Re-examining Social Presence: Implications for Digital Pedagogies

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Social presence theory has been a seminal part of digital pedagogies literature since the early generation of computer mediated communication (CMC). However, despite multiple generations of the development of the theory, there is still a lack of a stable, widely accepted definition. Definitions range from those that identify social presence based on media affordances and attributes to those that identify social presence as a phenomenal state that is experienced by participants. This paper outlines the history and evolution of social presence definitions and their corresponding measures. It concludes that the factors that contribute to social presence should be identified in a non-mediated setting, as a psychological construct, in order to stabilize the definition, which would then provide a more stable definition that could lead to more accurate measurement across environments, both mediated and non-mediated.

Keywords:

INTRODUCTION

The concept of social presence appears in much of the online learning literature and is considered an important concept in online learning. Social presence, generally, represents a sense of being with others in a virtual or technologically-mediated environment (Short, Williams, & Christie, 1976). Lee (2004), however, indicates that the concept of social presence is complicated within discussions of

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mediated presence (i.e., perceptions of an environment that is facilitated by or transported by technology) versus non-mediated presence (i.e., perceptions of an environment that is direct, natural, or immediate). Mediated presence emphasizes that presence occurs within a virtual space, while non-mediated presence emphasizes that presence occurs as a purely psychological construct, regardless of space (i.e.,virtual or face-to-face). Identifying social presence in this manner – as a psychological state, as opposed to one that is mediated through, or as a by-product of the use of a specific technology – provides the opportunity for social presence to be investigated, and applied, in both mediated and non-mediated environments.

In redefining social presence as a psychological construct, there is a focal shift away from technology affordances and toward instructional differences in generating social presence and individual differences in the impact of social presence on learning. For example, in a recent study, Weidlich and Bastiaens (2017) attempted to arrive at a more concise definition of social presence by attempting to untangle social presence and 'social space.' Using their SIPS model (i.e., sociability, social interaction, social presence, and social space), they found that "a sociable learning environment fosters social interaction, leading to social presence and the emergence of a sound social space, in turn explaining the quality of the learning experience" (p. 479). From a social presence as psychological construct perspective, Weidlich and Bastiaens' findings beg the questions of how did the social interaction lead to increased individualized social presence (i.e., instructional differences) and how did the increased individualized social presence lead to increased learning (i.e., individual differences)?

Therefore, the goal of this paper is to trace the history and evolution of the concept of social presence, and to synthesize the current literature base in order to identify major factors that contribute to social presence. This review of literature provides evidence for the need to refine/re-define social presence as a psychological construct, and in doing so, the need to validate the social presence construct, leading to a more stable definition that, in turn, will allow researchers and instructors better opportunities for identifying affordances and benefits.

DIGITAL PEDAGOGY AND SOCIAL PRESENCE

As the use of digital tools to facilitate learning has evolved during the past decade, the challenges involved with aligning the affordances and attributes of tools with the learning goals and needs of the learners have also grown. Some online teachers, as Morris (2013) contends, push beyond traditional mechanisms

to better examine the affordances of networked learning opportunities. This sentiment is echoed in a study that examined perceptions and factors influencing teachers' abilities as digital pedagogues (Wadmany & Kliachko, 2014). The results of this qualitative study that addressed graduate students' perceptions of the role of technology indicated that pedagogical methods and strategies in technology-rich environments resulted in more learner-centered, collaborative, supportive, and dynamic learning environments. In other words, the use of technology provided opportunities to significantly shift pedagogical approaches. This finding aligns with Morris's call to push beyond limitations of tools such as the typical LMS to create more engaged learning experiences. Social presence is one concept that has become inextricably linked with the use of digital tools to facilitate learning, which has left many questioning both strategies for implementing/creating online experiences that are high in social presence, and the resultant outcomes based on doing so.

