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Integration of Web Services with E-Learning for Knowledge Society

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Abstract

The study aims of creating a knowledge society (KS) through e-learning (EL) with the support of web services. EL system with its elements is the matter of discussion at the beginning of the study. For effective EL system, integration of web services with EL system is essential which is emphasized in the paper. Web 2.0 services such as blogs promote the content creation, assessment and evaluation, wikis makes the user enable of creating editable contents in the form of highly searchable knowledge-bases. Group work, Question & Answer (Q & A) sessions are performed by social networking and discussion forums. RSS feeds, Tags, Podcasts and Videocasts are considered as supporting services to speed up the knowledge management process. Web 3.0 services can apply artificial intelligence (AI) technique to speed up the teaching/learning process. The integration is expected to create the KS and the global knowledge warehouse

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1. Introduction

E-Learning (EL) is just-in-time education providing individualized, comprehensive, dynamic learning content in real time thus intensifies communities of knowledge, linking learners and instructors with experts. EL aims at replacing old-fashioned time/place/content predetermined learning with a just-in-time customised/on-demand process of learning. It builds on several pillars, vis. management, culture and IT (Maurer and Sapper, 2001) [13]. The incorporation of web technology in the pedagogy of EL can create communities of practice where the community knowledge creates the knowledge society (KS). The second phase of EL provides collaboration, much improved interaction between users to build up individual as well as organizational knowledge and skills. From this collaboration community or societal knowledge is produced. Web services play significant role in collaboration to give a new essence to teaching and learning. Most of the web 2.0 tools and technologies is widely used in EL system to allow the learners to create personal learning environment (PLE), and social network. Web 2.0 refers to the social use of the web which allows people to collaborate, to get actively involved in creating content, to generate knowledge and to share information online (Grosbeck, 2009) [7]. In addition, in 2004, Web 2.0 appeared as a new vision of the web which considered the user not a simple consumer of information but as a potential producer of the web content (Osguthorpe & Graham, 2003) [15]. The services of next generation of web i.e., web 3.0 supplements web 2.0 by using AI techniques. In short, web 3.0 is the concept of next evolution of World Wide Web about linking, integrating, and analyzing data from various sources of data to obtain new information streams. Also, Web 3.0 aims to link devices to generate new approaches of connecting to the web by several machines and exchanging data among machines (Bratt, 2004) [3]. This paper presents an idea of integrating web services with EL to create knowledge society (KS).

2. The E-Learning (EL) System

EL is defined as the learning activity utilising information transfer and knowledge utilisation with particular attention to computer-based technology. EL is also defined as the use of information and computer technologies (ICT) to develop learning experiences. It is an inclusive term that describes educational technology that electronically or technologically supports learning and teaching. "EL is just-in-time education integrated with high velocity value chains. It is the delivery of individualised, comprehensive, dynamic learning content in real time, aiding the development of communities of knowledge, linking learners and practitioners with experts" (Drucker, 2005) [5]. EL may either be synchronous or asynchronous. Synchronous learning takes place in real-time, with all participants interacting simultaneously, while asynchronous learning is self-paced and allows learners to exchange ideas or information without the participation of other learners at the same time.

Gradually EL becomes an essential part of education since it is identified as a positive and creative way for learning communities. With the help of different EL tools communities are reconnected (through internet) for learning (through the availability and production of online learning resources). With the incorporation of digital media into teaching/learning the learning environment is turned to virtual classroom which is termed as virtual learning environment (VLE). It provides any time/anywhere learning irrespective of geographical constraint. To fulfil the educational needs, the essentiality of EL is stated as follows,

2.1 Essentiality of E-Learning (EL) in Modern Society

- To provide consistent and customized information depending on need
Every learner should get the same content, in the same form.
- To provide timely and reliable content
Content should be updated instantaneously, to give more accurate content.
- To provide 24/7 learning
Due to the web-based nature, EL is available to learners anywhere and at any time of the day.
- Standardization of Learning
The web-based nature of EL can be able to provide virtually the same content at same time regardless of the different platforms and operating systems.

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