Exploring the Impact of Learning Styles on the Acceptance of Open Learner Models in Collaborative Learning

Yong Wee Sek, School of Business Information Technology and Logistics, RMIT University, Melbourne, Australia & Faculty of Information and Communication Technology, Universiti Teknikal Malaysia Melaka, Melaka, Malaysia

Hepu Deng, School of Business Information Technology and Logistics, RMIT University, Melbourne, Australia & Smart City Research Center, Renmin University of China, Beijing, China

Elspeth McKay, School of Business Information Technology and Logistics, RMIT University, Melbourne, Australia

Minghui Qian, School of Information Resources Management, Renmin University of China, Beijing, China & Smart City Research Center, Renmin University of China, Beijing, China

ABSTRACT

This study investigates the relationship between learners’ learning styles and the acceptance of open learner models for information sharing in collaborative learning. Based on a survey of 240 undergraduate students in a Malaysian university, the study explores the relationship between learning styles and the acceptance of open learner models for information sharing using a chi-square test. An independent t-test is conducted to investigate the gender difference on the acceptance of open learner models. The result reveals that there is no association between learners’ learning styles and the acceptance of open learner models for information sharing. It shows that there is no difference between genders on the acceptance of open learner models. Such findings can assist open learner models designers to apply appropriate instructional design strategies in developing sustainable collaborative learning.

KEYWORDS

Information Sharing, Learning Styles, Open Learner Models, Technology-Based Collaborative Learning

INTRODUCTION

Technology-supported collaborative learning is increasingly becoming popular for improving collaboration in teaching and learning (Stahl et al., 2006; Sridharan et al., 2010; Karunasena et al., 2013; Ho, 2014). Its successful implementation depends mainly on learners’ willingness to share their learning information through the adoption of various collaboration technologies. Sharing learning information not only encourages learners’ reflection towards their learning. It also improves learners’ academic performance (Pai et al., 2014). To realize the benefit of collaborative learning, various collaborative learning technologies are introduced including open learner models (OLM) (Sridharan et al., 2009).

An OLM is a learning visualization tool for representing a learner’s current level of knowledge and their misconceptions in a specific subject area (Bull & Kay, 2010). With the use of an OLM, learners are able to create a collaborative learning environment in which they can share learning resources, compare with their work, and more importantly self-reflect and self-regulate on their learning.

DOI: 10.4018/IJSSOE.2016070101

Copyright © 2016, IGI Global. Copying or distributing in print or electronic forms without written permission of IGI Global is prohibited.
(Govaerts et al., 2010). The adoption of OLMs can increase the awareness of learners’ knowledge. It helps develop learners’ meta-cognitive skills, such as self-reflection and self-assessment (Bull & Kay, 2010). Furthermore, the use of OLMs has the potential to enhance the sharing of learning information by facilitating collaboration.

The successful implementation of collaboration learning requires a proper matching between learners’ learning styles and collaborative technologies (Taylor, 2004). This is because learners’ willingness to adopt a specific technology is influenced by individual learning styles (Cheng, 2014; Li, 2015). Furthermore, gender differences are found to have influenced the adoption of collaboration technologies in various contexts (Huang et al., 2013; Chan, 2013; Fu et al., 2012; Zhan et al., 2015). There are numerous studies on collaborative technologies and knowledge sharing behaviour of learners. The study on the relationship between learners’ learning styles and the adoption of OLMs is limited.

This study aims to investigate the relationship between learners’ learning styles and the acceptance of OLMs for information sharing. Based on an online survey of 240 undergraduate students in Malaysia, the study explores the impact of learners’ learning styles on their acceptance of OLMs for information sharing using a chi-square test. An independent t-test is conducted to investigate the gender difference on the acceptance of OLMs. The result reveals that there is no association between learners’ learning styles and the acceptance of OLMs for information sharing. It shows that there is no difference between genders on the acceptance of OLMs. Such findings can assist instructional designers to apply appropriate instructional strategies in designing OLM applications for developing sustainable collaborative learning.

The rest of this paper is organized as follows. First, the related literature is reviewed to justify the need for this study. This is followed by the research design and the research methodology. Subsequently, the findings and the contributions of this study are presented. Finally, the conclusion and limitations of this study are given.

LITERATURE REVIEW

OLM-Based Collaborative Learning

Collaborative learning involves learners working together to solve a problem related to their studies (Fu et al., 2012). It has numerous benefits including developing learners’ social skills, fostering interpersonal relationships, enhancing self-management skills, promoting cooperation, and encouraging information sharing. To facilitate the sharing of learning information, various collaborative technologies have been introduced. The integration of collaborative technologies in collaborative learning creates an opportunity for learners to share their learning information more effectively and efficiently (Pai et al., 2014).

Collaborative learning requires the acquisition and sharing of experience and knowledge in a community of learners and instructors through the use of collaboration technologies (Stahl et al., 2006). It allows learners to disseminate learning information through the adoption of collaboration technologies in their learning processes. The successful implementation of collaborative learning depends on the willingness of learners to share their learning information through the appropriate use of collaboration technologies (Stahl et al., 2006).

Information sharing is about the provision and acquisition of information between learners (Pai et al., 2014). It requires an active involvement of learners through adopting specific collaboration technologies for generating and transferring knowledge (Stahl et al., 2006; Pai et al., 2014). Recognizing the importance of collaboration technologies in facilitating the sharing of learning information, collaboration technologies such as OLM are introduced.

OLMs are introduced for helping learners to access their learning information (Bull & Kay, 2010; Shi et al., 2014). The availability of learners’ learning information creates an opportunity for peers or instructors to provide learners with appropriate scaffoldings. It provides learners with a learning
A Decision Tree Analysis of a Multi-Player Card Game With Imperfect Information
Masato Konishi, Seiya Okubo, Tetsuro Nishino and Mitsuo Wakatsuki (2018).
*International Journal of Software Innovation* (pp. 1-17).
[www.igi-global.com/article/a-decision-tree-analysis-of-a-multi-player-card-game-with-imperfect-information/207722?camid=4v1a](www.igi-global.com/article/a-decision-tree-analysis-of-a-multi-player-card-game-with-imperfect-information/207722?camid=4v1a)

Digital Library Structure and Software
[www.igi-global.com/chapter/digital-library-structure-software/29474?camid=4v1a](www.igi-global.com/chapter/digital-library-structure-software/29474?camid=4v1a)

Formal Analysis of Real-Time Systems
[www.igi-global.com/chapter/formal-analysis-real-time-systems/50435?camid=4v1a](www.igi-global.com/chapter/formal-analysis-real-time-systems/50435?camid=4v1a)