It is critically important to examine the concepts and theories involved with applying technology to the teaching and learning endeavor in order to ensure that pedagogy leads technology. Additionally, it is important to 'unbundle' pedagogy from typical and traditional classroom strategies and methods. Considering current and emergent digital pedagogies and their potential impact on learning, however, is a complex endeavor. A thoughtful consideration of the best mechanism and strategies for doing so yields many avenues for considering how to best align psychological theories of learning with the ever-expanding literature base of effective teaching practices and the rapidly evolving toolset of innovative technologies.

One such example of digital pedagogues who, in alignment with Morris's (2013) call, refused the limitations and created networked learning experiences, can be seen in the theoretical work of Bronack et al., (2008) which describes an online learning instance that was intentionally designed to push beyond the limitations of typical content delivery via an LMS to create a highly engaged collaborative, and networked learning experiences. They chronicle the development of a virtual campus that leveraged the affordances of a 3D virtual learning experience for graduate students in an Instructional Technology program. The purpose of using a virtual environment was to examine the pedagogical affordances of cutting edge technologies. Later research on participation in the program via the virtual world led to increased sense of community amongst learners (Terry, Cheney, Bolt, McClannon, & Sanders, 2016). The sense of co-presence and community facilitated by students participating in a virtual campus led the initial faculty involved to coin the term "Presence Pedagogy" (Bronack, et. al., 2008) in order to describe experiences of students who

felt co-present with their peers within the environment. This work exemplifies the potential of digital pedagogues to push beyond the typical application of technologies such as LMS's in service of creating opportunities for learners to experience social presence.

Social presence has been a topic of inquiry in a number of contexts and settings with a variety of implications, such as: investigating its application with Twitter (Kim & Song, 2016), with activities such as exergaming (Kim & Timmerman, 2016), as it is connected to issues such as identity and addressivity (Liaw & English, 2016), its impact on virtual teams (Makani, Durier-Copp, Kiceniuk, & Blandford, 2016), and as a construct related to knowledge sharing in virtual communities (Yilmaz, 2017). Given the range and diversity evidenced in these studies, it seems reasonable to state that social presence is a topic that is both current in the digital pedagogies literature and intertwined with many technological applications.

A recent meta-analysis of social presence in online learning (Richardson, Maeda, Lv, & Caskurlu, 2017) looked at studies across contexts and disciplinary areas to ascertain patterns of students outcomes. This meta-analysis found positive correlations between social presence and both course satisfaction and perceived learning, but also found large variations among correlations due to variables such as discipline area, course length, and audience. The study elucidates the potential of social presence to aid in the design and development of effective online learning, but also signals more work to be done to better identify strategies and outcomes. Given that its significance and utility as a psychological and pedagogical construct is being evaluated within a variety of different contexts (including Twitter, gaming, and 3D virtual world), and has begun to produce positive outcomes in educational settings, it seems that a logical next step is to conduct research that would produce a more consistent definition that can, in turn, inform appropriate instructional strategies.

Considering these findings from Richardson, Maeda, Lv, and Caskurlu's (2017) meta-analysis along with Bronack et al.'s (2008) description of a learning environment designed to promote presence and community, providing a more concrete and specific definition of social presence so as to best measure and provide design implications seems necessary. Although there is much literature related to social presence, there is still a lack of a widely accepted definition.

DEFINITIONS AND MEASURES OF SOCIAL PRESENCE

Much of the foundational literature related to social presence cites Short, Williams and Christie's (1976) definition of social presence ("the degree of

salience of the other person in the interaction and the consequent salience of the interpersonal relationships," p. 65) as the baseline definition of social presence. However, additional definitions and conceptions of 'presence' as well as further explications of the original definition have convoluted the concept. As such, and as acknowledged by other authors, there is a "need for a well-explicated conceptualization of social presence both to provide a more holistic understanding of individuals in mediated environments and to systematically investigate social presence as a complex, multi-layered, and multi-faceted construct" (Oztok & Brett, 2011).

