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Virtual Learning Environment-Some Realities

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***Abstract*—*A virtual learning environment (VLE) is a set of teaching and learning tools, including computer and the internet, but there are controversies as to the fitness of VLE to mimic the real situation and these controversies have for a long time overwhelmed its justifications; this has made the acceptance of VLE very difficult. This paper is written to address these controversies and this is achieved by surveying some virtual realities. The findings show that VLE in reality, though expensive, is fit to mimic human experts and will economically beneficial in the long run*.

***Keywords*—** *Virtual; VLE; Computer; Internet; Realities and Mimic*.

I. INTRODUCTION

A virtual learning environment (VLE) in educational technology is a web-based platform for the digital aspects of courses of study, usually within educational institutions (Fig. 1.1 & Fig. 1.2). According to [1], VLE platforms commonly allows (1) content management for creation, storage, access to and use of learning resources (2) curriculum mapping and planning for lesson planning, assessment and personalization of the learning experience (3) learner engagement and administration for managing access to learner information and resources and tracking of progress and achievement (4) real time communication for live video conferencing or audio conferencing. A VLE is normally not designed for a specific course or subject, but is capable of supporting multiple courses over the full range of the academic program, giving a consistent interface within the institution and to some degree with other institutions using the system. The VLE supports an exchange of information between a user and the learning institute he or she is currently enrolled in through digital mediums like e-mail, chat rooms, web 2.0 sites or a forum thereby helping convey information to any part of the world with just a single click. [2] One of the processes to enhance the learning experience was the virtual resource room, which is student centered, works in a self-paced format, and which encourages students to take responsibility for their own learning. In virtual mode, the materials are available in the form of computer aided learning program, lecture notes, special self-assessment module. Another mechanism for student to student interaction in a form of simple discussion forum is by using a novel link cyber tutor. This allows the students with an email account to connect with course content and the staff with their doubts and related questions. The students are able to contact the staff without a face to face visit which saves the on campus time. The staff remains anonymous which allows for the several staff to act as a cyber tutor during the course. The students do not remain anonymous although their email addresses are cryptic enough to mask their identity. Students can discuss about the exams, lab reports, posters, lectures, and technical help with downloading materials. The evaluation of the use of virtual resource room is done by surveys, focus groups and online feedback forms.

Fig. 1.1. Virtual learning environment

Fig. 1.2. Virtual learning and non-virtual learning environment

The students have 24 hours of access to the learning materials in a day which suits their life styles. [3-4] VLE typically allows (1) participants to be organized into cohorts, groups and roles (2) present resources, activities and interactions within a course structure provide for the different stages of assessment (3) report on participation; and have some level of integration with other institutional systems. [5-6] For those who edit them, VLE may have a de facto role as authoring and design environments.[7] In another version of definitions, VLE is a set of teaching and learning tools, including computers and the internet, which is used to improve the learning process of students. Some of the things that are likely to be found in a VLE are (1) curriculum material that the teacher has uploaded for the students (e.g. notes, slides from presentations, multimedia materials such as quizzes) (2) discussion forum or bulletin boards, so learners can post messages and teachers and other learners can reply to them (3) file space for students to store their own work (4) internet links to outside resources such as exam board material,

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revision websites (5) chatrooms where students can enter and chat about their work or teachers can hold tutorials (6) messaging so that students can see if other students or teachers are online to ask them a question or talk about their work (7) online assessment where the students can take assessment which can be marked by the computer. There are some components required for the best VLE or online education curriculum to take place. [1] Some of these components include real time communication, content management, curriculum mapping and planning etc. (Fig. 1.3). But the controversies surrounding VLE have for a long time overwhelmed its justifications; this has made the acceptance of VLE very difficult. This paper aim is to address these controversies by surveying some virtual realities for the justification of VLE.

