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## Broadening the understanding of social presence: Implications and contributions to the mediated communication and online education

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## ABSTRACT

Social presence is a concept found to facilitate effective learning experiences in online education. However, there is limited understanding of the theoretical notion in the literature. In an attempt to broaden the understanding of social presence, the current investigation examined two issues: a) distinction between social presence and interactivity, and b) multidimensional nature of social presence and its predictive validity for online learning experiences. Data were collected from 210 undergraduate students using an online survey. Findings indicate that social presence and interactivity are related but distinct constructs. Both psychological involvement and co-presence appear to be under the concept of social presence. The data indicate strong predictive validity of social presence for online learning experiences when it is measured with both dimensions of psychological involvement and co-presence.

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### 1. Introduction

Thanks to advanced communication technologies, people are easily engaged in mediated interactions via various technologies in diverse contexts. Research has documented that people actively utilize technologies to communicate with others that are geographically distant (e.g., Ramsey, Gentzler, Morey, Oberhauser, & Westerman, 2013), to seek information when crisis occurs (e.g., Lachlan, Spence, Edwards, Reno, & Edwards, 2014; Lachlan, Westerman, & Spence, 2010; Spence, Lachlan, Edwards, & Edwards, 2016; Westerman, Spence, & Lachlan, 2012), to engage in parasocial relationships (e.g., Kim & Song, 2016), and to search health information and promote health (e.g., Kim & Timmerman, 2016; Song, Kim, & Lee, 2014; Song, Kim, Kwon, & Jung, 2013; Song, Kim, Tenzek, & Lee, 2013; Song et al., 2016).

Of various areas, online education has received particular benefits from the use of technology (Sellnow et al., 2015). Statistics reports that approximately 46% of college students in the United States have taken at least one online course (eLearning Industry,

2014). This implies that adoption of technology has opened a wide range of options for students to take classes from. With respect to popularity of online education, researchers have paid a keen attention to find ways to create positive learning experiences in a mediated environment. For instance, research has documented that teacher immediacy and communication styles, such as self-disclosure, are influential factors for effective online learning experiences (e.g., Song, Kim, & Luo, 2016). From a theoretical perspective, social presence, a feeling of being socially connected with others in a mediated environment (e.g., Biocca, Harms, & Burgoon, 2003; Short, Williams, & Christie, 1976), has been found to be a key predictor for effective learning experiences (e.g., Aragon, 2003; Caspi & Blau, 2008; Gunawardena & Zittle, 1997; Gunawardena, 1995; Hostetter & Busch, 2006; Richardson & Swan, 2003; Russo & Benson, 2005; Sung & Mayer, 2012; Tu, 2002).

Acknowledging the importance of social presence, there has been much endeavor to create a systematic and synthesized understanding of the notion (e.g., Biocca et al., 2003; Gunawardena & Zittle, 1997; Lee, 2004; McLeod, Baron, Marti, & Yoon, 1997; Russo & Benson, 2005; Sung & Mayer, 2012; Swan & Shih, 2005; Tu & McIsaac, 2002; Tu, 2000, 2002). However, the extant research seems to face some limitations and criticisms. In particular, research has raised issues related to confusion between social

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presence and its related concepts (Biocca et al., 2003). Further, although social presence has been theoretically addressed as a multidimensional concept (Biocca et al., 2003), limited research has empirically tested the multidimensional nature of the notion in a human-to-human interaction context. Thus, this study begins to address these issues.

## 2. Literature review

### 2.1. Social presence

Social presence research emerged from a mediated human-to-human interaction context in Short et al.'s (1976) research. Short and colleagues define social presence as “the degree of salience of the other person in the interaction” (p. 65). That is, the definition focuses on technology users' awareness of the other person in a mediated environment. As technologies evolve, the notion has been also investigated in a human-to-nonhuman interaction context in which people are interacting with artificial social actors (nonhumans) such as avatars (video game characters), robots, and computers. For instance, Heeter (1992) describes social presence as the extent to which other social entities, whether they are real humans or computer-generated beings, coexist and react to people. Similarly, Biocca (1997) describes social presence as ‘the sense of being together’ with others or other intelligences (i.e., people, animals, agents, gods, etc.).

Thus far, a standardized definition has not been agreed upon. However, the notion is generally understood as a feeling of being connected to the other social actor (Biocca et al., 2003) without noticing the technological means (Lee, 2004). That is, it is a feeling as if someone is socially present in one's life although they are not physically in the same space.

