Chapter 2

The Impact of Role Assignment on Cognitive Presence in Asynchronous Online Discussion

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ABSTRACT

This study examined the impact of role assignment on cognitive presence when students participated in asynchronous online threaded discussions. A mixed methods design was used to investigate changes in the levels of cognitive presence while the students participated in an online introductory nutrition course. This study found evidence that scripted role assignment can be an effective instructional strategy when the approach is implemented into asynchronous online discussions. Implications for instructors and designers of asynchronous online learning environments are discussed.

INTRODUCTION

Computer-mediated communication (CMC) has become an integral part of educational communication to facilitate collaborative argumentation. In the CMC environment, an asynchronous online discussion board is a significant learning space where students construct concepts and knowledge about a topic through the process of sharing and arguing ideas with other students. As the use of asynchronous online discussion boards has become commonplace, researchers have been investigating robust ways to assess the quality of students' critical thinking and promoting the cognitive abilities of constructing more meaningful and higher order learning.

In particular, researchers have looked to the construct of cognitive presence to assess the systematic progression of knowledge acquisition represented by the higher-order levels of Bloom's taxonomy (Garrison, Anderson, & Archer, 2001; Lobry de Bruyn, 2004). Cognitive presence, a core construct of the Community of Inquiry (CoI) framework, is associated with "the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry" (Garrison et al., 2001, p. 11).

Previous research has identified the importance of cognitive presence. For example, researchers have found that cognitive presence is a significant predictor of learner satisfaction and persistence (Joo, Kim, & Park, 2009; Joo, Lim, & Kim, 2011). Other researchers found that using asynchronous online threaded discussion itself cannot guarantee the development of students' cognitive presence (Richardson & Ice, 2010) nor that cognitive presence can be attained by interaction itself (Garrison & Cleveland-Innes, 2005). Garrison and Cleveland-Innes (2005) identified that the intended and structured design and facilitation for critical discourse are needed to make students shift to deep approach to learning. In addition, a fair number of earlier studies suggested that asynchronous online discussion may not provide for the development of cognitive presence at higher levels and that online discussions usually remain at the lower levels of recognizing the problem (Garrison et al, 2001; Kanuka, Rourke, & Laflamme, 2007). The research implies that instructors or instructional designers need to implement purposeful and appropriate instructional strategies to improve students' higher levels of cognitive thinking.

Role assignment is gaining popularity as an approach for facilitating and evaluating computer-supported collaborative learning in higher education (Strijbos & Weinberger, 2010). Researchers have discussed the benefits of using role assignment to promote knowledge construction, more rapid engagement, and more consistent levels of interaction among group members (Pawan, Paulus, Yalcin, & Chang, 2003; Schellens, Van Keer, & Valcke, 2005). Role assignment is one of the ways of creating a clear task structure to foster cognitive processing and academic performance (Schellens et al., 2005). Using role assignment is a common practice to foster cognitive presence because it involves students in active decision making process and knowledge construction which is based on cognitive thinking abilities (De Wever, Van Keer, Schellens, & Valcke, 2010; Wise, Saghafian, & Padmanabhan, 2012). The potential benefits of role assignment can be supported by the research emphasizing the importance of student led discussions and student-student interaction (Bernard et al., 2009; Gasevic, Adesope, Joksimovic, & Kovanovic, 2015; Johnson, 1981; Schrire, 2006). However, similar to research on cognitive presence and asynchronous threaded discussions, studies also suggest that simply assigning roles may not promote knowledge construction, engagement or interaction (Gasevic et al., 2015). Considering that CMC presents advantages for active learning, it is important to conduct an in-depth investigation of how cognitive presence is expressed in relations to role assignment.

The purpose of this study is to fill this gap by examining how cognitive presence is influenced by role assignment when students participate in asynchronous online threaded discussions. In this study, we define roles as stated functions and/or responsibilities that guide students' behavior and group interaction (Strijbos & Weinberger, 2010, p.491). Moreover, we examined scripted product-oriented roles which were assigned by an instructor and involved a single weekly task, as they were originally developed to structure the asynchronous online discussions (Strijbos & De Laat, 2010). Each student was assigned a specific task as a starter, skeptic, or wrapper. A starter was responsible for posting a preliminary response to get the discussion started about a particular reading. A wrapper summarized the points that were made during the discussion with regard to a particular reading. A skeptic challenged points made by other students.

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