
Virtual and Blended Learning- Challenges, Its Impact & Ensuring Quality of Learning

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Abstract

There has been an increasing worldwide demand for online learning platforms in recent years. According to experts, this demand is expected to grow exponentially from 100 million students currently to 250+ million by 2025. Innovations and technological developments in recent years have brought about significant changes in the overall education landscape particularly in higher education. Virtual and Blended Learning have explored new directions, where the roles of students, instructors, administrators are changing fast. This paper talks about virtual & blended learning- addressing some challenges, its advantages & impact on teaching learning, possible solutions towards quality improvement of online learning. A survey based comparative review of various features of popular existing virtual & blended learning platforms is also presented. This review is based on the surveys carried out on faculty & students. Each platform was first put to use for students & instructors. Users rated their experience of using the platform & features available on a scale of 5. Proposed survey can be useful for both students & instructors who wish to use one of the platforms and needs some clarity on various features.

Keywords -Virtual & blended learning, Online learning, Teaching learning.

Introduction

Today online learning tools are one of the fastest growing trends in higher education domain particularly in engineering studies. According to experts online education may soon surpass the traditional face-to-face learning (Means *et al.*, 2010). Changes are visible in the way higher education is being taught today and in the way students are learning. Though the classroom teaching will continue to form the bedrock of higher education systems, it will be supplemented by the integration of new tools and pedagogies. With the use mobile technologies like tablets and cellphones that allows quick information access, virtual & blended learning modes has been an integral part of IT enabled learning techniques (Marc, 2001).

For some time now, virtual learning systems like A *virtual learning environment(VLE)* have emerged as one of the most important & effective learning methodologies in education theory and practice (Weller, 2007). A virtual learning environments (VLE) are internet enabled web-based platform learning platforms. It is expected to enable

students of age groups & learning styles to receive the best of education (Williams and Fardon, 2005). However the issues like plagiarism, duplication, quality of teaching material, validation of concepts etc will always pose some challenges to learning.

Blended learning techniques are fast becoming a common and effective approach. Blended learning is a mixture of face-to-face & online learning. Blended learning is also known as 'hybrid learning' or the 'flipped classroom'. Blended learning approach integrates instructor-led training (ILT) with online learning. It uses a learning management system (LMS) for at least some part of the learning content and instruction should be delivered through online channels. The classroom requirement in the blended learning is quite different.

Challenges

1. Engaging learners and trainees with same kind of focus as in physical classrooms can be a major challenge (Ophir *et al.*, 2009). With some much of available information & web contents, learners tend to become little relaxed & thus distracted during online learning.
2. When you are a part of a conventional classroom, the mere presence of other learners does have an impact on your attentiveness & desire to prove yourself. You are always aware of your presence & some spirit of competition always drives you in classrooms. This environment is missing with virtual mode of learning. Although blended learning approach does try to create a similar kind of environment though online mode, but the real impact will be missing.
3. As learner you must be technology savvy to utilize all the benefits through blended learning platforms. IT literacy can serve as a significant barrier for learners (Alexander, 2010). However the technology is reaching fast to each doorstep particularly through mobile based solutions and this may not be a real challenge in the time to come.
4. With the availability of so many players online, presentation of same subject contents in varied forms & quality is again a matter of huge concern. Before the advent of such online methods, learners used to have an idea regarding the availability of standard books & study material primarily through their instructors or prescribed syllabi. Online learners have the option to refer to different sources without understanding the subjective requirements.
5. Blended learning to be successful needs proper planning & preparation. Moreover these tools need to be user friendly, reliable and up to date in respect of technology. It must be bundled with rich set of features for a meaningful impact on the learning experience (Garrison, 2004).
6. In a study performed across four different universities, it was found that only 50% of the students watched the lecture videos on a regular basis (Gosper, 2008).
7. Instantaneous feedback & assessment from students during conventional classroom teaching has no replacement (Rachel, 2016). Feedbacks through online modes can be time consuming and misleading at times.

8. Access to network infrastructure is yet another issue. Although the digital divide is narrowing as the Internet becomes more pervasive, many learners particularly from growing economies do not have access to the Internet – even in their classrooms.
9. A learner's experience in the conventional classroom depends on how well the teaching style fits with their individual learning style. If the resources available online suits to their learning style, students may prefer not to attend lectures (Bromage, 2003), preferring instead to access lecture materials online and to carry out their studies from the comfort of their homes (Boyle *et al.*, 2008).

