Using Learning Management System (LMS) Activity Logs for Developing a Framework for Improving the Core Components of a eLearning Course
Kuleep Nagi & Prof. Dr. Srisakdi Charmonman
College of Internet Distance Education (CIDE)
Assumption University
Bangkok, Thailand
knagi@au.edu
charm@ksc.su.edu

Abstract: Quality of eLearning components is becoming a key issue in a virtual learning environment. The main objective of this paper is to provide educators and content experts a better understanding of the significance of usage of Learning Objects (LOs) or core components provided in an eLearning courseware. Most significant outcome of this work is to share a few statistical techniques to analyze the usage of various learning objects (LOs) or components for improving the quality of eLearning courseware. This work is accomplished by capturing the student's conference data through the activity logs and reports available in a Learning Management System (LMS). The captured data is statistically analyzed for usage patterns of various components. The outcomes are used to propose a framework to improve learning objects (LOs) or components in an eLearning courseware.

Keywords: eLearning, Framework, Learning Management System (LMS), Interactivity, Reports, Virtual Learning Environment (VLE)

1. Introduction- Learning Management Systems (LMSs)
In the increasing market of eLearning there are many software applications that can be used to create a virtual classroom. Some of these software platforms are open source products, others are commercial solutions. Angel, Sakai, WebCT, Blackboard and Moodle are few examples of popular software platforms being used by thousands of organizations, businesses and universities worldwide. MOODLE is one of the license free open-source software platform widely used by the universities. MOODLE is an acronym for Modular Object-Oriented Dynamic Learning Environment. Those involved with eLearning also call it as a Virtual Learning Environment (VLE).

In the world of eLearning words such as Virtual Learning Environment (VLE)) and Learning Management System (LMS) are used interchangeably. But both are designed to help instructors, educators and content experts and business trainers to create online learning material with opportunities for rich interaction. Modular design of an LMS allows the universities to design and add their own learning components to enhance eLearning strategies. This has contributed towards rapid growth, development and adoption of various open-source LMS worldwide (Foster, J. Cole and H. 2007).

Learning Management System (LMS)'s infrastructure supports many types of plug-ins such as Activities, Resource types, Question types, Data field types (for the database activity), Graphical themes, Authentication methods, Enrollment methods, Content Filters and Reports. Many third-party solutions are also available to enhance the functions of a LMS. In his work Champion (2005) mentioned that all LMSs are useful in outcomes-based learning environments that could be better understood through reports and activity logs of a courseware hosted on the system.

1.1 Learning Objects (LOs) In a Virtual learning environment (VLE)