Since Short et al.'s (1976) research, scholars have addressed importance of social presence and made significant contributions to the understanding of the notion in a variety of contexts from diverse perspectives (e.g., Edwards, Edwards, Spence, & Westerman, 2015; Kim & Song, 2016; Kim & Timmerman, 2016; Lee, 2013; Lee, Park, & Song, 2005; Song et al., 2014; Spence, Westerman, Edwards, & Edwards, 2014; Westerman, Spence, & Lin, 2015). However, the complicated nature of the concept has created some confusion and limitations in the literature (Hwang & Park, 2007; Lombard & Jones, 2007; Nowak, 2001; Stein & Wanstreet, 2003; Tu, 2002). To begin to address issues and provide better understanding of the notion, the current study examines the following issues as a beginning: (a) confused understanding of social presence with its related-concepts and (b) limited attention to the multidimensional nature of social presence.

### 2.2. Confusion between social presence and related-concepts

One of the major problems related to social presence research is difficulty of distinguishing the concept from its related concepts such as social interaction, immediacy, and intimacy (Lowenthal, 2010). In other words, there is a blurry distinction between state of social presence and psychological or behavioral effects/causes/correlates of social presence (Biocca et al., 2003). As Biocca and colleagues stated, a feeling of social presence and its effects/causes/correlates are different and should be separated from one another. However, there seems to be confused use of social presence in the literature. For instance, a study (Kim, 2011) discussed multidimensionality of social presence by suggesting various dimensions of social presence that include open communication, mutual attention, and support. Although these aspects are related to the notion of social presence, those do not seem to appear as state of social presence itself. Rather, they seem to function as

causes or effects or simple correlates of social presence. For example, open communication may facilitate people's feeling of social presence or vice versa.

The blurry distinction and confusion seem more salient with respect to the notion of interactivity (e.g., Rourke, Anderson, Garrison, & Archer, 2001; Tu, 2000; Tu & McIsaac, 2002). In a series of studies, Tu and colleagues (Tu & McIsaac, 2002; Tu, 2000) addressed interactivity as one of the dimensions of social presence. However, ironically, they explained that “a feeling of low interactivity can diminish social presence” (Tu & McIsaac, 2002, p. 135), which indeed implies interactivity as a causal factor for social presence. That is, there seems to be somewhat confused understanding of the relationship between interactivity (or other related-concepts) and social presence by using the concepts in inconsistent ways.

In a sense that interactivity pertains to individuals' perceptions of acknowledging existence of the other communication partner, this notion may appear similar to social presence. However, they are indeed two distinct constructs. Interactivity may indicate existence of social presence, or a feeling of social presence may strengthen perceptions of interactivity. It is also possible that individuals would experience a strong feeling of interactivity without necessarily feeling social presence.

The issue related to the mixed understanding of social presence and interactivity has been raised and addressed in the literature. However, little has empirically tested this claim, which causes an absence of empirical support. Therefore, the current study proposes the following hypothesis.

**H1:** Social presence and interactivity are related, but they are distinct constructs.

### 2.3. Limited understanding of multidimensional nature of social presence

Another issue regarding social presence is concerned with the multidimensional nature of the notion. Like other communication variables that are multidimensional in nature such as self-disclosure (Altman & Taylor, 1973; Wheelless & Grotz, 1976), social presence also possesses a multidimensional nature (Biocca et al., 2003). In an extensive review of literature, Biocca and colleagues examined various conceptual definitions of social presence and outlined three categories: co-presence, psychological involvement, and behavioral engagement. Biocca et al. further emphasized a strong need for creating a measurement that can effectively assess the multidimensional nature of social presence.

Social presence as psychological involvement is concerned with a deeply immersed feeling of another, such as perceived access to another intelligence and salience of the other (Biocca et al., 2003). Biocca and colleagues categorized Short et al.'s (1976) approach to social presence, which focuses on salience of the other in a mediated environment, as psychological involvement. Although a different term (social richness) was employed, this aspect of social presence was also addressed in another extensive review of literature (Lombard & Ditton, 1997). Similarly, Hwang and Park (2007) also identified this dimension of social presence by referring it as emotional connectedness. Hwang and Park explained that this aspect of social presence is in line with Biocca et al.'s category of social presence as psychological involvement.

Further, Biocca et al. (2003) categorized co-presence as another dimension of social presence. Co-presence focuses on a feeling of being with another. The nature of co-presence is also well described in Lombard and Ditton's (1997) research as ‘we are together’ (a feeling like being together with someone) and ‘it is here’ (a feeling that an interaction partner in the virtual environment is brought

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