Social Presence and Online Learning: A Review of Research

Murat Oztok and Clare Brett

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Abstract

This article traces the evolution of the construct of social presence, focusing on its definition and conceptualization within online learning. The review here categorizes the research into three “eras” through which the history and evaluation of social presence can be summarized. The review reveals three fundamental concepts that are consistently emphasized in the research on social presence. The idea of social presence has long informed what is currently considered good practice in online learning. Yet, questions exist regarding how it can best be measured or conceptualized, and its relationship with learning outcomes remains unclear.

Résumé

Cet article analyse les parallèles et les sujets de dissension existant dans la littérature portant sur la présence sociale en identifiant comment la présence sociale est définie et opérationnalisée dans la littérature scientifique traitant de l’apprentissage en ligne. La revue de la littérature divise la recherche en trois « époques » à travers lesquelles il est possible de résumer l’histoire et l’évaluation de la théorie de la présence sociale. De
plus, la revue de littérature identifie quatre notions fondamentales qui sont constamment mises en relief dans la recherche traitant de la présence sociale. Toutefois, on continue à se poser des questions sur comment conceptualiser et mesurer celle-ci, de même que sur comment la présence sociale est liée à l’apprentissage.

**Introduction**

This article investigates a single question: What exactly is social presence in online learning? The concept of social presence has long-contributed to our understanding of social behavior in mediated environments; nevertheless, the definition lacks clarity. Unfortunately, while usable but limited in scope, the current conceptualizations of social presence do not adequately support the broad exploration and explanation of technologically-mediated perceptions, behaviors, and interactions. 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. Indeed, developing “a systematic theory will in turn enable development of appropriate measures of social presence...” (Biocca, Harms, & Burgoon, 2003, p. 457). As a consequence, we intend to start a discussion about how to incorporate these different understandings into a more productive conceptualization for online
learning research and practice. This article does not aim to create yet another account of social presence; rather, it aims to discover the similarities and contradictions within the existing literature. To do this, we reviewed, analyzed, and classified the definitions, theoretical foundations, measurements, and applications of social presence in computer-mediated communication (CMC) and online learning research. While our main focus was Education, we included the fields of Psychology, Information Science, and Communication Science and carried out an extensive review to locate peer reviewed journal articles, books, and conference proceedings about social presence.

The argument begins with elaborating why social presence is an important concept for online learning pedagogies. Then, we summarize the history and the evolution of the concept. By analyzing the various ways in which researchers have defined and investigated social presence, we discuss how social presence has different meanings for different researchers from different disciplines. We conclude by indicating possible areas for future research.

1. Social Presence and Online Learning

Researchers have long tried to explain individuals' social practices in online environments, and social presence is one of the key explanatory constructs in these efforts. Social presence is thought to play a supporting
role in the formation of relationships and the exchange of information within a mediated environment. That social presence is prerequisite to interaction and learning can be appreciated by an appeal to constructivist principles. We therefore begin with a brief review of constructivism, insofar as it helps us understand the nature of social presence as an important mediator of interaction.

From a social constructivist point of view, learning is shaped by context (Bakhtin, 1986; Brown, Collins, & Duguid, 1989), since an individual’s mind is formed through, and always continues to reflect, social processes (Bandura, 1994). Swan (2005) summarizes why social constructivism is important for online learning practices: “[s]ocial constructivism reminds us that learning is essentially a social activity, that meaning is constructed through communication, collaborative activity, and interactions with others. It highlights the role of social interactions in meaning making ... [and] knowledge construction” (p. 5). When social constructivism is employed as a theoretical framework, social presence becomes critical as it connects individuals in an online learning environment and motivates them to take an active role in the knowledge construction and meaning-making processes (Fung, 2004; Henning, 2004; Stacey, 1999). For instance, Hill, Song, and West (2009) suggest that online environments should support learning practices through which individuals “interact and observe the results of their interactions while responding to
and engaging with others” (p. 89). To summarize, literature suggests that social presence not only supports and facilitates the communicative actions of individuals, but also potentially enables learning in online environments.

