

Chapter 8

Enhancing Learner– Centered Instruction through Tutorial Management Using Cloud Computing

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ABSTRACT

Integration of modern technology in enhancing learner-centered approach to instruction is increasingly being encouraged in higher education. Cloud computing has enhanced the way data is shared and stored. Learning resources can be stored in cloud computers thus, enabling groups of students to collaborate and edit shared materials. In addition, it also provides a number of advantages such as reduce storage cost, enhanced security, accessibility of learning materials and easy communication. Tutorial classes can take advantage of cloud computing to have the tutorial learning resources stored in the cloud. This will allow learners to collaborate online and edit tutorial materials regardless of the physical location of the participants. This book chapter discusses how cloud computing technologies can be utilized in education sector and proposes a cloud computing model which can be incorporated in a tutorial class to improve learner-centered teaching pedagogies in a tutorial class.

INTRODUCTION

In the last two decades use of Information and Communication Technology (ICT) in education systems has been on the rise. This has brought great transformation in the management of education systems, teaching methods and delivery of learning. ICT- based education systems are commonly referred to as Learning Management Systems (LMS). They have been developed to enhance efficiency and effectiveness in learning and training. Due the availability and access to the ICTs there have been numerous op-

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opportunities to enhance learning and teaching. Viswanath, Kusuma, & Gupta (2012) observes that cloud computing which is a rapidly changing the approach to using ICT has brought many opportunities to Information Technology (IT) in industry and education sector. In addition, the proliferation of affordable computers, widespread Internet connectivity and availability of educational content has been used to transform education systems globally (Masud & Huang, 2012b).

Due to increasing enrollment in higher education, demands for quality, specialized and applicable training for the industries, universities have not been able to recruit lecturers proportionately. There has been an increasing need to use accessible, affordable and sustainable technology in the management, storage and delivery of learning. Cloud computing has lately gained popularity in business for building and management of sustainable, scalable and cost-effective systems. Education is no exception and indeed many traditional systems have added or replaced some components and functionalities that are supported using cloud computing. Institutions of higher learning are currently using Learning Management Systems (LMSs) such as Moodle or Blackboard to manage e-learning. However, LMSs do not provide the opportunity to share resources and manage learning resources with minimal cost as most of them are run by individual institutions. Consequently, accessing learning resources through cloud computing will provide wide range of different academic resources, research applications and educational tools with minimal cost (Khmelevsky & Voytenko, 2010). In addition, cloud computing can support quick, effective communication, privacy, security, flexibility and accessibility of learning materials (Kumar, Kommareddy, & Rani, 2013).

Learning through tutorial is an old popular method for engaging students in learning. It has been all along been used by some of the top universities such as Oxford and Cambridge in United Kingdom (Beck, 2005; Horn, 2013). Efficiency in the traditional arrangement has been a challenge, but technology promise benefits that enhance the tutorial experience. In a study on collaborative learning with group interactive technology it was found that technology promotes interaction (Gitonga, Muuro, & Nzuki, 2014; Maina, Wagacha, & Oboko, 2014). Students participate in discussion and debate to a degree, either orally in the class or their views are captured in a system (Jones, Connolly, Gear, & Read, 2006). The value for the outcomes in tutorials in regard to student-centered approach cannot be downplayed because students must first demonstrate their research skills once they are assigned topic or question to write on, then their presentation and discussion skills are seen when they meet other students and the instructor to give and defend their findings in class, and finally the student paper that is graded by the instructor is the final product. This process underpins the student activities in the learning and therefore need to enhance tutorials through cost effective, sustainable and accessible approach using cloud computing. In view of this, this book chapter discusses how digital technology such as cloud computing can be incorporated in tutorial classes such that learners are able to construct knowledge in a more effective way. In addition, the book chapter also discusses the new trends in the use cloud computing in education sector.

OVERVIEW OF THE CHAPTER

This chapter first examines some literature on cloud computing. Secondly, it explores on the use of clouding computing in education sector. Thirdly, it discusses about tutorial classes and how to transform tutorial classes outcomes into digital content by utilizing cloud computing technology. Fourthly, it discusses a framework for tutorial management using cloud computing technology. Finally, it presents conclusion and recommendations on future trends in the use cloud computing in tutorials.

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