E-learning platforms: The future of education

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Abstract. In many countries, the use of e-learning platforms has become increasingly popular. E-learning platforms typically enable the creation of "virtual classrooms" where teachers can distribute learning materials and conduct tests. Additionally, many of these platforms facilitate collaborative learning and allow students and teachers to communicate with each other. As these platforms become embedded in the curriculum, their use is becoming common place. The use of e-learning platforms, however, has led to an increase in the amount of personal data available about students. These data range from information about the way electronic teaching materials are used and how tasks are fulfilled, to class participation and other educational activities. The more the teaching is based on virtual classrooms or electronic devices, the more specific and detailed digitized data about students and their behaviour and performance will be generated. Overall, traditional learning is expensive, takes a long time and the results can vary. The importance of e-learning is now a given fact and it can offer an alternative that is much faster, cheaper and potentially more effective. This paper aims to be easy to read and understand by proving the importance of using e-learning platforms in higher education.

1. Introduction

E-learning is a general term used to refer to a form of learning in which the teacher and student are separated by space or time where the gap between the two is bridged through the use of online technologies. [1]

In essence, E - Learning is a computer based educational tool or system that enables you to learn anywhere and at any time. Today E - Learning is mostly delivered though the internet, although in the past it was delivered using a blend of computer-based methods like CD-ROM.[2]

Many organizations and institutions are using E - Learning because it can be as effective as traditional at a lower cost. Developing E - Learning is more expensive than preparing classroom materials and training the trainers, especially if multimedia or highly interactive methods are used. However, delivery costs for E - Learning (including costs of web servers and technical support) are considerably lower than those for classroom facilities, instructor time, participants travel and job time lost to attend classroom sessions.

E - Learning can offer effective methods, such as practicing associated feedback, combining collaboration activities with self-paced study, personalizing learning paths based on learners needs and using simulations and games. Further, all learners receive the same quality of instruction because there is no dependence on a specific instructor. [3]

The basic elements of an E - Learning process can be identified as: technological infrastructure, E – Learning platform, E – Learning content and participants. The two major perspectives/aspects of E – Learning are technological and pedagogical. The technology including the infrastructure and the platform should enable development, hosting and delivery of e – learning content for its users.[4]

This paper will specifically address the part of the e-platform. Explaining the way of working through the example of collaborative E - Learning and E - Working platform released under the GPL open-source license called Claroline.

A global marketplace of e-learning platforms has emerged to help education authorities provide enhanced educational services and improve outcomes for children and youth. A growing number of educational authorities are using these platforms to support the delivery of education in the classroom, and to gain a better understanding of student learning needs.

Some of these e-learning platforms and the learning analytics they facilitate have enormous capacity to foster the development of innovative and effective learning practices. At their best, they can enhance and complement the interactions of students, parents and educators in the educational environment and help them fulfil their respective potential. Nevertheless, e-learning platforms may pose threats to privacy arising from the collection, use, reuse, disclosure and storage of the personal data of these individuals. [5]

2. E – Learning Platform

An LMS (Learning Management system) or E – Learning platform is a software including a range of services that assist teachers with the management of their courses. The E – Learning platform is a computing device that groups several tools and ensures the educational lines. Across dedicated platforms to the ODL (open and distance learning), all conduits are preserved and expanded for the learner, tutor, coordinator and administrator, etc. within the E – Learning platform.[6]

Most LMS systems are using web-base platform to facilitate "anytime, anywhere" access to learning content and administration. Most of the LMS application allows for student registration, the delivery and tracking of E – Learning courses and content, and testing, and may also allow for the management of instructor – led training classes. The LMS also allow for learner self-service, facilitating self-enrolment, and access to courses. [7]
Generally LMS can be categorized into two categories which are Open Source LMS and proprietary LMS.

The most popular Open Source LMS is Claroline that is free. The advantages of OSS are that it is free and can be adapted and extended to meet one's own needs. More important, the advantage to educational institutes is that what they can obtain by applying OSS is to profile E-Learning according to a clear vision of the educational methods one plans to apply.
It should be mentioned, that a free E-Learning platform is a software which the use, the study, the modification and the duplication with a view to release or diffuse it are permitted, technically and legally.[8] This is to ensure certain freedoms that are induced, which include the program's control by the user and the possibility of sharing between individuals.[9] These rights may simply be available or established by a license, called "free" based on copyright.

