat, along with content including documents and web pages. The latest types of this software are now called Web courses. WebCT is noteworthy in that it was the world's leading extensively effective course organization system for higher education. At its height, it was in use by over 10 million students in 80 countries. ("WebCT", n.d).

The Tools Used For Distance Educations

Distance learning is a broad, mixed category of methods to deliver learning. The categories can be systematized along a number of descriptive perspectives. The following table outlines the most prevalent forms of Distance Educations by their characteristics and prominent features.

Table 1. Type of the VLE.

Type	Characteristic	Notable Features
Audiotape	Audio learning tool, very mobile and cheap when together with printing materials.	Useful in language learning and practice as well as literature. Linear format.
Videotape in VHS and DVD formats	Visual and audio tool; the checkout approach with print materials is very popular in California.	Multi-sensory tool with linear delivery format.
Laptop computer checkout	Multipurpose method to provide a wide range of learning activities from skill and drill to simulations.	Hardware is expensive and being replaced by less expensive Internet delivery.
Mobile van / lab	Resources taken to the learners, useful for work site learning and reaching parents at elementary schools. Van learning.	Traditionally useful way to distribute videos, audiotapes, DVDs, and other learning tools, nonetheless it can be costly to operate and is less and less popular as distributed learning increases.
Radio course	Low cost way to reach ESL learners. If possible it should be used by more learning providers.	The radio course must include means for learners to interact with the instructor. Phone call in during or after air time could be joined into the programming.

Telecourse	Delivery over television, typically a cable public access channel or school owned channel.	The telecourse must include ways for learners to interact with the instructor. Phone call in is common. Print materials accompany on-air instruction.
Videoconference – Two way interactive video	Electronic communications between people at isolated locations. It can be audio, audio graphic, video or computer based.	It often uses proprietary software and consequently expensive. Internet models and broadband communications are making it more affordable and accessible.
Email	Asynchronous text files and attachments.	Good tool to stimulate learning, writing, and communications skills.
Internet	Instructionally delivery over the Internet, either learning modules or entire courses.	Instructional learning systems let teachers to create, manage, communicate with, and test students online. The interactivity and ability to hyperlink to international learning resources are very attractive. Developed broadband communications are enabling the effective use of video and synchronous communications. Chat and asynchronous communications enable links among the teacher and learner and among the learners.

Source: http://www.cdlponline.org/index.cfm?fuseaction=whatis&pg=2

Distance Education Elements

Keegan (1986) recognized five main elements of the definitions of distance education, using them to compose an inclusive description of distance education. (1) The quasi-permanent of instructor and learner throughout the length of the learning process which distinguishes it from conventional face-to-face education). (2) The effect of an educational organization both in the arrangement and planning of learning materials and in the provision of student support services which distinguishes it from private study and teach yourself programs. (3) The use of technical media such as print, audio, video or computer, to bring together teacher and learner and carry the content of the course; (4) The provision of two-way communication so that the student may profit from or even start channel of communication which differentiates it from other uses of technology in education, and (5) The quasi-permanent nonappearance of the learning group in the course of learning process so that people are usually taught as individuals rather than in groups, with the opportunity of infrequent meetings, either face-to-face or by electronic means, for both informative and socialization purposes. (Schlosser & Simonson, 2006)

Garrison and Shale (1987) claimed that, with regard to progresses in distance education delivery technologies, Keegan's definition was too constricted and did not match up to the existing truth to future potentials.

Despite the fact declining to offer a definition of distance education, Garrison and Shale presented the following three standards they viewed as essential for characterizing the distance education process. (1) Distance education indicates that the majority of educational communication amongst teacher and student(s) occurs non-contiguously. (2) Distance education must include mutual communication amongst teacher and student(s) for the purpose of simplifying and supporting the learning process. (3) Distance education uses technology to mediate the essential two-way communication. Keegan's classification and the descriptions preceding it, define the traditional view of distance education. Rapid changes in the social order and technology are challenging these traditional definitions (Schlosser & Simonson, 2006).

According to Moore's definition (1995, p. 2), distance education is: (1) planned learning; (2) that normally occurs in a different place from teaching; (3) requires special techniques of course design, special instructional techniques, special methods of communication by electronic and other technology; (4) specialized organizational and administrative arrangements (Stover, 2002).

Results

Besides being a powerful tool for making presentations, VLE offers unique benefits to the field of education. VLE is a powerful tool, in order to use the time more economically, principally if research or administration is involved. Via traditional learning verbal message is used as the primary means of explaining ideas to learners; as lectures, printed lessons and text. These techniques consist of both words and pictures, since text alone simply does not let students to get an "impression" of any of plays. Therefore, VLE should be used, to provide an on-line service for students and help them to get a touch from the subjects. Moreover, VLE should be used to ensure that quality control requirements are met by providing a standard vehicle for collecting information. VLE also should be used to facilitate the integration of distance and campus-based learning. The key to provide this experience is having synchronized graphic, video and audio, rather than in a sequential method. VLE enables learning through investigation, detection, discovery and practice. However, technology does not essentially drive education. That starring role belongs to the learning necessities of students. VLE enables learning to become fun and pleasant, without fear of meagerness or failure. It is known that human brain has double channel and they separate information, handing out channels for visual and verbal materials. These channels have some degree of capacity. For active processing, learning requires considerable reasoning dealing out in the verbal and visual channel. VLE is to make; make the most of the usage of both channels, balance the processing load of both channels, use one channel to share the burden of the other, prime related concepts and knowledge to structure learning, as a result learning through experience, learning by doing, learning while enjoying learning when you need to know at using Technological systems (Young, 2006). Finally, VLE is fast, cheap, consistent, private, personal, a strong foundation, a tool to make remembering longer, easier, more information faster and fun.

Acknowledgement

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