

Abstract:

Object-Based Learning Method in Civil Engineering

Many researchers have developed learning methods that can be used in different situations and conditions, which has led to numerous theories and associated applications. Traditionally, most instruction occurs in a formal classroom setting; however, with the help of technology various types of computer-based instructions that can deliver anytime, anywhere, and at a lower cost are possible these days. In addition, as industry moves from traditional craft-based operations to more sophisticated technology-oriented processes, needs for sustaining education have increased accordingly. In this context, among the computer-based technologies being explored is object-based learning, which is believed to offer new opportunities for learning in higher education system. Object-based learning is an instructional strategy that is based on the idea that one can learn from an object by exploring the object and its context. Typically, object-based learning is in the form of "bite-sized" components that could be used in combination with other objects to provide a variety of learning, customized to a learner's needs, levels, and goals and then rearranged for another purpose and for different end-users.

Described in this dissertation is an Object Based Learning Model (OBLM), which is a computer-based learning model. It consists of a digital warehouse that stores instructional materials in a structure used by course developers to expedite the development of the instructional materials. Online content can utilize standard media forms. Interfaces and modules for course developers/instructors and students will use the object-based approach. If successfully implemented, the OBLM is expected to offer many potential advantages particularly in the engineering disciplines. It can provide a significantly better learning environment for engineering topics in terms of reusability, flexibility, portability, and distributive learning.

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