

Chapter 12

Mashup of E-Learning Services: Emerging Technologies and Practices

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ABSTRACT

With the improvement of Internet technologies and multimedia resources, traditional learning has been replaced by distance learning, web-based learning, or other e-learning learning styles. According to distance learning, there are many research organizations and companies who make efforts in developing relevant systems, but they lack interoperability. The only way to reuse these applications is to redevelop them for specific purposes. In order to solve this situation and norm the various learning resources, IMS proposes a new e-learning standard named “Common Cartridge.” This standard not only integrates the past e-learning standards like LOM, SCORM, and QTI, but also proposes a technical architecture, called Learning Tools Interoperability, to make reusable applications among different systems without programming again. In this chapter, the authors firstly introduce the current e-learning environment. Then the authors pay attention to the usage of Common Cartridge standards and discuss the architecture of Learning Tools Interoperability. According to these, the authors point out the e-learning standard that could be widely utilized in the future.

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INTRODUCTION

With regard to the term “Learning” in the psychology’s viewpoint, family is the first educational environment we get in touch with. What we learn from it is about the basic communication skills and the behavior of maintaining our life such as capability of language, capability of action, capability of thinking and so on. In the viewpoint of traditional learning, we are also considered school as the only way to gain knowledge. After children getting into school, they learn how to cooperate with others. It is a completely different education style from family education, and it is the essential part of education. According to the accumulation of knowledge, learners could choose to go to the technical and vocational schools for improving their skills or to go to the universities for further research. Such education style is not only make us obtain in-depth knowledge but also bridge us to the society through the interaction between human and human.

With the rapid development of the internet and information technologies, traditional learning style is definitely changed by the distance learning, web-based learning or others e-learning learning styles (Kapatker, 2006). Not only that, it has injected new vitality to the current education. With development of e-learning, we are always been asked that: Could e-learning replace the traditional learning? (Minton, 2004) The answer is obviously negative. However, the result does not mean that negative answer should not worthy to be treated. E-Learning plays an essential role that could assist the traditional learning style. The learning behaviors are not restricted in school or school time. It is possible to do relevant learning activities everywhere with computer and internet.

As stated above, e-learning represents as an assistant while learners do relevant learning activities. In traditional learning environment, teachers follow the learning theories and sequences to arrange the courseware content. Now more and more educators take advantage of the technologies

to assist their teaching activities. Hence, there are lots of research organizations and companies who make efforts in developing the relevant systems like authoring tools, LMS (Learning Management System) and learning object repository. The following are the outstanding systems that follow the specific e-learning standards (Zhang et al., 2007) (Lopez-Nores et al., 2006):

- Authoring Tools: RELOAD, Hard SCORM Authoring Tool, Authorware...etc.
- LMS: Moodle, Sakai, Blackboard, Wimba, ANGEL Learn...etc.
- Repository: CORDRA, SCORM Registry...etc.

Though we could benefit from the internet technologies, we still face a difficult problem when developing the e-learning system platforms. It is because of the variety of e-learning standards (Anido et al., 2001). Nowadays, we have the LOM (Learning Object Model) and SCORM (Sharable Content Object Reference Model) (Vossen et al., 2006). There’re several countries follows these two standards and take their education policy into consideration to establish their own e-learning standards and publish content. (Friesen et al., 2005) But this situation goes against with the original reusability concept of the e-learning standards. Furthermore, the standards for courseware and the standards for assessment are not the same. It makes the courseware content could not consistent with the assessment activities. The only way to connect the learning activities and assessment activities is through third-party assessment systems and the systems return the results to the LMS for further control and management. It increases the complexity when editing the courseware and assessment content.

A new e-learning standard derived from constantly modifying and testing. It also lasts for a period of time. The aim is to establish a practical version to raise the popularity of e-learning standards (Kettleborough, 2002) (Mircea, 2005).

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