RANCANG BANGUN SISTEM PEMBELAJARAN ELEKTRONIK BERBASIS *CLOUD COMPUTING*

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ABSTRAK

Sistem pembelajaran elektronik atau lebih dikenal *e-Learning* merupakan sistem yang digunakan dalam proses pembelajaran berbantuan media jaringan komputer baik itu *intranet* atau *internet*. Dalam pengimplementasian-nya sering terkendala masalah infrastruktur dan sumber daya manusia yang memelihara. Berkembangnya teknologi memungkinkan *e-Learning* dapat diimplementasikan pada teknologi *cloud computing* sehingga satu sumber daya dapat digunakan secara bersama-sama. Penelitian ini bertujuan untuk membangun suatu sistem pembelajaran elektronik berbasis *cloud computing* dan mengukur kelayakan dari faktor fungsionalitas dan kebergunaan. Penelitian ini dilakukan sebagai solusi dalam pengembangan teknologi komunikasi dan informasi khususnya *cloud computing* yang digunakan dalam proses pembelajaran. Metode pengembangan sistem yang digunakan diadaptasi dari model sekuensial linier. Berdasarkan hasil penelitian didapatkan bahwa sistem pembelajaran elektronik telah dirancang dan dibangun pada insfratruktur virtualisasi *cloud computing* menggunakan KVM dengan dibangun dari tiga sub-sistem yaitu *video conference system* (*bigbluebutton*), *learning management system (moodle)* dan *cloud storage system* (*ownCloud*). Sistem pembelajaran elektronik berbasis *cloud computing* dalam penelitian ini 81,62% memiliki kemampuan untuk menyediakan fungsi sesuai kebutuhan pengguna (fungsionalitas) hal ini dapat dilihat berdasarkan penilaian dari ahli sedangkan sistem tersebut 83,23 % mudah dipahami, dipelajari, digunakan dan menarik pengguna (kebergunaan) hal ini dapat dilihat berdasarkan penilaian dari guru dan siswa.

Kata Kunci : Sistem Pembelajaran Elektronik, *Cloud Computing*, Virtualisasi, *KVM, Moodle, bigbluebutton, ownCloud*, fungsionalitas, kebergunaan

DESIGN OF ELEKTRONIC LEARNING SYSTEM BASED ON CLOUD COMPUTING

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ABSTRACT

E-Learning system is a system used in the learning process with assisted computer network be it intranet or internet. Its implementation is often constrained or affected by the problem of infrastructure and human resources that sustainted the system. The development of technology bring through the e-Learning implemented on the technology of cloud computing so that the resources can be used together. This study intend to develop an electronic learning system based on cloud computing and measure the advisability of functionality and usability factor. This research was conducted as a solution for the development of communication and information technology in particular cloud computing that is used in the learning process. System development method that used was adapted from the linear sequential model. Based on the results that e-learning systems have been designed and built in insfratruktur cloud computing virtualization using KVM with built of three sub-systems, namely video conference system (bigbluebutton), learning management system (Moodle) and cloud storage system (ownCloud). Electronic learning system based on cloud computing in the study 81.62% has the capability to provide the functions according to user needs (functionality) this can be seen by an expert assessment of 83.23% while the system is easy to understand, learn, use and attractive user (usability) it can be seen based on the assessment of teachers and students.

Key word : *E-Learning System, Cloud Computing, Virtualization, KVM, Moodle, bigbluebutton, ownCloud, functionality, usability*