**International Journal of Applied Research**

**Payal Beri**
Assistant Professor, Bhutta
College of Education,
Ludhiana, Punjab, India

# Models for implementing virtual learning environments: Looking for holistic approach

**Payal Beri**

**Abstract**
Web-based technology has a dramatic impact on learning and teaching. Learning is the basis for research and lifelong training. Technology developments and network infrastructure improvements, (specifically the World Wide Web) are providing exciting opportunities for the use of computers in all areas. These developments have fit together with an evolving role for education as more students wish to study at a distance, part-time, or wish to integrate their education with their professional career. At the same time, virtual learning system (VLS) is also gaining its popularity among its users. It has brought in a great revolution in itself. Many universities around the world are investing in implementing different Virtual Learning Environments (VLEs) to support the teaching and learning process. However, without an effective implementation, many objectives and advantages are unachieved. Therefore, a well-designed strategy to follow and the use of effective learning mode is requires to the success of an effective implementation of virtual environments for developing this competency and to support and manage the change to a successful implementation of such technologies. This paper presents the Models for implementation VLE in teaching learning process to make teaching and learning effective and accessible.

**Keywords:** VLE (virtual learning environment), models of teaching and learning

## Introduction

Because of the easily accessibility of Web-based technology, there has been a noticeable transformations in the learning and teaching processes (Beller & Or 1998; Kiser 1999).The influence of ICT in universities has transformed many traditional teaching environments into Virtual Learning Environments (VLE). Since the mid-1990s the education community has witnessed the appearance of software products labeled Virtual Learning Environments (VLEs) that aim to support learning and teaching activities across the Internet. Many educators want to take advantage of the benefits offered by the Internet to support their teaching activities. However, creating Internet resources that are stimulating, appealing, easy to use and educationally sound is time consuming and requires considerable expertise. VLEs allow educators to create resources quickly and without the need to develop technical skills. Typically web-based, VLEs provide an integrated set of Internet tools, which enable easy upload of materials and offer a consistent look and feel that can be customized by the user. Popular commercial VLEs currently being used in UK include Blackboard and WebCT1.

## Virtual Learning Environment (VLE)

Virtual Learning Environment is a system for delivering learning materials to students via the web. These systems include assessment, student tracking, collaboration and communication tools. They can be accessed both on and off-campus, meaning that they can support students' learning outside the lecture hall 24 hours a day, seven days a week. This enables institutions to teach not only traditional full-time students but also those who cannot

**Correspondence**
**Payal Beri**
Assistant Professor, Bhutta
College of Education,
Ludhiana, Punjab, India

regularly visit the campus due to geographic or time restrictions, e.g. those on distance learning courses, doing evening classes, or workers studying part time.

There are different types of VLE, which all work slightly differently but ultimately perform the same function and can deliver the same learning materials. It enables lecturers to import all the content from one Online Resource Centre into their VLE at once. This saves time. The terms virtual learning environment (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 environments' (MLEs) and 'managed virtual learning environments' (MVLEs). Virtual learning environment (VLE) is a set of teaching and learning tools designed to enhance a student's learning experience by including computers and the Internet in the learning process. The principal components of a VLE package include curriculum mapping (breaking curriculum into sections that can be assigned and assessed), student tracking, online support for both teacher and student, electronic communication (e-mail, threaded discussions, chat, Web publishing), and Internet links to outside curriculum resources. In general, VLE users are assigned either a teacher ID or a student ID. The teacher sees what a student sees, but the teacher has additional user rights to create or modify curriculum content and track student performance. There are a number of commercial VLE software packages available, including Blackboard, Web CT, Lotus Learning Space, and COSE. For all the reasons, e-learning provides an alternative means of learning which is becoming increasingly popular today. However, one has to be careful in applying technology in classroom.

## Models of learning and teaching
A useful framework for considering different ways of using VLEs to support or deliver courses is one developed by Mason 3, which identifies 3 models:

### Content and support model
Where pre-prepared content is delivered in print or online, and support is provided online. Content and support are not integral to one another, i.e. online support is an optional extra and is not integrated into learning activities. Relatively easy to establish but does not fully exploit the benefits of online learning.

### Wrap-around model
Where there is a mixture of pre-prepared content and online learning activities. The learning activities involve online discussion and collaborative activities.

### Integrated model
Where most of the learning takes place via collaborative online activities and content is largely determined by the learners, either individually or as a group. Learning is very much student centered and highly collaborative.

Other useful models for evaluating virtual learning environments and developing online activities include: Laurillard's Conversational Learning and Gilly Salmon's e-moderating Five Steps Model. Two models of learning that have been developed specifically for learning and teaching with technology are Mayes Conceptualisation Cycle and Laurillard's Conversational Model. A third model proposed by Salmon focuses on computer-mediated communication. Finally we consider the work of Biggs.

## Mayes: The Conceptualisation Cycle
Mayes states that learning with technology involves a cycle of conceptualisation, construction and dialogue. In an article written by Mayes &Fowler, Mayes examines how different learning activities support students' understanding of new concepts and the revision of erroneous concepts. This is achieved in three stages, known as the Conceptualisation Cycle.