2. Three Eras of Conceptualizing Social Presence

This section describes three time eras in order to characterize how the concept has evolved over the years and what has been studied regarding social presence. While we draw the trajectory of social presence through these three eras, we do not argue that these eras are distinct or separate from each other. Rather, we suggest that each era builds upon those before. In this sense, we think of eras as reflecting “the spirit of the time”; each era acts to constrain and shape the time-appropriate conceptualizations offered and used by researchers. Through these three eras, we show how our current understanding of social presence has evolved and has become an increasingly complex and multi-faceted construct.

The first era begins with the earliest presence studies, which date to the late 1960s. In this era, researchers focused on the capacity of the medium to convey social information. The argument was one of media richness: a medium capable of conveying social cues should promote communication that is similarly rich with social presence. Mehrabian (1969) conducted what is arguably the first social presence study, although he did
not use “social presence” to define the richness of the medium. Following up Mehrabian’s work, Short, Williams & Christie (1976) coined the term social presence and examined people’s attitudes toward different communication media (e.g., face-to-face, audio, and video). They measured social presence using pairs of bipolar items, such as unsociable-sociable, insensitive-sensitive, cold-warm, and impersonal-personal and argued that “[m]edia having a high degree of social presence were judged as being warm, personal, sensitive, and sociable” (p. 66). Short et al. (1976) suggest that social presence is a critical attribute of a communication medium that can determine the way people interact in a mediated environment:

We believe, however, that the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships is an important hypothetical construct that can usefully be applied more generally. We shall term this quality ‘social presence’. ... We regard social presence as being a quality of the communications medium. Although we would expect it to affect the way individuals perceive their discussions, and their relationships to the persons with whom they are communicating, it is important to emphasize that we are defining social presence as a quality of the medium itself. (p. 65)

To summarize, Short et al. (1976), conceptualized social presence as the quality of a medium through which individuals can interact in a
mediated environment. While current understanding of social presence remains true to this conceptualization, scholars today suggest that the relationship between technical quality and social presence is far less deterministic. Rather, many factors interact to yield social presence, including communicative affordances of differing media, communicative patterns of individuals, and attributes of the communities within which the individuals are situated.

Continuing with the first era, other prominent definitions include: the feeling that the people with whom one is collaborating are in the same mediated environment (Mason, 1994), the degree of tangibility and proximity of other people that one perceives in a communication situation (McLeod, Baron, Marti, & Yoon, 1997), the extent to which other beings in the mediated world appear to exist and react to the user (Heeter, 1992), and the degree to which participants are able to project themselves affectively within the medium (Garrison, 1997).

At the close of the first era, researchers remained concentrated on technical affordances and technology richness (e.g., Kiesler, 1986; Rice, 1994). Different communication media transmit varying degrees of social presence based on the capacity to send out nonverbal and verbal information.

We situate the second era in the 1990s. Researchers in this era
became attuned to the possibility that the individual, in addition to the technology, could determine perceived levels of social presence. Individual differences in communication style and preferences, for example, could affect the interpretation of social information (Garrison, 1997; Gunawardena, 1995; Gunawardena & Zittle, 1997). In part, this nuanced conceptualization was fostered by technological advances that promoted differentiated online experiences. This led to a focus on the contributions of each student to the online experience, and the ways that individual students responded to and learned from their subsequent interactions. It was also a period where constructivism, particularly in North America, began to have more sway in research, and the emphasis on "the individual" permeated social presence work as well. Researchers examined the effects of a medium on interactions and communications in terms of individuals’ perceptions and showed that individuals could overcome the limitations of communications media. An individual’s perception of presence became as important as the medium’s capabilities of transmitting that presence, and social presence came to include a perceptual component (Garrison, Anderson, & Archer, 2000; McIsaac & Gunawardena, 1996; Rourke, Anderson, Archer, & Garrison, 1999). Definitions of social presence in this era include: the degree to which people are perceived as real in a CMC environment (Gunawardena, 1995), the degree to which a person feels socially present in a mediated situation (McIsaac & Gunawardena, 1996), the ability of
students to project themselves socially and emotionally, as real people (Garrison, Anderson, & Archer, 2000), and the ability to make one’s self known in a mediated environment (Savicki & Kelley, 2000). Focusing on the individualistic perspectives, second era studies defined and explained social presence as the nature of individuals’ perceptions. Building upon the first era research, the second era contributed to our current understanding of social presence by extending the research to capture insights of individuals.