Multiple issues convolute the definition of social presence, most notably its relationship with other types of presence. As Lee (2004) articulates, a general form of 'presence' has been referred to as telepresence, virtual presence, or mediated presence. This general presence has been defined in different ways based on the context of the study, but it is most often defined as "the subjective experience of being in one place or environment, even when one is physically situated in another" (Witmer & Singer, 1998). Therefore, while overarching definitions of presence generally refer to a 'sense of being there', in contrast the generalized definition of social presence is a 'sense of being with others'.

In addition to social presence being intertwined with other definitions of presence, an additional aspect that convolutes the definition of social presence is that it is quite often measured, and therefore used synonymously, with both the constructs of community and interactivity. As evidenced by the Garrison, Anderson and Archer (2000) Community of Inquiry model, the concepts of community and presence are firmly entangled with each other. In this model, the concept of social presence is joined with the constructs of social, cognitive, and teaching presence. Furthermore, social presence is also extensively used in conjunction with the concept of interactivity (Kožuh et al., 2015). Although some purport to extend the framework beyond the concept of interactivity (Shin, 2002), it is not clear from the literature what the relationship between interactivity and social presence is – whether interactivity is a by-product of social presence, or a condition of high levels of social presence. As is indicated by Picciano (2002), the two concepts are not synonymous as users may be highly interactive without feeling 'present,' yet many studies continue to investigate them as similar constructs and also attempt to provide greater clarity as to the relationship between the two (Gunawardena, 1995a; Horzum, 2015; Kim, Song, & Luo, 2016).

Specifically, while some have attempted to delineate between interactivity and social presence (Kim et al., 2016), others have defined social presence as being a component of successful online community (Akyol & Garrison, 2008; Rourke, Anderson, Garrison, & Archer, 1999a). Beyond looking at interactivity and

community, current measures of social presence include an array of factors that range from affective indicators and group/community indicators, to attributes of media that can be leveraged to affect social presence (Biocca, Burgoon, Harms, & Stoner, 2001; Gunawardena, 1995a; Sung & Mayer, 2012; Tu & McIsaac, 2002a). Therefore, there are many aspects of social presence, and the evolution of the concept, that are still being problematized and empirically addressed. In order to attempt to further explicate, we must first turn to a discussion of the history and evolution of the concept.

The history of social presence

As is articulated within Cui et al.'s, (2013) article addressing the instructional design implications for social presence, studies of social presence have occurred in roughly three generational phases. The generational, or phased, aspects of social presence are also represented in (Lowenthal, 2010) discussion of the evolution of the theory as it relates to online learning. Both conceptions of the timeline and phases related to the evolution of social presence as a theory can be roughly described by the following phases.

Phase one (1970s and 1980s) was largely defined by the foundational work of Short, Williams & Christie (1976). Their work defined social presence as a quality of the communication medium and was largely conceptualized in business and organizational settings. Phase two (1990–1999) was marked by researchers who began to question media appropriateness. The seminal work during this period, as identified by Lowenthal (2010), includes Rutter's (1984) *Cuelessness Theory*, Daft and Lengel's (1983) *Media Richness Theory* and Walther's (1994) *Social Information Processing Theory.* While not coinciding exactly with the timeline laid out by Cui et. al, these studies were all seminal and marked the transition from addressing social presence as being merely a function of the medium to being a more complex interpersonal construct.

Lastly, phase 3 (2000-present) is characterized by studies that situate social presence within online learning environments. During this phase, models and measures began to expound on existing definitions of social presence and have been based on a variety of contextual constructs. For instance, the aforementioned Community of Inquiry model (Garrison, Anderson, & Archer, 2000) added the concepts of teaching presence and cognitive presences to the mix, and even more recently, the notion of learning presence has been added to the framework (Shea, 2010). The third phase, therefore, became even more complex as researchers attempted to assimilate and address definitions, models, and measures from the prior two phases while adapting them to online learning environments.

