



Effects of online presence on learning performance in a blog-based online course



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ARTICLE INFO

Article history:

Received 19 November 2015
Received in revised form 4 April 2016
Accepted 7 April 2016
Available online 9 April 2016

Keywords:

Blog-based course
Cognitive presence
Learning performance
Online presence
Social presence
Teaching presence

ABSTRACT

This study investigated how learners' perceived online presence contributed to their learning performance while participating in a blog-based university course. Although the literature evidently highlights that there is a necessity for online presence in online courses, concrete design approaches and empirical evaluation of the impact of online presence on learning performance in blog-based courses are lacking. An empirical study was therefore conducted to understand the relationship between individuals' perceptions of online presence, in terms of teaching, social and cognitive presences, and their learning performance, in terms of subjective and objective learning outcomes. Research questions were tested and data were analyzed using regression analysis. The results indicate that online presence has a significant influence on learning performance. A subsequent analysis found that cognitive presence played the most important role in blog-based online learning performance. This study also identified a significant relationship in learning performance between students' subjective and objective learning outcomes.

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1. Introduction

Driven by the rising need for cost-effective education offered to a broad audience, and enabled by the advancements in Internet and communication technologies applied to educational purposes, a growing portion of higher education is taking place in online contexts such as on the Web or in virtual learning communities (Dabbagh & Kitsantas, 2012). A prominent characteristic of online learning is a temporal and spatial separation among teachers and learners. While independence from a fixed schedule and physical location when attending online courses allows learners much convenience and flexibility (Bower, Dalgarno, Kennedy, Lee, & Kenney, 2015), the absence of a social context may present an important issue related to a sense of disconnectedness or isolation (Kruger-Ross & Waters, 2013; Wei, Chen, & Kinshuk, 2012), which is detrimental to the learners' cognitive development from a socio-cognitive perspective (Cunningham, 2015; Ellwardt, Aartsen, Deeg, & Steverink, 2013).

To provide online learners with a sense of presence similar to that in face-to-face instruction, it is crucial to offer interpersonal communication opportunities for students to socially engage with the teacher and peers. In fact, the importance of online presence has been highlighted by numerous studies (Garrison & Cleveland-Innes, 2005), and pedagogical practices capitalizing on interactive communication technologies

are well documented in the literature (Cunningham, 2015). Many online courses integrate social media into their delivery, while others incorporate a wide range of asynchronous facilities such as online discussion forums, wiki, and blog systems (Dabbagh & Kitsantas, 2012; Ke, 2010).

While social communication and interaction are essential for students to feel connected and to form interpersonal relationships, interaction alone does not guarantee student engagement in the process of cognitive inquiry, nor does it guarantee that cognitive presence is automatically in place (Garrison & Cleveland-Innes, 2005). Socio-cognitive approaches to online learning posit that online presence is a complex construct comprising a multitude of elements in different dimensions, including teaching presence and cognitive presence, in addition to social presence. Furthermore, these elements do not function independently, but rather, there is an interplay among them which forms many intersectional categories that function concurrently to form an integral whole to achieve the full potential of online learning outcomes (Akyol & Garrison, 2008; Garrison & Arbaugh, 2007; Garrison & Cleveland-Innes, 2005). The relationship of these intersectional categories is described by Garrison (2007) in a framework known as the model of Community of Inquiry (CoI). A CoI integrates social, cognitive, and teaching presence at the core of online learning experience. Based on this model, the success of blog-based online learning depends not on any single element of social interaction, but rather on the co-work of these elements interacting with one another. For a blog system to be cognitively effective, active dialog among peer participants must be fostered to articulate ideas and elaborate understanding. On the other

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hand, learners' reflective experiences should be stimulated to help them internalize the knowledge they have acquired so as to promote deep learning. With regard to teaching presence in learning courses, a considerable body of research agrees on a positive relationship between interaction with the teacher and perceived learning and satisfaction with the course (Swan, 2001). The role of the teacher goes beyond being a content provider and discussion moderator. Garrison and Akyol (2013) argued that participants in a learning community assume the role of both learners and teachers, in the sense that each participant not only constructs personal meaning but also facilitates and directs that process individually and collaboratively.

