Chapter 56
Using Communities of Inquiry Online to Perform Tasks of Higher Order Learning

Ramon Tirado-Morueta
University of Huelva, Spain

Pablo Maraver-López
University of Huelva, Spain

Ángel Hernando-Gómez
University of Huelva, Spain

ABSTRACT

In this chapter, the community of inquiry model is used as an analytical framework, along with quantitative content analysis and social network analysis, in order to understand how social and cognitive presence and group structure are affected by the type of learning task and social networks. Discussion forums were employed focusing on three types of tasks: analyzing, evaluating, and creating. Over a period of three academic years, a total of 96 discussion forums were analyzed. Results show how social and cognitive presence are affected by social group structure and centrality of coordinators, depending of type of learning task.

INTRODUCTION

Given the growth of online collaborative learning in higher education and the proliferation of technologies that facilitate it, it is critical to gain a better understanding of the mechanisms that promote quality. In this sense, the community of inquiry (CoI) model (Garrison, Anderson, & Archer, 2000) represents one of those mechanisms. This model is useful to describe the development of online collaborative learning, taking into account the processes of instructional dialogue that can facilitate successful online learning (e.g., Akyol & Garrison, 2011; Szeto, 2015). The CoI model explains the online learning as a by-product of collaborative work between active participants in a learning community characterized by

proper orchestration between three components: the online pedagogical environment (teaching presence); social/referee support (social presence); and the cyclical process of interaction that allows meaningful learning within the student community (cognitive presence).

The overall objective of the study presented in this article is to use the CoI model to deepen understanding of the mechanisms that facilitate successful online learning when students tackle learning tasks of a higher order. There is evidence showing that the nature of the learning task modulates the profile of the learning process; however, we consider that there is insufficient evidence to obtain patterns to monitor group relations in similar contexts.

For this purpose, authors have combined two techniques of analysis: quantitative content analysis (QCA); and social network analysis (SNA). QCA is a process involving searching text according to a defined scheme, and is used to identify frequencies. The CoI model provides the category system used in this study.

The authors have also used SNA because of its ability to explain the nature of group relations, based on the flow of information and communication found in the interactions of participants. SNA has been used by several researchers to improve understandings of individual and group online learning dimensions. However, few of these studies have used a comprehensive conceptual framework that considers the core elements of the CoI model.

Therefore, with the support of QCA and SNA, and using as the conceptual framework of the CoI model, the specific objectives of this study is to determine the influence of group social structure and centrality of coordinators on social and cognitive activity for the different types of collaborative learning task.

BACKGROUND

To achieve the stated objective, this section describes the conceptual frameworks and the background used in this empirical study.

Community of Inquiry (CoI) Framework

During the last fifteen years, many researchers have both studied and analyzed educational experiences according to the CoI model (e.g., Akyol & Garrison, 2011; Szeto, 2015; Author). The CoI model focuses on learning processes from a collaborative constructivist point of view. The model also assumes that learning in online environments occurs through the interaction of three core elements: social presence, cognitive presence, and teaching presence. These elements work together to support deep and meaningful online inquiry and learning.

The first element, social presence, is defined as the ability of learners to project themselves socially and affectively into a community of inquiry (Rourke, Anderson, Garrison, & Archer, 1999). Social presence is divided into three categories of affective, interactive, and cohesive presence, which reflect a supportive context for emotional expression, open communication and group cohesion for task resolution respectively. Social presence, a factor critical to face-to-face teaching, is challenging to facilitate in online learning environments.

However, social presence is essential to collaborative learning experience and is an essential element in establishing cognitive presence. Cognitive presence refers to the extent to which online learners can construct and validate meanings based on communication and thinking (Garrison et al., 2000, 2001).

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