Chapter 8.6

E–Learning 2.0:
Web 2.0, the Semantic Web and the Power of Collective Intelligence

Chaka Chaka
Walter Sisulu University, South Africa

ABSTRACT

This chapter contends that both Web 2.0 and the Semantic Web (the SW) serve as critical enablers for e-learning 2.0. It also maintains that the SW has the potential to take e-learning 2.0 to new frontiers of advancement. Most significantly, the chapter argues that Web 2.0 and the SW provide an ideal platform for harnessing collective intelligence, collective knowledge, the power of the groundswell, the network effect, and the collective power of simulation for higher education institutions (HEIs) in the area of e-learning 2.0. Against this backdrop, the chapter provides, first, a short overview of e-learning 2.0, Web 2.0 and the SW. Second, it characterises the way in which Web 2.0 social software technologies (e.g., blogs, wikis, social networks and virtual worlds) can be deployed in HEIs for delivering e-learning 2.0 for educational purposes. In addition, it outlines the manner in which the SW (in the form of semantic blogs, semantic wikis, semantic social networks and semantic virtual worlds) can enhance

each of these Web 2.0 technologies for deploying e-learning 2.0 in HEIs.

INTRODUCTION

E-learning 2.0 has a lot to gain from leveraging both Web 2.0 and the Semantic Web (the SW). This is particularly so as these two sets of hybrid technologies are the critical drivers of not only e-learning 2.0 but of other forms of today's learning technologies as well. In addition, the SW adds semantic ingredients to the existing Web 2.0 social software applications that underpin e-learning 2.0. Based on this, this chapter explores the uses that blogs and semantic blogs, wikis and semantic wikis, social networks and semantic social networks, and virtual worlds and semantic virtual worlds have for higher education institutions (HEIs). It draws on relevant documented instances and argues that the deployment of blogs and semantic blogs on the one hand, and of wikis and semantic wikis on the other hand, respectively helps leverage collective intelligence (CI) and collective knowledge (CK)

for HEIs in relation to e-learning 2.0. Likewise, it contends that the use of social networks and semantic social networks on the one hand, and of virtual worlds and semantic virtual worlds on the other hand, enables the harnessing of both the power of the groundswell (PoG) and the collective power of simulation (CPoS), respectively.

E-LEARNING 2.0, WEB 2.0 AND THE SW: OVERVIEW

This section offers a brief overview and related multidimensional definitions of e-learning 2.0, Web 2.0 and the SW. It also establishes the nexus existing between the last two instances of hybrid technologies and e-learning 2.0.

E-Learning 2.0

E-learning 2.0 is perceived in three related perspectives here. First, it is an approach that involves virtual collaborative and distance learning leveraged through computer-mediated communication technologies. Accordingly, it enables learners to actively participate in the learning value chain as creators and co-creators of content, and as authors, co-authors and contributors of knowledge by harnessing each other's CI. In this sense, it entails an e-learning 2.0 ecosystem existing within a Web 2.0 universe (Ivanova, 2007) – such as reflected in *Figure 1* - that views a learning space as a medium for personal activities and for communication and collaboration with members of learning communities. Second, it is about Web 2.0 social software technologies and services applied to e-learning (Calvani, Bonaiuti & Fini, 2008; Downes, 2004; Spadavecchia, 2008). In this instance, it is a *loosely coordinated, components* approach that harnesses the synergy of distinct but complementary applications and web services such as blogs, wikis, and other social software tools to support learning. As such, it is a bottom-up and learner-driven peer learning.

Third, it refers to an architecture of learning networks. Such networks are decentralised, distributed, emergent and dynamic. Therefore, it encompasses networked learning. The latter is a learning in which information and communication technologies are employed to foster connections between learners, between learners and tutors, and between learning communities and learning resources.

Web 2.0

Web 2.0 has many and varied definitions. In this chapter, Web 2.0 is understood from four complementary perspectives: transition, technologies, environment and mindset. The transition perspective of Web 2.0 relates to the transitional stage in which the Web has evolved from Web 1.0 into Web 2.0. It also underlines the idea that the Web is in a constant beta version. The technologies view of Web 2.0 refers to the fact that the latter consists of social software technologies (e.g. blogs, wikis, social networks and virtual worlds) and offers value-added services and data. This embodies the environment conception of Web 2.0: the view that Web 2.0 is a social and participation Web environment. The mindset approach to Web 2.0 encompasses the notion that the latter is a *Read/Think/Write* Web and that data, content, and applications/tools are services (see Ullrich, Borau, Luo, Tan, Shen & Shen, 2008). Additionally, it is about the Web as a platform through which the long tail, the network effect, social data and the wisdom of the crowd (WoC) (e.g., users, learners, employees, and customers) can be leveraged. This is the Web connecting end-users in an ecosystem of value additions.

The Semantic Web

Like Web 2.0, the Semantic Web (the SW) has multiple definitions and is often represented through different metaphors. Three such metaphors - Web 3.0, the Data Web, and the Intelligent Web - are

21 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/learning-web-semantic-web-power/41444

Related Content

Digital Literacy in Language Education: The COVID-19 Era of Cyprus
Christina Nicole Giannikas, Dina Tsagariand Trisevgeni Liontou (2022). *Transferring Language Learning and Teaching From Face-to-Face to Online Settings (pp. 189-202).*
www.irma-international.org/chapter/digital-literacy-in-language-education/296861

The Role of Interface Elements in Web-Mediated Interaction and Group Learning: Theoretical and Empirical Analysis
Klarissa Ting-Ting Changand John Lim (2006). *International Journal of Web-Based Learning and Teaching Technologies (pp. 1-28).*
www.irma-international.org/article/role-interface-elements-web-mediated/2959

Writing Bees, Wikis, Problem-Based Learning, and Assessment: Teaching With Online Discussions
Lyz Howard (2023). *Research Anthology on Remote Teaching and Learning and the Future of Online Education (pp. 911-937).*
www.irma-international.org/chapter/writing-bees-wikis-problem-based-learning-and-assessment/312763

Flexible Higher Education Through Swayam
Varun Gupta, Durg Singh Chauhanand Thomas Hanne (2020). *Handbook of Research on Creating Meaningful Experiences in Online Courses (pp. 59-65).*
www.irma-international.org/chapter/flexible-higher-education-through-swayam/238787

Possibilities and Challenges of Online Education in India During the COVID-19 Pandemic
Souvik Sengupta (2022). *International Journal of Web-Based Learning and Teaching Technologies (pp. 1-11).*
www.irma-international.org/article/possibilities-and-challenges-of-online-education-in-india-during-the-covid-19-pandemic/285567