While the work of social presence theorists has progressed through multiple iterations of investigation, each with its own attempts to define and measure social presence, the field still lacks consensus in this area. While some claim the definitions of presence/telepresence as the phenomenal sense of 'being there' and social presence as the sense of 'being together with others' (Biocca et al., 2001), others argue that the distinctions are not that clear and that social presence is a problematic term (Cui et al., 2013; Kilic Cakmak, 2014). Lowenthal (2010), who has systematically reviewed existing definitions of social presence, places them on a continuum with the degree to which a person is perceived as being 'real' and being 'there' at one end and the degree of the interpersonal communication between members of the community on the other.

Therefore, it stands to reason that while some measures of social presence address the qualities of the technology as part of the measure (Gunawardena & Zittle, 2009; Rourke, Anderson, Garrison, & Archer, 1999; Short, Williams, & Christie, 1976 Sung & Mayer, 2012; Kreijns, Kirschner, Jochems, & Buuren, 2010), others are needed that respond to address the multi-layered, multi-faceted nature of the construct by identifying it primarily as a psychological construct that can address instructional issues and contexts in both mediated and non-mediated environments. A recent study (Kim et al., 2016) that aligns with the goal of this paper articulates social presence as a multi-faceted construct and calls for it to be measured as a psychological state that can be experienced in any mediated environment. Work that has led to this point, however, can be seen in the through some of the prominent models of social presence that have attempted to explicate on the construct.

Models and measures

The work of Short, Williams & Christie (1976) was conceptualized to help address the qualities and capabilities of computer mediated communication environments to convey personal feelings of warmth and belonging. While this foundational work paved the way for future iterations of conceptualizing social presence, more complex models and measures have become prominent in the current literature. Most notably, the work of Gunawardena, (1995); Gunawardena & Zittle, (2009), Rourke et al., (1999), Tu & McIsaac, (2002), Biocca et al., 2001), Biocca, Harms, & Burgoon (2003) and, most recently, Sung and Mayer (2012). In this section, brief overview is provided of each of the foundational models, which serves to set the stage for the current call to measure social presence as a psychological construct.

Gunawardena and Zittle

Gunawardena's (1995) and later Gunawardena and Zittle's (1997) work on social presence acknowledges and then elaborates on Short, William and Christie's (1976) definition of social presence, stating that social presence is "the degree to which a person is perceived as a 'real person' in mediated communication" (p. 9). They added the dimension of interactivity to the concept of social presence, bringing the concept beyond a mere function of the media. This definition, and the shift in the conceptualization, was based on Argyle and Dean's (1965) concept of 'intimacy' and Wiener and Mehrabian's (1968) concept of 'immediacy'. Given those definitional characteristics, Gunawardena and Zittle (1997) developed the Social Presence Scale, which consists of 14 bi-polar scales based largely on the concept of communication intimacy. Using this scale, they found that social presence was a significant predictor of satisfaction in a text-based computer conference. These findings, according to Gunawardena and Zittle (1997) also supported the view that the relational aspect of CMC contributes to satisfaction.

Tu (2002), however, rejected the commonly adopted definition of social presence – that which referred to the salience of the interpersonal relationship – along with the semantic differential technique for measuring it used by both Short, Williams and Christie (1976) and Gunawardena (1995) due to the fact that "the components of social presence and what affects the degree of social presence in the CMC setting are missing" (p. 38). Tu (2002) called for a clearer definition, citing that prior conceptualizations and definitions were missing components of social presence as well as what factors contribute to social presence.

Tu and McIsaac

As a result of these articulated shortcomings in the literature, Tu (2002) developed the Social Presence and Privacy Questionnaire (SPPQ). The SPPQ addressed three dimensions: social presence, social context, and online communication and interactivity. The subsequent factor analysis revealed five factors related to social presence – social context, online communication, interactivity, system privacy and feeling of privacy. This measure was seminal because it was an initial step to identify and measure more complex areas related to social presence. Additional work by Tu & McIsaac (2002) indicated, via qualitative data analysis, that social presence is also impacted by students' relationships, specifically four major social relationships – demonstrating caring, exchanging information, providing services, and maintaining existing status. This work that began investigating and determining more of the complexities related to defining social presence led Tu and McIsaac (2002b) to define social presence as a

"measure of the feeling of community that a learner experiences in an online environment" (p. 131).