- At the conceptualisation stage, students are exposed to other people's ideas or concepts (for example in traditional face-to-face sessions or accessing content on the WWW).
- At the construction stage students apply these new concepts in the performance of meaningful tasks.
- However, it is only at the dialogue stage, in the performance of tasks in which these new concepts are tested during conversation with tutors and peers, that learning takes place. The feedback provided enables students' erroneous conceptions to be resolved.

Mayes suggests that each of the three levels of learning activity can be supported by three different classifications of courseware, or online material intended to promote students learning, into three categories:

## Primary courseware
Primary courseware is used to support, for example, online lecture notes, reading lists etc, which are a good way of giving students information. For example, look in the classroom or library sections of the Health Education Cyber School. Also, if you have access, take a look at the SFEU module on copyright.

## Secondary courseware
Secondary courseware supports students in performing a task. For example, computer assisted assessments in which the student is asked to answer questions. Examples of this include computer-aided assessments or online tests. For example, look at the quiz from the SFEU on copyright.

It is only at the level of Tertiary Courseware where there is two-way dialogue that learning can occur. Examples include online discussions, videoconferencing and shared workspaces where feedback is extrinsic and online simulations. For example look at the Virtual Microscope at the Open University.

It is useful to begin developing online materials at the primary level. However, Mayes stresses that focusing too much on primary courseware will not provide sufficient support for learning. In order to ensure that learners are supported at all three levels of the conceptualisation cycle, a variety of teaching methods need to be within the course design. High level learning will not take place until there is two-way dialogue (either tutor to students, peer student dialogue, or the sort of internal dialogue which may go on within a student's head). This can only take place at the tertiary level-either using courseware or face-to-face methods of learning which are integrated with technology enhanced teaching. Although it is useful to begin by developing primary courseware, it is important for tutors not

to stop at this stage but to continue development to the level at which student learning can occur.

## Laurillard's Conversational Model

Professor Diana Laurillard, Chair of Learning with Digital Technologies at The Institute of Education, University of London, and formally of the Open University in the UK, is one of the leading researchers in the application of technology to learning and teaching. Laurillard developed a conversational model, based on earlier theories of Vygotsky, in which dialogue between tutor and student is seen as central to learning. Laurillard stresses that, for higher level learning, dialogue must take place at both a theoretical and practical level. This not only enables students to link theory with practice (which is sometimes difficult to achieve in many subjects), but also allows the tutor to evaluate whether or not he or she has set appropriate tasks for the student.

One of the major characteristics of this model is the way in which the student and tutor interacts. In face-to-face teaching, many of these interactions are so spontaneous and intuitive that they can be overlooked in the design of technology supported teaching. Therefore Laurillard made these interactions explicit. Technology can support these interactions in the following ways. It can be:

- Narrative this involves the telling or imparting of knowledge to the learner.
- Interactive-this is based on the outcome of the learning. The tutor provides feedback to students based on the outcomes of tasks students undertake in order to help consolidate learning and improve performance.
- In addition, the tutor uses this information to revise what learning has occurred and, if necessary, change the focus of dialogue (adaptive).
- Communicative/discursive-the tutor supports processes where students discuss and reflect upon their learning.
- The tutor and student agree learning goals and task goals, which can be achieved using 'productive' media, such as online presentation.

## Gilly Salmon: 5-stage model and e-Moderating

For computer-mediated communication (CMC), Salmon has proposed a highly practical five-stage model based on her own research (see table below). The first two stages of Salmon's model focus on acclimatizing the learner to the online environment and developing a supportive social environment. The third stage 'information exchange' is characterized by learners interacting with course materials and activities online and providing each other with further resources. In the fourth stage, 'knowledge construction', we see learners working collaboratively sharing ideas, posing problems and challenging each other in a spirit of enquiry. The final stage leads participants to take responsibility for and reflect on their own learning. The role of the tutor-the moderator-is essential to the design and implementation-supporting, encouraging, focusing to ensure all learners meet the intended outcomes.

| Stage 1: Access and motivation | For this first stage, it is critical that the tutor ensures that the learner can easily and quickly access the online conference, often in a VLE. Usually this will be to ensure there are no technical problems, for example, with passwords. Technical support is critical at this stage as the learner can easily become frustrated. Simultaneously the tutor needs to ensure that the learners understand the need to put time and effort into the online activity. All the learners will need to know why they are accessing the online conference and what they can receive from it |
|---|---|
| Stage 2: Online socialisation | During this stage, learners need to become comfortable in the online environment and to socialise with each other. There are a number of barriers which may inhibit this. <br> • The embarrassment of making a mistake in front of other participants. <br> • The text-based nature of CMC can be daunting. <br> • It is a new and strange environment for many. <br> • Lack of non-verbal and visual cues. Salmon in 'e-tivities' provides a number of online activities that can help new learners in the online environment become comfortable and ready to talk and collaborate online. It is essential to create an environment where learners feel respected and show respect to each other. Salmon states that this stage is over when learn learner have started to share a little about themselves on online. |
| Stage 3: Information exchange | Usually this stage of the conference is characterized by the fast and furious exchange of messages. The learner will interact with the resources in the VLE such as weblinks, databases, case studies and fellow learners. One of the issues at this stage is information overload and some learners complain about the messiness of the conference. The role of the tutor is to give some structure and to keep things organised. It is critical that the tutor does not respond to all messages at this stage but summaries and focuses the online discussions. Some learners at this stage may move away from the 'social' stage but it is essential that it remains for some, for example, through an online student cafe area where students can discuss without the tutor |
| Stage 4: Knowledge Construction | The main focus is building an online community focusing on learning, at this juncture. The tutor will be relating messages back to concepts and theories and encouraging other learners to respond. The tutor will be summarising but also moving the group along to new subjects and topics when appropriate. At this stage, the tutor may also be sharing the leadership with learners. |
| Stage 5: Development | It is at this stage where we clearly see Salmon's link to constructivism. The online learners are taking responsibility for their own learning and becoming more confident and critical thinkers. The focus is on high-level learning with the tutor encouraging the learners to discuss concepts and ideas at a deeper level. |

