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Community of Inquiry as an instructional approach: What effects of teaching, social and cognitive presences are there in blended synchronous learning and teaching?



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ABSTRACT

Little research has been conducted to integrate teaching, social and cognitive presences as three instructional components of an instructional approach to contextualizing blended synchronous learning and teaching experiences. This qualitative case study reports the use of a community of inquiry instructional approach to exploring the effects of the presences on shaping the experiences of online and face-to-face students and their instructor. The students and instructor interviews, video recordings and class observations over an entire engineering drawing course were collected for data analysis with the use of a coding scheme derived from the presences. The findings revealed that attainment of the intended learning outcomes relied more on the teaching presence than on the social and cognitive presences of the approach. The instructor's performance could bring about a leadership role of teaching presence as being more important than the social and cognitive presences in the engineering course. However, the instructional effects of the teaching, social and cognitive presences contributing to the blended synchronous learning and teaching mode were situational and context specific. Implications for further research are discussed.

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1. Introduction

The concept of university learning and teaching supported by information and communication technology (ICT) is not new in higher education. It has been implemented for innovative educational opportunities beyond conventional instructional approaches (López-Pérez, Pérez-López, & Rodríguez-Ariza, 2011; Picciano, Dziuban, & Alfred, 2007; Szeto, 2011, 2013). Challenges to researchers are to find ways through which students and instructors' experiences can be shaped in different forms of online, face-to-face or blended learning mediated by ICT. Such experiences are imperative to developing an effective instructional approach to the learning modes.

The Community of Inquiry framework (Garrison, Anderson, & Archer, 2000) has been widely adopted in studies of asynchronous blended and online learning (e.g., Akyol & Garrison, 2011; Shea, Li, & Pickett, 2006). This study further explored the framework as an instructional approach to shaping blended synchronous learning and teaching experiences. As there have been various forms of the blended mode (Hastie, Hung, Chen, & Kinshuk, 2010; López-Pérez et al., 2011; Partridge, Ponting, & McCay, 2011; Szeto & Cheng, 2014), the study needed to identify an appropriate blended mode for the exploration. The instructional approach derived from the framework involved using video-conferencing for online and face-to-face students' learning in a synchronous blend of virtual and face-to-face situations.

This paper focuses on exploring the experiences in blended synchronous learning and teaching processes over an entire blended synchronous course. Specifically, it seeks to address three research questions:

- 1 How is the CoI framework implemented as an instructional approach to blended synchronous learning and teaching?
- 2 What instructional roles of the teaching, social and cognitive presences emerge in the process of the blended synchronous mode?
- 3 What instructional effects do the three presences have on the instructor's and students' experiences?

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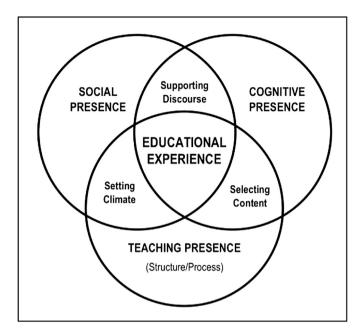


Fig. 1. The Community of Inquiry framework. Source: Garrison et al. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *Internet and Higher Education*, 2(2–3): 87–105.

2. CoI framework

Focussing on educational experiences, the Col framework (Garrison et al., 2000) has been developed in online modalities ranging from text-based, asynchronous computer-mediated communication (CMC) and computer conferencing to student online learning satisfaction (Garrison, Anderson, & Archer, 2010). The quality of the educational experience is conceptualised at the intersecting centre of the teaching, social and cognitive presences of the Col framework. The focus is on the attainment of deeper levels of meaningful learning through constructivist-oriented instruction (Akyol et al., 2009; Akyol & Garrison, 2011). The three presences are important conceptual elements in a Col, with each only representing a facet of the educational experience. Fig. 1 presents the Col framework.

The teaching, social and cognitive presences are assumed to play equal roles in shaping deeper levels of learning, as 'cognitive processes and outcomes are at the core of the transactions. Social presence and even teaching presence are, in most respects, facilitators of the learning process' (Garrison & Anderson, 2003, p. 55). Social presence is regarded as 'the ability of participants [students] in a community of inquiry to project themselves socially and emotionally, as "real" people through the medium of communication being used' (p. 94). Cognitive presence is defined as 'participants [students] in any particular configuration of a community of inquiry [being] able to construct meaning through sustained communication' (Garrison et al., 2000, p. 89). It also 'provides a description of the progressive phases of practical inquiry leading to resolution of a problem or dilemma' (Akyol & Garrison, 2011, p. 235).

Some studies (e.g., Garrison, Cleveland-Innes, & Fung, 2010), however, have indicated that the three presences do not play equal roles. Teaching presence, for example, facilitates student learning through course components. It has been interpreted as effective instructional leadership during the learning processes (Akyol & Garrison, 2011; Garrison, 2007) that takes a constructivist orientation. Teaching presence plays a lead role in facilitating social presence for communicative interactions and fostering student learning to achieve the intended learning outcomes. In contrast, Kozan and Richardson (2014) claimed that cognitive presence may have significant impact on its relationship with social presence and teaching presence whereby cognitive presence seems to play a dominant role among the three presences. Regardless of the different views, the three presences are all necessary components in the shaping of educational experience (Garrison, 2011).

Researchers (Garrison, 2011; Garrison & Anderson, 2003) have further developed sub-items of the three presences as a coding scheme to understand online educational experiences. Subsequently, the scheme is used as a predefined code book for analysing discussion transcripts. A substantial number of studies (e.g., Carlon et al., 2012) have also been conducted that adapt the scheme to measure the effects of online learning on cognitive outcomes and student satisfaction. Table 1 shows the sub-items for the teaching, social and cognitive presences.

In contrast, little research has been conducted to operationalise the CoI framework as an instructional approach for designing courses to be conducted in an online learning context. Garrison (2011) repeated the preliminary guidelines and recommendations for translating the

Table 1
The teaching, social and cognitive presence sub-items.

Teaching presence	Social presence	Cognitive presence
Instructional management	Emotional expression	Triggering events
Building understanding	Open communication	Exploration
Direct instruction	Group cohesion	Integration
		Resolution

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