The general principle of the operation of an E – Learning platform LMS and the key features are associated with the main actors: learner, teacher, tutor, coordinator and administrator.

The learner can consult and/or download the resources placed at his disposal by the teacher, make its learning activities while following his progress in training. The teacher, who is responsible for one or more modules, creates and manages the educational content he wishes to broadcast via the platform. It can also build tools for monitoring learner's activities. The tutor accompanies and monitors each learner in having at his disposal the tools that needs to communicate, collaborate and animate discussions. On its side, the coordinator ensures the management of the overall system. Finally, the administrator is responsible for the customization of the platform benefiting the rights of the administration thereunder (system installation, maintenance, access management…) [10]

2.1. Key benefits of learning platforms

The cost of providing a learning platform is relatively low, especially cloud – based systems that require little or no support and maintenance. For this minimal investment, schools can reap a wide range of benefits such as:

Improved organization and communication

Efficient and effective communication is essential for the success of a school. Learning platforms help schools improve communication by promoting the use of a wide variety of modern communication tools such as cloud email, internal messaging, project spaces and blogs.

More opportunities for independent and personal learning

Learning platforms give every teacher the opportunity to place a wide variety of learning resources at their students' disposal. The courses in its learning for example, enable the distribution of

learning materials tailored to meet the specific needs of each student, and enable these materials to be assigned, collected and (in some cases) automatically marked.[11]

Enhancing quality and range of learning resources

By giving teachers simple and quick access to a range of digital tools, learning platforms enable them to expand their repertoire of learning resources and exercises – making teaching more engaging, fun and motivating for learners. It's also possible to link these activities to the curriculum, using tools that match activities to specific learning objectives and curriculum goals.

Increased opportunities for collaboration and interaction

Learning platforms offer teachers and students a simple way to collaborate on projects and coursework. Teachers can use a learning platform to share resources, lesson plans and tests with other teachers, not only in the same school, but also in the same local authority or further afield. For example, the library function in its learning allows teachers to make, save, search for and share resources with any other teacher using its learning, regardless of location. For students, a learning platform offers a variety of collaborative opportunities through project pages, video conferencing, messaging and blogs. And, because most learning platforms are available 24/7 from any internet-enabled device, users can work together whenever and wherever they like.

Enhancing digital literacy

Computers are no longer reserved for IT programmers, and many of today's jobs require employees to have reasonably advanced computer skills. For teachers, learning platforms enable them to include these skills in their courses, regardless of the subject. Discussion forums, for example, offer a safe space where students can discuss topics online, from English set texts and math problems to the merits of closed-circuit TV cameras. Many schools also run professional development programmes through their learning platform, giving teachers access to numerous courses in their school and at partner institutions.

Improved management of student behavior and attendance

The reporting tools in learning platforms enable schools to better record and track data on student attendance and behavior – and they also help the school share this information between teachers, school managers, parents and learners. The reporting tools in its learning, for example, enable teachers to easily track attendance and behavior, and pass the reports to department heads or head teachers. Once approved, these reports can automatically be made available to parents or students through their individual dashboards, ensuring that everyone has access to the latest information.

Building the school identity and community

By empowering students to create and share their own resources, and giving them a space to voice their opinions, learning platforms help increase both a sense of community and democracy. For example, survey or poll tools can be used by a head teacher or class teacher to quickly gauge student opinion on a topic. Discussion forums are also valuable for encouraging deeper opinionated discourse in a safe, school-monitored environment. This information can then be used to make changes to the school or class.