We begin the third era at the turn of the century, where echoes of this research remain important in new conceptualizations of online learning as situated communities of learners (e.g., Picciano, 2002; Swan & Shih, 2005; Tu & McIsaac, 2002). Today's mediated environments are moving away from the text-based platforms of the past, offering new ways to interact and socialize. As a consequence, scholars in this era address online learning communities as an important new dimension of social presence. For instance, Garrison (2009) studies social presence by examining whether individuals can communicate purposefully in a trusting environment and develop inter-personal relationships within their communities. Other studies with a similar focus, concentrate on how individuals perceive their peers in online courses (Swan & Shih, 2005) and how they project themselves both socially and emotionally in a learning community (Rourke et al., 1999). Kehrward’s (2008) study is important to note since it is relatively unique in
its qualitative measurement of social presence. Similarly, Kehrwald underscores the effects of community on social presence:

[students] experience relationships characterized by social–relational constructs, such as trust, respect, rapport, and empathy. They experience feelings ... in the online environment and comfort with the nature of a social–relational activity that promotes a willingness ... [of] participation in interpersonal exchanges – exchanges which require self-disclosure ... (p. 98)

While individuals are still the center of attention, the third era research expands the focus toward the relationship between individuals and their community (Kehrwald, 2008; Rogers & Lea, 2005; Tu, 2002). Building upon the second era, considerable research probes how social presence is manifested in individuals’ interactions with their online peers. Arguably, third era research represents the current understanding of social presence in online learning.

In summary, social presence has evolved through several stages, responding to new educational practices and conceptualizations. This evolution occurred in three phases over time: 1) a research era that conceptualized social presence as a property of a medium, where the focus was on the capacity of media to convey nonverbal information; 2) a research era that conceptualized social presence as the perceptions of individuals, where the focus was less on the media and more on people; and 3) a research era that conceptualizes social presence as a facilitating
element, where the focus is on the interactive learning activities and the development of online learning communities. This summarization demonstrates that our current understanding of social presence, the third era, is built upon and is still informed by the first and the second era studies.

3. Studying Social Presence

Along with analyzing the historical trajectory, the concept of social presence can be understood through an examination of the ways in which the theory has been instantiated. The literature suggests that three research themes are consistently present: 1) the relationship between social presence and sense of community, 2) the relationship between social presence and interactions and behaviors, and 3) the relationship between social presence and success and satisfaction. However, it is important to acknowledge that these three research themes are not in any time order nor are they clearly distinct from each other. Indeed, we will see how these themes overlap as we cite the same studies under different research themes. Below, we shall articulate these three concepts.

3.1 Social Presence and Sense of Community

Many researchers have focused on the relationship between social presence and sense of community. The theoretical underpinning of these studies is that individuals are not isolated entities in a community;
consequently, how people interact in different group settings should be examined. Therefore, these researchers have intensified their attention on how individuals interact in online communities as they engage with their peers in collaborative learning processes (e.g., Rourke et al., 1999; Tu, 2005). For instance, Hiltz, Coppola, Rotter, Toroff, and Benbunan-Fich (2000) employ social presence theory to investigate the ways in which individuals interact socially, question each other, share knowledge, and engage in activities in a technologically-mediated environment.

