The design of decomposed learning management system based on Grid Structure

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ABSTRACT

This paper proposes an intelligent learning management system with load-balancing function based on Grid structure that allows for the replication of learning materials and balance of network traffic. The system consists of the Learning Management System (LMS) for processing basic data, learning data and learning records of learners, and the Learning Content Management System (LCMS) based on the Grid structure for managing and storing the related teaching materials. The Web Service cross-platform distribution configuration of this research provides common communications between systems and enhances the capability of integrating learning resources. The Grid architecture of the system ensures a load-balancing functionality for LCMS of different domains. The learner via LMS connects to the Improved Ganglia Broker for access to required teaching materials from each LCMS. The LCMS with the minimum load is then selected from suitable LCMS as the source of the teaching materials. The proposed intelligent learning environment based on Grid structure is designed to improve the overload and the expansibility problems existing in the traditional decomposed LMS system.

Keywords : Grid

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