

# Chapter 82

## eLearning X.0: Are Learning Management Systems Ready?

**Mohamed E. Edrees**  
*University of Bahrain, Bahrain*

### ABSTRACT

*Web technologies evolved from Web 1.0 in early 1990s to Web 3.0 nowadays. Alongside Web technologies, eLearning has been evolving from eLearning 1.0 to eLearning 3.0, which integrates the Web X.0 technologies and tools into educational and institutional practice resulting in eLearning X.0. Universities and schools are investing substantial amounts of time and money in implementing Learning Management Systems (LMS). If not designed with eLearning X.0 support in mind, the LMS can pose difficulty for instructors and students to benefit from these technologies through LMS directly. The aim of this study is to evaluate the readiness of learning management systems to support eLearning X.0. This research reviewed the literature for the most common Web X.0 tools or features used in the eLearning process. Then an evaluation model was developed and applied on two respective learning management systems: BlackBoard and MOODLE. The results of readiness evaluation shows that MOODLE is more ready for eLearning X.0 than BlackBoard. The findings of this study provide several important implications for learning management system research and management.*

### 1. INTRODUCTION

Since the first version of web technologies (web 1.0) founded, it were used to deliver content to its users like book wise, but in different media. A few authors provided content to a wide range of audience of relatively passive readers (Zdravkova, Ivanović, & Putnik, 2009). Nowadays, new versions of web technologies were introduced. It resulted out of the advancement of the ICT technologies and its rapid change and development.

Along with this advancement of web technologies, the electronic learning (eLearning) has played an important role in teaching and learning, which has become more and more popular not only in different levels of schools but also in various commercial or industrial companies (Chao & Chen, 2009). According to Ozkan and Koseler (2009), eLearning refers to the use of electronic devices for learning, including the delivery of content via electronic media such as internet, audio or video, satellite broadcast, interactive TV, CD-ROM, and

DOI: 10.4018/978-1-4666-8751-6.ch082

so on. However, with the increasing development of the internet, the concept of eLearning has been completely and generally refer to cases which learning is done through the internet and online courses are offered (Hassanzadeh, Kanaani, & Ela, 2012).

Web technologies evolved from web 1.0 in early 1990s to web 3.0 nowadays. Alongside with the web technologies, eLearning has been evolving from eLearning 1.0 to eLearning 3.0, which integrates the web X.0 technologies and tools into educational and institutional practice resulting eLearning X.0. These new concepts will foster the idea of placing the learner in the center of a more social, personal and flexible learning process (Berlanga, Peñalvo, & Sloep, 2010). Researches stress on the importance of implementing latest eLearning technologies in the learning practice (Blees & Rittberger, 2009; Danciu & Grosseck, 2011; Liu, Kalk, Kinney, Orr, & Reid, 2009; Wang, Love, Klinc, Kim, & Davis, 2012).

Universities and schools are investing substantial amounts of time and money in implementing learning management systems (LMS). If not designed with both eLearning 2.0 and eLearning 3.0 support in mind, the LMS can pose difficulty for instructors and students to benefit from these technologies through LMS directly, and they have to find some workaround to do so.

This research aims to evaluate the readiness of learning management systems to support eLearning 2.0 and eLearning 3.0. The following questions guided this study:

1. What Web 2.0 applications and tools are commonly used in eLearning 2.0?
2. What Web 3.0 features are commonly used in eLearning 3.0?
3. How LMSs are ready for eLearning 2.0?
4. How LMSs are ready for eLearning 3.0?

## **2. EVOLUTION OF WEB**

In early 1990's, web technologies were used to deliver the information to its users like book wise, but in different media. A few authors provided content to a wide range of audience of relatively passive readers (Zdravkova, Ivanović, & Putnik, 2009). This version of web was called web 1.0. Since that, the web technologies evolved a rapid change and development then versions like web 2.0 and web 3.0 was introduced. Nowadays, internet becomes more user centered allowing two-way exchange of information. People become creators of knowledge and materials instead of passive readers or consumers.

The first version of the web, the read-only web, was limited to provide users with platform to publish knowledge content. Documents of type (X)HTML, which contain static information, such as text, pictures and animations, were the core of web 1.0. Those documents usually represented in a tree structure to represent an individual website. Further, hyperlinks were used to connect in hand page with specific information, page or other documents all over the web. Moreover, in read only web, larger number of its users are passive, i.e. they browse and read single websites, offered by a small group of experts, but are not able to add additional information to the web (Ifenthaler, 2012).

The second generation of web (web 2.0), means a qualitative leap in web technologies that has made the internet more creative, participative and socializing. It represents a shift toward a read and write environment, as users can use the web to upload, download, add comments, provide feedback, add tags and actively participate in the creation and management of content and knowledge (O'Reilly, 2005; Ifenthaler, 2012). The technology advancements behind web 2.0 enabled new applications

12 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/chapter/elearning-x0/138360](http://www.igi-global.com/chapter/elearning-x0/138360)

## Related Content

---

### Strategy for Reducing Delays and Energy Consumption in Cloudlet-Based Mobile Cloud Computing: Problems on Mobile Devices, Problem Solution, Selection of Cloudlets According to User Requirements

Rashid Alakbarov (2021). *International Journal of Wireless Networks and Broadband Technologies* (pp. 32-44).

[www.irma-international.org/article/strategy-for-reducing-delays-and-energy-consumption-in-cloudlet-based-mobile-cloud-computing/272050](http://www.irma-international.org/article/strategy-for-reducing-delays-and-energy-consumption-in-cloudlet-based-mobile-cloud-computing/272050)

### Potential Impact of RFID-Based Tracing Systems on the Integrity of Pharmaceutical Products

Michele Maffia, Luca Mainetti, Luigi Patrono and Emanuela Urso (2013). *Advanced RFID Systems, Security, and Applications* (pp. 241-263).

[www.irma-international.org/chapter/potential-impact-rfid-based-tracing/69710](http://www.irma-international.org/chapter/potential-impact-rfid-based-tracing/69710)

### Reverse Cooperatively Routed Wi-Fi Direct in the Advent of 5G Driven Designs

Michał Wodczak (2019). *International Journal of Wireless Networks and Broadband Technologies* (pp. 19-34).

[www.irma-international.org/article/reverse-cooperatively-routed-wi-fi-direct-in-the-advent-of-5g-driven-designs/237189](http://www.irma-international.org/article/reverse-cooperatively-routed-wi-fi-direct-in-the-advent-of-5g-driven-designs/237189)

### Analysis of Bluetooth Versions (4.0, 4.2, 5, 5.1, and 5.2) for IoT Applications

S. D. Padiya and V. S. Gulhane (2022). *Implementing Data Analytics and Architectures for Next Generation Wireless Communications* (pp. 153-178).

[www.irma-international.org/chapter/analysis-of-bluetooth-versions-40-42-5-51-and-52-for-iot-applications/287170](http://www.irma-international.org/chapter/analysis-of-bluetooth-versions-40-42-5-51-and-52-for-iot-applications/287170)

### Quality of Service (QoS) Provisioning in Cognitive Wireless Ad Hoc Networks: Architecture, Open Issues and Design Approaches

Kok-Lim Alvin Yau, Peter Komisarczuk and Paul D. Teal (2010). *Quality of Service Architectures for Wireless Networks: Performance Metrics and Management* (pp. 575-594).

[www.irma-international.org/chapter/quality-service-qos-provisioning-cognitive/40772](http://www.irma-international.org/chapter/quality-service-qos-provisioning-cognitive/40772)