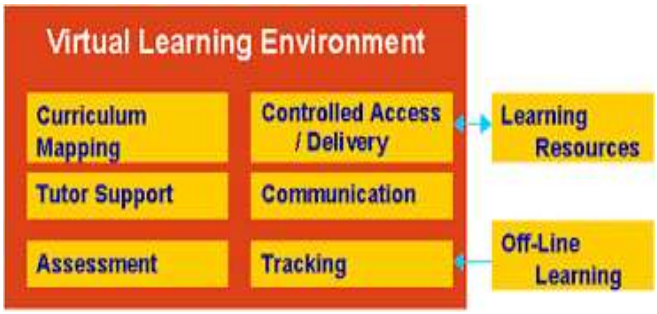

Fig. 1.3. Components of virtual learning environment

II. VIRTUAL LEARNING RELATED TECHNOLOGIES

Virtual reality is used in dentistry for training dentists. A realistic 3D mouth is shown on the screen in real time (Fig. 2.1) and the student can hold a tool that simulates the real tool used for a certain procedure. This tool allows the student to feel the same sensations as they would experience if they used the same tool on a real mouth. The system is used for training and it is possible to train student in a variety of dental procedures, such as removing plaque from teeth. There is also a mode where the instructor leads the students. By holding onto the dental tool the student can experience the same sensations and movements needed to complete a certain dental procedure. Nuclear and chemical plants need highly trained staff to operate them. They need to be able to react quickly to a whole range of dangerous situations as it is in Fig. 2.2 where there was an occurrence of fire incidence. Using virtual reality ensures that (1) staffs are trained to a high degree of competency (2) staffs are tested at regular intervals to check they are competent in dealing with any situation. By this, virtual reality is used to ensure that staffs operating these plants are competent in all the system, such as (1) control of the processes (2) safety (3) environmental protection. Computerized learning systems have been referred to as electronic educational technology, e-learning, learning platform or learning management system (LMS). The major difference is that VLE and LMS are applications, whereas, the learning platform shares characteristics with an operating system where different educational web-based applications can be run on the platform. The term VLE and learning platform are generically used to describe a range of integrated web-based applications that provide teachers, learners, parents and others involved in education with information, tools and resources to support and enhance educational delivery and management. These terms are broadly synonymous with managed learning environment (MLE). The application that form part of these online services can include web pages, email, message boards and discussion forum, text and video conferencing, shared diaries, online social areas, as well as assessment, management and tracking tools. [8-9] The term learning platform refers to a range of tools and services often described using terms such as educational extranet, VLE, LMS, ILMS and LCMS providing learning and content management. The term learning platform also includes the personal learning environment (PLE) or personal online learning space (POLS), including tools and systems that allow the development and management of electronic portfolios. Related concepts of a learning management system (LMS) include content management system (CMS), which properly refers to the organization of the educational or other content, not the overall environment; learning content management system (LCMS), which is more often used for corporate training systems than for systems in education institutions; managed learning environment (MLE), which normally refers to the overall infrastructure in an institution of which the VLE is a component, learning support system (LSS); online learning centre (OLC); or learning platform (LP), education via computer-mediated communication (CMC); or online education.

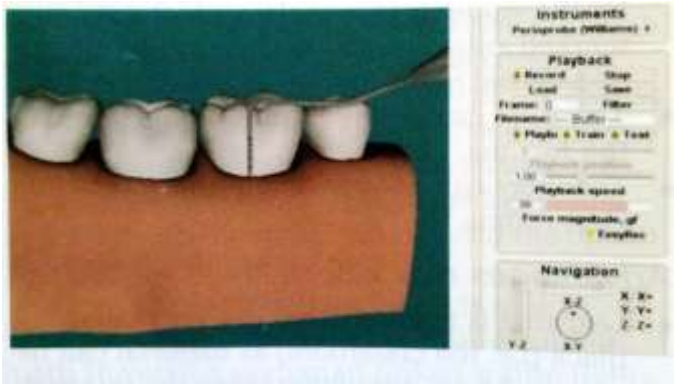

Fig. 2.1. A 3D virtual dentistry simulator training system (Chris Leadbetter et al (2012).

Fig. 2.2. Nuclear and chemical plants with fire incidence (Chris Leadbetter et al (2012).

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III. Application of VLE in Different Skills

For VLE to be accepted there are many skills it needs to support. Teachers and students are the major recipient of VLE technology in that (1) teachers can upload teaching material so that students can get on with their work independently (2) students can complete work and submit it to their teachers so that they can mark it and return it to the student digitally (3) teachers can set online quizzes/assessment for the students to complete which are marked automatically and the marks are transferred to the teacher automatically (4) teachers can answer student questions on the forums (5) teachers can hold revision tutorials using chat rooms. Moreover, VLE is expected to support (1) global and cultural awareness: students have access to a wide network of people and information. Students are able to learn and work with people from all over the world (2) self-direction: students are able to work at their own pace (3) information and communication technology literacy: students use technology to obtain and present information (4) problem solving skills: students are required to meet deadlines.

A. Advantages of a VLE and Virtual Realities

(1) Learning is not restricted to a particular place (i.e. the classroom) as material can be accessed from anywhere using the internet (2) learning is not restricted to a particular time as students can access all the materials at anytime (3) they can repeat the material many times that helps them revise (4) the multimedia material will help present the material in a more interesting way (5) students can try the procedures many times until they get them right (6) there is the option for the instructor to test the trainee on each procedure (7) the students can access the system using the internet and can therefore practice in their own time (8) the system eliminates the need to practice on real patients or model mouths. It is less expensive than using real patients with real equipment (9) lower cost as instructions are not needed to train staffs (10) dangerous situations can be simulated using virtual reality that would be too dangerous to create in real life.[10]

B. Disadvantages of a VLE and Virtual Realities

(1) The VLE software is expensive (2) training is needed to take advantage of what a VLE has to offer, and the time and finance to do this may not be available (3) it could seriously disadvantage those students who do not have internet access at home (4) time is needed for the teacher to upload content to the VLE (5) the system does not have the interaction between a real patient and the dentist (i.e. talking to the patient) (6) only a limited number of dental procedures are available (7) the feeling of the tools for the student dentist may not be the same as with real instruments (8) virtual reality systems are very expensive to create (9) virtual reality systems do not always mimic the real situation exactly.

IV. Findings

Based on literatures and surveys carried out, VLE and virtual realities are technological tools that if properly applied are economical without any controversy. Findings show that they can be used to (1) economize on the time of teaching staff, and the cost of instruction (2) facilitate the presentation of online learning by instructors without web authoring experience (3) provide instruction to students in a flexible manner to students with varying time and location constraints (4) provide instruction in a manner familiar to the current web-oriented generation of students (5) facilitate the networking of instruction between different campuses or even colleges (6) provide for the reuse of common material among different courses (7) provide automatic integration of the results of student learning into campus information systems.

V. Conclusion

Throughout this paper, the role of VLE in educational technology as a web-based platform for the digital aspects of courses of study, usually within educational institutions was examined. This definition generated a lot of realities virtually; this was well elaborated at different sections in this paper. It is cleared that VLE and virtual realities can mimic the real situation. This paper has been able to shed more light on the technological prowess of VLE and virtual realities as instructional and learning tools.

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