E-learning as a Process of Knowledge Construction

—a Constructivist and Semiotic Perspective

Abstract

E-learning refers to any form of learning delivered or supported by the use of web-based technology or other electronic media. Compared with traditional classroom learning, e-learning has shown its advantages by its nature of flexibility, accessibility and convenience to learners. Given the broad deployment of network technology and increasing on-line communication in teaching and learning, there is an urgent need for a methodological guidance on web-based instruction. The theories adopted in this paper are constructivism and semiotics, which share startling resemblance in the views of knowledge construction and learning process. From a combined perspective of constructivism and semiotics, e-learning is regarded as a process of knowledge construction. To make the theories applicable, this paper provides design principles for e-learning courseware and applies techniques of content objects and learning objects for the design. Learning objects give learners freedom to perform learning from different paths. In this way, learners are put in the centre of a learning process, and construct knowledge through their own experience, which is supported and confirmed by the theories of constructivism and semiotics. Based on the techniques of content objects and learning objects, designing and delivering UML course on-line is chosen to be an example for illustration. The outcome of our work is expected to be applicable for e-learning courseware design.

Key words: E-learning, Student-centred Learning, Constructivism, Semiotics, Learning Object