While Gunawardena and Zittle (1995) posited a definition of social presence that was not only a function of the media, but included aspects of communication, Rourke, et. al (1999) further evolved the definition by situating social presence within the dynamic interplay of online community. This definition is similar to and aligned with Tu & McIsaac's (2002) definition. The work of Rourke, et. al (1999) and Garrison, Anderson and Archer (2000) resulted in the development of the *Community of Inquiry* model. Garrison, Anderson and Archer (2000) define cognitive presence as the extent which the participants in the community can construct meaning through communication, teaching presence as consisting of the dual functions of designing and facilitating the educational experience, and social presence as "the ability of participants in the Community of Inquiry to project their personal characteristics into the community, thereby presenting themselves to the other participants as 'real people'" (p. 89).

Biocca

In contrast to the Community of Inquiry model, which broadened and arguably convoluted definitions and conceptions of social presence, (Biocca et al., 2003) called for a more well-explicated theory of social presence in order to "bring conceptual clarity to what is currently a rather amorphous set of variables, many of which are being equated or conflated with social presence" (p. 457). They, as well, problematized prior conceptualizations of the domain of social presence by attempting to delineate it as either being the related to the "fluctuating phenomenal properties of a communication interaction and the relationship it establishes. . .or the stable properties of a medium and/or target" (p. 469). They articulate the different approaches that had been taken and the continued need to identify the complex dimensions of social presence. Therefore, although the authors address social presence as a phenomenal state between persons, they remain heavily in the camp of technology-mediated interactions.

Sung and Mayer

One of the more recent attempts to define and measure social presence comes from Sung and Mayer (2012). Their definition of social presence ("the degree of feeling emotionally connected to another intellectual entity through computer mediated communication," p. 1739) was operationalized through the development of the Online Social Presence Questionnaire. Sung and Mayer recognized that in online learning the 'intellectual entity' may be another person or an intelligent agent.

The questionnaire developed by Sung and Mayer (2012) was based on what they considered to be dual components of online social presence – the characteristics of the medium and the user's perception. Based on their review of the literature, they focused solely on affective indicators and ultimately identified five factors, or facets, of online social presence. These factors that were tested via factor analysis are: social respect, social sharing, open mind, social identity and intimacy. These five factors were supported via multiple analyses across multiple samples. The analysis that resulted in the validation of the five facets that led to enhanced social presence in online environments. As a result, they provide practical contributions that include recommendations for online instructors (express respect for learners' efforts, share personal information to build relationships, make open and hospitable atmosphere, be aware of each others' identity), and theoretical contributions including a redefinition of social presence focused on the learner's subjective perception of being connected with others in the online environment.

Given the trajectory of social presence measurement, and based on the history of models and measures, five factors that contribute to social presence that are identified throughout the literature as contributing to social presence will be identified and explicated on below. Testing the five factors, in a similar manner to Sung and Mayer's (2012) work, in a non-mediated environment with the goal of identifying a stable definition of social presence, devoid of technological attributes, will then lead to further analysis of the impacts of social presence across modalities.

SOCIAL PRESENCE AND DIGITAL PEDAGOGY: CHARTING THE COURSE

Given the evolution of social presence and its lack of a stable in general, and as a technological construct specifically, it seems that in order to best situate it within the digital pedagogies literature, more work should be done to explicate a coherent, measurable definition that can lead effective strategy implementation across modalities. The goal of charting a course to better define social presence in order to better situate it within the digital pedagogies literature is reliant on the premise that it is best to define social presence as a psychological construct, or a phenomenological state of the learner. This would allow for the ability to apply social presence theory to technological applications and measure its efficacy and, most importantly, the impact of social presence on learning. This would then, in turn, would provide guidance for digital pedagogues who are searching for ways to facilitate higher levels of networked and connected learning.