While online presence is widely accepted as one of the key factors determining learner experiences in online learning (Garrison, Anderson, & Archer, 2003), empirical evidence of the impact of blog systems on students' learning experience remains inconclusive. Conversely, the effectiveness of online courses facilitated by blog systems is at times subject to skepticism on various grounds that online environments are unable to provide interaction equivalent to face-to-face instruction (Kohlmeyer, Seese, & Sincich, 2011). Furthermore, given the complexity of interaction emergent from the many intersectional categories of CoI, the role of each of the constituent elements remains under-explored, and requires further clarification on the basis of actual implementation of blog-based online courses. To this end, we specifically designed a blog system named the Learners' Digest Blog (LDB) as the chief source of learning for a graduate level course "Digital Learning," in which the students were required to initiate discussion on specific topics relevant to the subject of inquiry, construct knowledge, respond to and rate others' posts, and interact with the instructor through Q&A. The design of the LDB strives to foster active group discussion, stimulate critical discourse, motivate participation, construct or co-construct knowledge, deepen understanding, and form a supportive learning atmosphere in the virtual environment. These learning activities on the LDB may enhance students' learning performance, which considered in this study in terms of the learners' subjective and objective learning outcomes. The former was assessed as the learners' perceptions of their learning performance and satisfaction while participating in the blog-based online course, whereas the latter was evaluated as the learners' blog-based course activities throughout the semester. We aimed to investigate both the cognitive and communicative aspects of students' learning through the use of the blog system over a semester of course participation. In attempting to better understand the role of various elements of online presence in students' learning performance attained from the blog-based learning environment through the lens of the CoI framework, we formulated the following research questions:

1. How do learners' perceptions of online presences (i.e., teaching, social and cognitive presences) affect their learning performance in a blog-based online course?
2. Which online presence among teaching, social and cognitive presences is the most important factor for learning performance?
3. Are there any differences between learners' subjective and objective learning outcomes?

2. Literature review

Research on online learning can be traced back to earlier distance education and telecommunication endeavors (Moore & Anderson, 2003). Many of these efforts were however heavily technically oriented, concerning practical issues of the development and implementation of the online learning environments (Sunal, Sunal, Odell, & Sundberg, 2003).

In parallel to these studies are socio-cognitive approaches that focus more on cognitive development in social contexts. Research and practice along this line commonly maintain that the essence of successful educational experience, no matter face-to-face, online, or hybrid, lies in the interplay of three core elements: teaching presence, social

presence, and cognitive presence (Garrison & Arbaugh, 2007). Garrison et al. (2003) argued that interactive and collaborative learning experiences enabled by recent developments in communication technologies are what distinguish online learning from previous paradigms of distance education prior to the advent of web-based social media tools. Research on online learning indicates that for online learning to be successful, the development of a supportive learning community is essential (Garrison & Akyol, 2013). In a collectively formed learning community, the teacher and learners could co-construct and share knowledge, respond to others' posts, reflect and comment on others' opinions, and elaborate on topics of mutual interest. In other words, learners in a learning community could perceive a sense of "presence" that is conducive to interaction among various entities involved in the learning process, including peer learners, the teacher, content, and technology.

2.1. The CoI framework

The CoI framework was initially constructed by Garrison et al. (2003) on the precept that effective online learning requires the development of community, in which higher order learning occurs when the students combine their personal experience with shared worlds of experience through interaction with the instructor and peers. Based on this framework, online presence is conceptualized as a composite construct that comprises three highly interdependent elements, namely teaching presence, social presence, and cognitive presence. The framework aims at establishing an online environment that goes beyond a social community for general social exchange and low-level cognitive interactions, and emphasizes the cultivation of higher-level learning (Akyol & Garrison, 2008; Garrison & Akyol, 2013). At the operational level, a CoI integrates the instructor's role in course design and facilitation, the learners' sense of community and belonging, and their cognitive engagement with the course content (Garrison et al., 2003). It could therefore be used as a theoretical guide to assess different educational approaches and strategies in facilitating a community of inquiry (Akyol et al., 2009).

Continued efforts on CoI research have sought to enhance the framework. Drawing on evidence from an ongoing project recording students' behaviors in CoI, Shea et al. (2012) contended that the existing framework may not have adequately represented the full range of instructional efforts involved in online learning. In particular, they identified learner discourse as a reliable construct that is not taken into account in most prior studies. Consequently, they suggested learner presence as an addition to the framework to reflect students' self-regulatory behaviors. Such a position, however, is rebutted as a violation of the fundamental assumptions of the CoI framework, since CoI environments built on collaborative-constructivist approaches are inherently inclusive of both individual (self-regulated) and distributed (co-regulated) experiences (Garrison & Akyol, 2013). In recognition of a recent movement in metacognition theory that has undergone a transition from individualistic models to a more socially situated orientation, Akyol and Garrison (2011) and Garrison and Akyol (2013) seek to incorporate a metacognitive perspective into the CoI framework. Based on evidence derived from the analysis of online discussion transcripts, they proposed a metacognitive construct which consists of three dimensions, including knowledge, monitoring, and regulation of cognition (Akyol & Garrison, 2011; Garrison & Akyol, 2013).

2.2. Online presences of the CoI framework

2.2.1. Teaching presence

Teaching presence, also known as instructor presence, plays an important role in building a learning community for students to co-construct and share knowledge. Anderson, Rourke, Garrison, and Archer (2001) defined teaching presence as the design, facilitation, and direction of cognitive and social processes for the realization of

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