Benefits & its impact

1. One of the advantages of virtual learning is that it allows the instructor to monitor & interpret the activities that students carry during their learning, which are not normally visible to us in the 'traditional' classroom. This enables better understanding of the students' learning. The instructor can log in to monitor course review, assignments view, forum view, discussion view and see what assignments or projects their students have uploaded and when they did so, or what their students have not uploaded by a certain time or date. Learners can learn at their own pace.
2. Self-paced or asynchronous learning: Each learner is different, some comprehends new knowledge faster, while the others need some more time. As the learning materials are accessible 24/7, every student can learn at their own pace and as per their convenience.
3. Student communication and collaboration: Blended learning creates a classroom like scenario acting as a collaboration centre, where the learners can quickly communicate and concentrate their efforts on the most important points. The instructor is able to accumulate immediate response and channel the instructions in the right direction.
4. Instructor can apply many online tools like drawing tools, use of graphical analysis, quizzes etc. to engage the learners in much effective and meaningful manner.
5. Progress tracking, grading and analysis: Instructor can keep a track of each learner's progress, provide help to each at any time, communicate with him, analyse his performance. Monitoring the students at such a detailed level is not possible with classroom teaching.
6. It helps overcome the limits of geography and time, reaching trainees who otherwise cannot participate. Blended learning provides the flexibility necessary for participants to learn, when and where they are ready to learn (Simon, 2015).
7. Improved outcomes: blended learning can also lead to improved course outcomes, higher student retention and improved results. It has been observed that blended learning also encourage traditional non learners, although it may not improve attainment.
8. VLE has enabled the educationists from all over world to share their learning, thus contributing to the overall enrichment of the subject contents.

Addressing the issues & challenges for Quality improvement

Understanding your learner

Before designing the course contents it is very important to develop a clear understanding of the learners (Angelino, Williams & Natvig, 2007). All learners are unique, and so is the way they learn. A sense of learners's prior knowledge and technical competency will always help the instructor to tailor the instructions accordingly. A simple way to gain these insights includes asking students to complete an online survey, concept inventory, or pre-assessment. I strongly believe that content developers need proper training & needs to follow a set of standard practices and tools while designing an online course.

Collaborative & Interactive Learning

Experts believe that teaching learning is more effective when students collaborate rather than working independently (Means *et al.*, 2010; Schutte, 1996). Students can collaborate online through synchronous and asynchronous discussions and group assignments. You cannot expect quick response & same participation from all learners. Many prefer to take their own time to solve the assignments. However the same learner may work very effectively in groups or during collaborative learning (Kassop, 2003).

Designing the contents in logical modules, where each module is organized around a major topic and contains relevant objectives, material, and associated activities. Many of us will learn better and faster with the help of interactive media that incorporate images, graphics, videos and audio elements. Therefore, teaching methodologies & tools used for online learning must cater for individual ways of learning.

According to Palloff and Pratt (2013), an effective online instructor provides control of the learning process by helping the students to become active participants. In learner-centered approach the instructor's role is more of a facilitator, students are given more control and responsibility around how they learn, including the opportunity to teach one another through collaboration and personal interactions (Palloff & Pratt, 2013). Self-monitoring enables the students to spend more time on unfamiliar or difficult contents (Aslanian & Clinefelter, 2012).

Quality needs standardization & continuous evaluation. Quality also needs to be rated & certified. With huge explosion of information on the web, time has come to evaluate, validate & certify the learning material on web. There has been little attention given to developing processes to formally recognise the skills and knowledge acquired from these new forms of learning. This will be helpful in promoting credibility to these forms of learning, instil confidence in the quality of the learning outcomes. As of now, user views & ratings are the only means of certifying the popularity and acceptance of online contents. Although this seems to be fair enough, however when it comes to learning, rating of the courses by experts will be beneficial for ensuring quality. Strengthening quality assurance procedures is also required.

Policy makers & educationist needs to sit together to develop a transparent framework to cater the technological and social challenges in the successful implementation of the online learning system. National frameworks will provide a blueprint for institutional action. Strategic planning of financial, technical and human resources, course scheduling, and tutor and student support is required for better quality. The true benefits will not be visible if the developments are not far reaching & technology is limited to only few.

Low cost of Infrastructure implementation & availability high speed internet is essential for ensuring the quality of online education. Contribution to learning cannot be confined to only few. In-fact the reason for its greater impact in recent times is primarily because of the increase in participation level at different levels. Assuming that quality teaching is just confined to well known institutions is a great myth.