Therefore, although some have contended that measuring social presence in non-mediated environments should be avoided because the scope would be too broad (Lee, 2004), and others contend that addressing social presence in non-mediated environments is unnecessary because it is self-evident (Biocca et al., 2001), we contend that defining social presence from a non-mediated, psychological perspective so as to provide recommendations for facilitating social presence in technologically mediated settings is imperative. It is our contention that once a foundational definition is arrived at, it can be applied to a variety of settings – whether technology mediated or not.

Also, given that the foundational definitions of social presence were based on psychological and communication concepts – notably, the constructs of immediacy (Wiener & Mehrabian, 1968) and intimacy (Argyle and Dean, 1965) – it stands to reason that further discussion on the 'roots' of social presence can help with a re-examination and re-conceptualization of the construct. Immediacy addresses communication patterns and behaviors, while intimacy is geared toward the personalization of the environment. Both constructs are derived from psychological and communication literature, initially in non-mediated environments. So, while social presence has largely become a technological construct as its practice and utility has been addressed as a digital pedagogy, it is firmly founded on psychological principles, such as those of interactivity and immediacy. Biocca et al (2003) also claim that "a central concern of social presence theory has to be whether technologically mediated social interaction is or is not different from unmediated interaction" (p. 473).

Therefore, based on a review of the literature, and in response to Biocca's call to address unmediated interactions as well as mediated ones, five factors that were derived from a thorough review of the literature (group cohesion, co-presence, affective association, intimacy and immediacy) will be investigated. These have been identified as the most critical factors that contribute to developing learning environments that are high in social presence, or positive feelings of connection and community.

Group cohesion

Definitions of group cohesion closely parallel definitions of community in the presence literature (e.g., Garrison, Anderson, & Archer, 1999; Rovai, 2002). Group cohesion is seen as a critical factor of social presence theory as it speaks to the ability of members of a team or group to work together to achieve tasks and learning goals as a team. Group cohesion is evidenced when members of a group can work together productively as a team. Being able to share resources and ideas that are necessary for successful completion of goals and tasks, communicate

ideas and strategies freely, and contribute to overall product and process of the group are critical features of a cohesive team. Social presence is necessary in order for groups to be able to collaborate and work as a cohesive team.

Additionally, Rovai (2002) connects social presence and community by contending that levels of one directly influences the other while Na Ubon & Kimble (2003) support these contentions by positing that social presence is one of the most important factors that help people actively collaborate. To further delineate features of a cohesive group, Whiteside's (2015) social presence model includes the following elements: resource sharing, seeing the group as a cohesive whole, and being approachable as a group member as factors of group cohesion. This model aligns with and is based on the Rourke, Garrison and Archer's (1999) Social Presence Coding scheme, which lists similar items in the cohesive dimension of the social presence category. Feeling a sense of social presence, therefore, can be identified by also feeling part of a cohesive group or community.

Co-presence/Salience of others

In order for group cohesion to be realized learners must be connected with those within their educational setting. Although the ways in which this can happen vary across instructional settings and contexts, individuals within the educational setting must be able to communicate with their peers in ways that can facilitate community and feelings of being part of a team or community. Having a clear sense of who people are within the environment based on feeling 'co-present' with said individuals, regardless of the setting, provides the opportunity to begin productive and social community/collaborative processes. Individuals must have a clear sense of the others with whom they are engaging so as to feel comfortable to communicate and collaborate. This sense of co-presence is found in the literature as definitions of social presence are strongly connected to the sense of being with others (Biocca, Harms, & Burgoon, 2003; Biocca, Burgoon, Harms, & Stoner, 2001).

