

# Chapter 20

## Task–Technology Fit Assessment of Cloud– Based Collaborative Learning Technologies

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### ABSTRACT

*Universities require basic changes in knowledge and communication-based society in order to achieve higher order learning experience and to satisfy expectations of new generation of students. This study aims to understand the likelihood of the cloud-based collaborative learning technology adoption within educational environments. Reviewing cloud computing research, technology characteristic construct was divided into collaboration, mobility, and personalization. Based on the Task-Technology Fit (TTF) model, this study tested a theoretical model encompassing seven variables: collaboration, mobility, personalization, task non-routineness, task interdependence, task-technology fit, user adoption. Purposive sampling was used and data were collected from 86 undergraduate and postgraduate students who had experiences in using cloud-based applications for collaborative activities. The results indicated that task non-routineness, collaboration, mobility, and personalization have positive significant effects on TTF. However, distinct from past studies, task interdependence positively influences TTF. In addition, results indicated that the significant effect of TTF on users' intention to adopt cloud-based collaborative learning technologies was considerable.*

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## INTRODUCTION

Developments in technologies have provided new opportunities for organizations to improve efficiency and save money in different areas (Ozden, 2014). Colleges and universities are looking for the new technologies for their software and IT hardware in order to encourage students and keep pace with the rapid developments in digital technologies (Sultan, 2010). Therefore, students need to develop quite different kinds of skills and knowledge in comparison with students in the past so as to be better prepared them for the future. There are a variety of new teaching- learning methods including self-directed learning and use of ICT that can be appropriate to enable students to develop intellectual and practical skills and positive perceptions (Razak, 2009).

Nowadays, collaboration tasks are fundamental success requirements in business organizations and in college classrooms. A new generation of students who are known as digital natives cannot live without the internet (Cornu, 2011; Oblinger, & Oblinger, 2005). Oblinger (2003) described different characteristics of this generation as: gravitate toward group activities and are fascinated by new technologies. New generation of students like to socialize and share their knowledge and thoughts within group environments dynamically. In order to meet the needs of these students and engage them more within learning process, educators should understand their audience and work in collaboration with them by using different delivery methods (Monaco, & Martin, 2007). Therefore, understanding expectations of learners and using new technology environments to facilitate their teaching and learning activities are important success factors to make colleges competitive. A solution can be Cloud computing which is newest alternative in current educational environments and has significant impact on teaching and learning.

Thomas (2011) explain that: “cloud computing has a significant place in learning in the higher education landscape both as a ubiquitous computing tool and as a powerful platform that can enhance engagement among educators to understand and improve practice and increase productivity.” Taking advantages of this new technology will help the universities to increase the productivity as well as, save cost and energy because the same cloud infrastructure can be provided for teaching, learning and researching of many users (Razak, 2009). Cloud-based technologies have significant role in enhancing collaborative learning as well as other socially oriented theories of teaching and learning (Thorsteins-son, Page, & Niculescu, 2010).

Looking at the research literature (Taylor, & Hunsinger, 2011; Edwards, 2011; Brodahl, Hadjerrouit, & Hansen, 2011; Edwards, & Baker, 2010; White, Brown, Deale, & Hardin, 2009; Rienzo, & Han, 2009; Chu, Kennedy, & Mak, 2009), it can be concluded that most of the previous research on collaborative learning using cloud applications has focused on collaborative writing using Google Docs. Furthermore, even though many studies have been conducted on the overall concept of cloud computing such as positive elements of use, advantages of using cloud technologies in collaborative learning, technical issue of cloud computing, there is a lack of previous research on student usage and acceptance of cloud computing applications to support collaborative learning. Thus, cloud computing technology is still relatively young in terms of maturity and adoption (Gital, & Zambuk, 2011). Moreover, Taylor & Hunsinger (2011) in their recently published research claimed that no studies have looked at cloud usage and acceptance in a university setting. Successful implementation of cloud computing in educational settings requires careful attention to a number of factors from both the student’s and institution’s perspectives (Behrend, Wiebe, London, & Johnson, 2011). The successful acceptance of the new collaboration tools may result in higher level of satisfaction student among team members and outcome will be more valuable (White et

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