There is a need for greater cooperation among institutions and across borders for implementing digital learning strategies, providing infrastructural supports and frameworks for pedagogical training. It is quite encouraging to see number of platforms, portals and repositories that have been already developed and are in use. Even the small institutions can easily reach out to other institutions seeking their expertise implementing digital platforms.

Availability of skilled instructors having attributes necessary to use these new technologies, ability to incorporate them into course delivery, is essential for successful implementation and expansion of online learning opportunities. Quality of subject contents & delivery is completely dependent on these instructors. Like active learner, the instructors himself must involve in active teaching. Instructor must ensure that he or she is active in responding to the query of students at any point of time. Instructor and learners need to be part of an active network where each can participate & share the thoughts related to a ongoing course. Such an arrangement can be easily created through various means like online chatting groups or messenger apps etc.

Awareness among students to use digital platforms is most important. It is well established that many of the students who are not using these digital learning platforms, actually are not aware of such learning methods. Moreover, proper training is also required to help them in using such platforms.

Data protection and privacy issues have always been a major concern. Existence of conflicting data protection rules in different countries can disrupt international exchanges. Learners may not be interested in sharing their personal data outside if they were uncertain about the level of protection in other countries.

Comparative review of features for popular online learning platforms

This comparison is based on review given by 50 users including students & faculty. Users have given their review based on their experiences of using these platforms. User experiences have been rated on a scale of 1 to 5. Value 5 being rated highest & 1 being rated lowest.

Table 1: Comparison of various features w.r.t. existing popular blended learning platforms

Features Vs Popular Tools	Answer Pad	Buncee	Edmodo	Edpuzzle	GoClass	Kahoot	LessonPaths	otus	Lesson Paths	Moodle	TalentLMS
Create virtual classrooms	3	5	5	5	5	3	5	4	5	3	4
Create lesson plan	4	5	5	5	5	5	5	4	5	3	3
Invitation to students via group or individual mail	5	5	5	4	5	4	5	4	5	3	2
Add Quizzes, assignments etc?	5	4	5	1	5	2	5	4	5	3	5
Creation of Presentation/animation?	2	5	4	1	4	2	4	4	4	2	5
Logs & Instant Reports?	4	4	4	2	4	2	4	3	4	2	4
Progress Monitoring?	5	5	5	4	4	3	5	3	5	3	2
Create student groups	5	5	4	5	4	5	4	5	4	2	3
Add multimedia. Attach images, audio, videos etc?	1	5	5	4	5	4	5	4	5	3	4
Record lecture. Edit video lecture?	1	4	5	2	3	1	4	4	4	2	2
Writing & Drawing tools?	2	5	5	3	3	4	5	4	5	3	3
Digital storytelling feature?	2	5	3		3	3	4	3	4	2	1
Mobile support	5	5	3	2	3	4	4	3	4	3	2
Create Portfolio	4	5	4	2	3	4	5	4	5	2	5
Teacher dashboard	5	5	5	1	3	3	5	4	5	2	2
Resource Library	4	4	5	4	2	5	5	4	5	2	3
Content broadcast to all learners	5	5	4	4	5	4	3	2	3	2	4
Integration of YouTube, other online platforms	0	5	5	5	5	2	2	1	2	1	5
Share contents on cloud, drive, social platforms	5	5	5	5	5	5	5	4	5	4	4
Self review of answers	2	4	4	4	5	4	4	3	4	3	3
Live monitoring?	4	5	4	1	3	4	4	3	4	3	3
Pricing (with # licences)	3	2	1	3	4	1	2	1	1	0	4
Adding class, group import facility in CSV/XIS/from Google	0	5	5	5	5	5	5	4	5	3	4
Open Source	0	4	5	4	5	5	5	4	5	3	3
Earn badges	0	4	3	4	4	4	4	3	4	2	4
Download learning contents?	5	5	5	4	3	3	4	3	3	0	4
Integrate with Google classroom	0	5	5	4	2	4	4	3	4	1	4
Integration of animation	0	5	3	4	5	1	3	2	3	2	4
Overall IDE experience	3	5	5	5	5	2	4		4	3	5
Allow Students as Content Producers	3	4	4	4	4	2	4	3	4	3	3

game-based learning	0	4	3	1	3	1	5	3	5	3	4
Create online Surveys	0	4	4	4	4	2	5	3	4	2	4
Team mode	0	3	4	3	2	4	5	3	5	3	5
Average Scores	2.6	4.5	4.3	3.4	3.9	3.2	4.3	3.3	4.2	2.4	3.5

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