Specifics characteristics of co-presence can include the sensory awareness of others, feelings of co-location, interactivity of the other, a general sense of being together (de Greef & IJsselsteijn, 2000) and 'sense of belonging' (Rourke et al., 1999b). In theories of social presence in the technologically mediated environment, strategies for achieving a sense of co-presence or salience of 'other' become more challenging; however, authenticity and fidelity of relationships in traditional environments need to be attended to as well. Kreijns, Kirschner, Jochems, and Buuren (2010) address social presence and the illusion of the other being 'real' as either an immediate (i.e., real time/synchronous) or a delayed (i.e., time-deferred/asynchronous) communication episode. The ability of people

to project themselves into the environment as being 'real' is also cited heavily within the COI framework (Garrison, Anderson, & Archer, 1999). Therefore, regardless of the setting – mediated or unmediated – having a sense of being with those who are sharing the instructional experience with you is critical to developing learning environments that are high in social presence.

Affective association

Instructional settings that are high in social presence are likely to yield high affective associations for learners as well. Feelings such as warmth and safety in an environment enable learners to act and interact freely with others and indicate that their emotional association with that experience would likely be high. Participants who have positive affect associated with their environment feel more comfortable acting and interacting in ways that create community and hence, social presence. This notion is based on the foundational and seminal work of Short et al., (1976) who initially defined social presence theory and measured it by using the semantic differential technique and included bipolar scales such as: unsociable—sociable, insensitive—sensitive, cold—warm, personal—impersonal. This indicated that environments that are perceived as being sociable, sensitive, warm and personal are high in social presence.

Gunawardena (1995) further expanded on this measure by adding similar affective factors to the CMC GlobalEd scale, and later developed the Social Presence and Satisfaction instrument (Gunawardena & Zittle, 2009), which increased the quantity of affective indicators that were used to assess perceived level of social presence. Garrison, Anderson, & Archer's (1999) work that indicates presence is high when participants are able to socially and emotionally project themselves into the environment supports the emotional component as being critical to the development of social presence. Additionally, in support of that definition and in alignment with the affective nature of the initial measurement scales referenced above, Whiteside (2015) expanded on Rourke, Garrison and Archer's (1999) social presence scale to include an 'affective association' component of social presence. She further operationalized some of the affective and emotional aspects of social presence in the Rourke et al (1999) coding scale to include an affective association category that specifically targets instances of emotion, humor and self-disclosure.

Immediacy

Immediacy is central to creating learning environments that are high in social presence as it addresses the communication patterns and behaviors between participants in the environment. Communication behaviors, whether verbal or

nonverbal, that communicate a sense of psychological and physical 'closeness' help facilitate a sense of presence in the environment. Specifically, Mehrabian (1971) categorized physical and verbal behaviors that reduce the psychological and physical distance between individuals as being either nonverbal immediacy behaviors, which include physical behaviors (e.g., leaning forward, touching another, looking at another's eyes etc.), or verbal behaviors that are nonphysical (e.g., giving praise, using humor, using self-disclosure etc.).

Immediacy is a pervasive construct within the literature. It is discussed by Lombard and Ditton (1997) as an aspect of how choice of language can create closeness, by Swan and Shih (2005) in regard to how differing media types can transmit verbal and vocal cues that can convey social presence, and by Gunawardena & Zittle (1997) who operationalize the concept by stating that teacher immediacy behaviors include a variety of verbal and non-verbal actions such as using humor, gesturing, smiling and otherwise personalizing the environment. Most recently, Garrison (2011) indicated that immediacy is important because it reduces personal risk and facilitates open communication, which in turn enables question asking and critical discourse.

Intimacy

An environment that is intimate is one that is both personalized through both verbal and non-verbal communications and focused on maintaining communication equilibrium. Gestures and non-verbal behaviors that convey a sense of closeness/personalization are prevalent in intimate environments. In a technology-mediated environment, non-verbal behaviors and gestures must be conveyed by different means to achieve similar effects. The intimacy theory of social presence is based in the work of Argyle and Dean (1965) who analyzed eye-contact as a mechanism to maintain approach/avoidance equilibrium during interpersonal communication, which hence facilitates higher levels of intimacy. In addition to an environment that is interactive, as characterized by immediacy behaviors, in order to achieve high levels of social presence, it must also be perceived as being intimate and personal.

