ABSTRACT

A Learning Management System (LMS) is a term used to describe software tools designed to manage user learning interventions.   LMS is a web-based technology used to plan, implement and assess a specific learning process (Alias and Zainuddin, 2005). LMS which also referred as Course Management System (CMS)   provide workspaces to facilitate information sharing and communication among students and lecturers to participate in course activities. Educators are able to distribute information to students, produce content material, prepare assignments and tests, engage in discussions, manage distance learning and enable collaborative learning using forums, chats and news services. Several examples of popular LMS are Blackboard, WebCT and Moodle. Recently, Moodle, an acronym for Modular Objectoriented Dynamic Learning Environment has become one of the most commonly used LMS.   Moodle (2008) is a free LMS that enable the creation of powerful, flexible and engaging online courses and experiences.   Several e-learning researches have been conducted in order to take advantage of Moodle's performance. Graf, 2007 extend Moodle capability by implementing adaptation of the learning material based on the student's learning style. A standalone tool for automatic detection of learning styles in LMS has been implemented. E-learning systems developed using Moodle accumulate an enormous amount of information which is very valuable for analyzing students' behavior and could create a gold mine of educational data (Mostow & Beck, 2006). Romero et al., 2008 developed data mining tool to help instructors preprocess or apply mining techniques, such as statistics, visualization, classification, clustering and association rule mining from Moodle data   An e-learning system that provides learning resources according to Felder Silverman (FS) learning style model has been developed and tested on University Technology Malaysia (UTM) students taking Data Structure subject. The learning system was developed using Moodle. This chapter analyzes the student's learning preferences and behavior while using the e-learning system based on Felder learning dimension, such as processing, perception, understanding and input.   The first section of this chapter explains Moodle strength and features. The following section describes Felder Silverman learning style model. We further outline the development of elearning system that incorporates learning resources for Felder Silverman learning dimension. The process of capturing and analyzing the student behavior while learning using hypermedia learning system has been discussed in the following section. We further discuss and conclude the analysis of the distribution of the learners learning style, preferences and their navigation behavior.   The analysis is useful for providing parameters for classification of student's learning style based on student's learning characteristics while learning online.