Learning platforms are likely to play an increasingly important role as more and more teachers and schools look to further develop their use of ICT in all subject areas.
By offering communication channels, pedagogical tools and course and school management systems, the best learning platforms give teachers and students a single gateway to using technology both in and outside of the classroom.[11]

3. Claroline

Claroline is an open source platform that gives users the freedom to create their own online classroom. With Claroline teachers can produce assessment activities, post and collect assignments, build a wiki, monitor student activities, and create chat rooms or discussion forums. Claroline is

available as a free download for Mac, Windows, and Linux systems. Claroline is not a hosted service so you do need to have someone host your installation of Claroline.[12]

Lectures using Claroline allow building effective online e-learning and collaborative activities on the web. Claroline is used in more than 80 countries and translated into 35 languages.
The Claroline is based on free technologies like PHP and MySQL and uses the current standards like SCORM for the exchange of contents. Claroline provides a list of tools enabling the lecturer/teacher to write a course description, publish documents in any format (text, PDF, HTML and video), administer public and private forums, create groups of students, prepare online exercises, publish announcements, see the statistics of the users activity and use the wiki to write collaborative documents.[7]

The Claroline platform is organized around the concept of spaces related to a course or a pedagogical activity. Each space provides a list of tools that enable course manager to create learning contents, manage training activities and interact with the students. Some of the tools provided by Claroline which help lecturers to manage the class are:

- *Manage Document and Links*
  The Administrator can publish their documents; create directories and sub-directories to gather files and create hyperlinks and build their own HTML pages.
- *Create Online Exercises*
  Claroline LMS allow administrator to create exercises with a list of questions, elaborating different types of questions and tracking the results of the users. The administrator can also set exam with maximum time and attempts allowed for their students.[7]
- *Organize: Agenda And Announcements*
  Claroline LMS allows administrator to add events in the course calendar, showing the complete calendar and displaying the events from all courses, attach to an event a link to other tools of the course or to an existing resource, write an announcement which will be displayed on the course homepage and send an announcement by e-mail to a user or a group of users.[7]
- *Supervise: Users And Statistics*
  The Claroline LMS allows the administrator to follow the access to the platform and supervising the progression of the users.
- *Coordinate Group Work*
  The Administrator is allowed to create several groups of users enrolled in this course, define the registration settings, provide own tools for each group and facilitate the collaboration between users during group work.[7]

4. Future works and trends

E-Learning is present in the society and business for several decades and is here to stay. It might seem as simple process of delivering learning materials and examining the proficiency and/or knowledge by electronic means but the development and flexibility of the Information Technology enables many different approaches and implementation of new methods regarding the process of learning helped by the technology and we can consider that it is still evolving. As the technology develops and some best practices are confirmed certain aspects and tools are adopted and widely used by many institutions and business. Some of the established and emerging trends include but are not limited to:[4]

- *Further integration and cross - system collaboration*: allowing learning materials to be shared between schools without proprietary formats restricting use.
- *Further development of education specific social media tools*: helping to create a safe, school- controlled online community.
- *Closer ties between data management information systems and learning platforms:* enabling better reporting between teachers, administrators and parents.
- *Increased use of advanced assessment systems:* helping teachers and students visualize teaching and learning, and plan classes more effectively.

- *Increased use of blended learning:* providing access to education in a number of ways, including home-based learning, distance learning and classroom instruction.

5. Conclusion

Since the first pioneer systems till present days e-learning significantly evolved in parallel with the development of the Information and Communication Technologies. The real growth and development of the e-learning technologies and methodology started after the introduction of the Web and still is developing coping with the new challenges.[4]

Although it cannot replace traditional education, the internet opens new teaching-learning-assessment opportunities. The information obtained in this manner, the mobility of its use, makes e-learning come up as a completion and continuation of traditional education. Although initially created for distance education, Virtual Learning Environments are at present used as auxiliaries for the traditional didactic activities, known as Blended Learning.

Given that the e-learning has many benefits for both sides in the learning process (trainers and learners) it is widely adopted by the educational institutions (80%), the companies (77%) and the military. On the other side, the learners/students also turn to e-learning where 32% of regular students take at least one online course.

The e-learning market is widely diversified with more than 500 Learning Management Systems available where none of them holds more than 10% of the market share. Since the market is still growing this suggests that there is still space for new entrants. Regarding the e-learning tools used there is variety of them that support both synchronous and asynchronous learning like video conferencing, virtual classrooms, webinars, presentations, videos, audios, graphics, texts, wikis, blogs, chat rooms etc.[4]

This paper reveals the enormous importance of e-learning and explains the basics of e-platfoms. It also points out the benefits of using them. The closing deck indicates which future trends will change the style of education forever. What was once a vision today is part of our daily lives. For more information on this type of education, it is recommended to research and read more papers of this type.

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