Short, Williams and Christie (1976) name behaviors such as eye-contact, smiling, and personal conversation as factors that promote intimacy in a communication environment. Lombard and Ditton (1997) cite additional scholars who have expanded the list of intimacy behaviors to include posture and arm position, trunk and body orientation, gestures, facial expressions, body relaxation, touching, laughter, speech duration and others. They contend that a medium high in presence as social richness allows participants the possibility to adjust behaviors to achieve intimacy.

Being able to access relevant stimuli within the environment is critical to being fully present and integrated with the environment. Having access to visual cues, whether it be instructional materials, gestures, non-verbal behaviors, or symbols that convey emotion helps create presence and awareness within the environment. Helping participants attend to relevant sensory stimuli facilitates levels of engagement that create social presence. Witmer and Singer (2006) and Ijsselsteijn and colleagues (IJsselsteijn, Ridder, Freeman, & Avons, 2000) contend that presence is dependent on the extent and fidelity of sensory information and that attending to/focusing on appropriate stimuli is a necessary condition of presence. This concept can be extrapolated beyond the virtual environments and applied specifically to social presence based on Short, Williams & Christie's (1976) contention that visual stimuli enhances the possibilities for expression of socio-emotional material.

The five factors that have been identified and described can be measured across environments. They intentionally address variables from the literature that are more aligned with social presence as a psychological, phenomenal state and not as a property of a particular medium. Given that the five factors that have been reviewed are rooted in psychological theories and have co-evolved with the technological and pedagogical research literature over the past several decades, going back to the core psychological essence of social presence in order to obtain a foundational definition that can be applied across settings and modalities is critical at this point. As such, it is posited that attaining a definition of social presence as a psychological experience of the participant will assist with being better able to identify and measure social presence and its impacts within a learning environment across mediated and non-mediated contexts and thus contribute to the digital pedagogies literature.

CONCLUSION: IMPLICATIONS OF RE-EXAMINING SOCIAL PRESENCE

Kim et al. (2016) posit that social presence occurs independent of a specific technology and, as such, people can experience it in any type of technology-mediated interaction context. In this case, social presence is better thought of as a psychological construct, rather than an attribute of the environment. Further, we contend that in order to design effective instructional environments – mediated or non-mediated – that facilitate high levels of social presence, aspects related to the psychological perceptions of presence must be considered. Additional considerations would include Biocca et al.'s (2003) concern that social presence theory may or may not be different in technologically and non-technologically mediated

environments and Cui et al.'s (2013) concern with the lack of instructional design guidelines addressing social presence.

Given both the foundation literature and current studies, it is reasonable to conclude that the way forward in situating social presence within the digital pedagogies literature is to define and measure social presence as a purely psychological construct and then to explore its impact across a variety of instructional environments (e.g., face-to-face, online synchronous, online asynchronous), pedagogical approaches (e.g., problem-based, design-based, lecture-based), student populations (e.g. first generation, under-represented populations, English language learners), academic domains (e.g., liberal arts, social science, STEM) and cultural contexts (e.g., rural/urban education, low/high SES, country-based). Given the current lack of psychometrically-valid measures of non-mediation-linked social presence, there is a concomitant dearth of evidence regarding the impact of social presence across these variables of interest.

Finally, a reliable and valid measure for non-mediation-linked social presence would allow for the better parsing of social presence within integrated models of presence, such as the COI model. Is social presence independent of the social-cognitive-teaching presence triad, or are they inextricably linked? In addition, if social presence is deemed independent, are cognitive presence and teaching presence independent as well? Ultimately, defining social presence as a social construct allows for social presence to be (potentially) validly measured, and if social presence can be validly measured, then its impact on variables of interest can be accurately described, and if this impact can be accurately described, then effective instructional interventions may be created.

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