## Constructive alignment: John Biggs

John Biggs' idea of constructive alignment (Biggs, 1999) has been one of the most significant in learning and teaching in tertiary education. This approach asks: 'What do we (as the tutor/s) want students to be able to do as result of learning? The basis of this concept is that learners construct their own learning through appropriate activities. Therefore the role of the tutor is to develop a learning environment which can support the activities that assist the learners to meet the desired outcomes. In other words: 'How can we as the tutor/s align the planned learning activities with the learning outcomes?'

Success is dependent on the alignment of:

- The curriculum.
- Intended learning outcomes.

- Teaching methods used.
- Assessment tasks.

The alignment process involves:
- Defining the intended outcomes selecting teaching/learning activities likely to help and encourage students to attain these outcomes
- Engaging students in these learning activities through the teaching process
- Assessing students' learning outcomes using appropriate assessment methods.

(The Higher Education Academy, 2002) There are a number of resources on Biggs' work on the website of the Higher Education Academy. These can be found by searching the resource database. The Higher Education Academy's subject centre for engineering also has a very pragmatic introduction at: http://www.engsc.ac.uk/er/theory/constructive_alignment.asp
It is therefore essential when you are developing your course in a VLE to focus not only on developing materials but on the learning activities that will help assist your students' learning and meeting the learning outcomes of the course.

## Conclusion
Now a days the modern technology has become not only part of education but the heart of education. Education institutions have invested in learning technologies, so expectations increase for traditional learning and teaching systems to adapt and change. VLEs are the most common ICT technology that is used world-wide nowadays to support traditional learning in education institutions. There is need to do much work to how to support and manage the change to a successful implementation of a VLE in education institutions. Academics are unlikely to simply accept the VLE as imposed from the top without real opportunities for debate and negotiation. Resistance to change could present a great challenge to the effective implementation of VLEs. A carefully designed change management program could help in reducing or even overcoming the resistance. The implementation plan should be sensitive to the different needs of departments and users with different VLE adoption targets that departments are required to meet, along with different training programs reflecting the broader objectives of the change management process. So educational institutions should apply these models to make teaching-learning more effective.

## References
1. Areej, Alhogail A, Mirja Abdulrahman A. Implementing a virtual learning environment (VLE) in a higher education institution: A change management approach. Journal of Theoretical and Applied Information Technology. 2011; 31(11):42-52. Retrieved from ww.jatit.org.
2. Alonso López *et al*. "Learning to research" in a Virtual Learning Environment: a case study on the effectiveness of a socio-constructivist learning design. Retrieved on 08/02/2019 from eprints.ucm.es.
3. Beller M, Or E. The crossroad between lifelong learning and information technology: a challenge facing leading universities. Journal of Computer Mediated Communication 1998, 4.
4. Chou, Shih-Wei, Liu, Chien-Hung. Learning effectiveness in a web-based virtual learning environment: a learner control perspective. Journal of computer assisted learning, 2005; 21:65-76. Retrieved on08/02/2019 from www.anitacrawley.net/Articles.
5. Effective Use of VLEs: Introduction to VLEs. Retrieved from www.jiscinfonet.ac.uk.
6. Holyoke, Micheal. Virtual Learning Environment (VLE) or managed learning Environment (MLE), 2011. Retrieved on 08/02/2019 from http://whatis.techtarget.com.
7. Sneha JM, Nagaraj GS. Virtual Learning Environments- A Survey. International Journal of Computer Trends and Technology (IJCTT). 2013; 4(6):1705-1709. Retrieved from http://www.cttjournal.org.
8. Learn about Virtual Learning Environment/courses management system content. Retrieved on 08/02/2019 from globe.orp.com (Oxford University Press)
9. O'leary, Ros. Virtual Learning Environment. Retrieved on 08/02/2019 from www.alt.ac.uk.
10. Ramboll, PLS. Studies in the Context of the E-learning Initiative: Virtual Models of European Universities, Management for the European Commission, 2004. Retrieved from http://www.elearningeuropa.info/extras/pdf/virtual_models.pdf
11. Virtual learning Environment, 2015. Retrieved on 08/02/2019 from http://whatis.techtarget.com.definition.