Early studies that investigated social interactions suggested that technologically-mediated environments are insufficient for the formation of communities. Early researchers compared CMC environments with traditional face-to-face environments and showed that CMC environments pose challenges for developing social presence due to the loss of face-to-face interaction and other visual cues. Therefore, these scholars argued that while mediated environments can facilitate the exchange of ideas, they are weak in their capacity to convey social cues that enable affective communication to occur (e.g., Connolly & Valacich, 1990; Hiltz, 1986). For instance, Moore (1980) suggested that the physical separation of students in a CMC environment has a tendency to reduce the sense of community among learners, resulting in feelings of disconnection, isolation, distraction, and lack of personal attention. Nevertheless, as technology has provided better communication channels, later research showed that individuals could
still develop a functional sense of community in an online environment and perceive the environment as a sociable place (e.g., Baym, 1995; Gunawardena, 1995; Walther, 1992). Current studies are in line with this idea and suggest that current communication media are sufficiently rich to support functioning communities (e.g., Aragon, 2003; Rourke et al., 1999; Rovai, 2002).

The Community of Inquiry (CoI) is likely the most influential theoretical framework to date for studying social presence in online learning communities. Though the CoI can be traced back to studies of Ramsden (1988), Lipman (1991), and Resnick (1991), online learning researchers refer to Garrison, Anderson, and Archer’s (2000) model because of its close application to online learning. The CoI is conceived of as a group of individuals who collaboratively engage in purposeful discourse to construct personal meaning and confirm mutual understanding through the development of three interdependent "presence" elements: social, cognitive, and teaching presence. Garrison et al. (2000) define social presence as “the ability of participants in a community of inquiry to project themselves socially and emotionally ... through the medium of communication being used” (p. 94) and argue that it creates the “difference between a collaborative community of inquiry and a simple process of downloading information” (p. 96). The CoI is particularly important since it provides a model to systematically investigate social presence and its relation to other
elements in online learning (Rourke & Kanuka, 2009). While earlier research had provided rigorous information about the subcategories of social presence, they tended to study social presence in isolation. The CoI model, however, evolved from the social constructivist paradigm, and attempts to empirically test the concept in relation to other dynamics in online learning (e.g., Arbaugh, Cleveland-Innes, Diaz, Garrison, Ice, Richardson, Shea, & Swan, 2008; Shea & Bidjerano, 2009; Swan & Shih, 2005). Many online learning researchers, particularly those studying higher education contexts, find the CoI model particularly relevant and useful because it provides “the methodological guidelines for measuring each of the presences that constituted a community of inquiry” (Arbaugh et al. 2008 p. 134). For instance, employing the CoI to study social presence, Rourke and Anderson (2002) explored the influence of social communication and context on students' perceptions; Archibald (2010) analyzed the effects of social presences on the development of cognitive presence; Delfino and Manca (2007) investigated the relationship between figurative language and social construction of knowledge; and Annand (2011) analyzed subcategories of social and teaching presences to support group-based learning activities.

To conclude, social presence can be an important construct affecting the development of a sense of community among learners (Aragon, 2003; Rovai, 2001). In addition, it can be argued that studying online communities through the concept of social presence could provide a fundamental
understanding of how individuals connect, communicate, interact, and form relationships as they work collaboratively in an online environment.

3.2 Social Presence and Interactions and Behaviors

Another important research focus in the literature is on the relationship between social presence and students’ online behaviors. Researchers argue that it is possible for individuals to interact and collaborate in an online environment while not necessarily feeling that they are members of a group. Accordingly, researchers in this category do not focus on the sense of community or socialization processes but are interested in how individuals behave and interact with each other in an online environment.

The literature shows that social presence is a key construct for understanding individuals’ experience in this context (Gunawardena & Zittle, 1997; Jung, Choi, Lim, & Leem, 2002; Rourke et al. 1999; Tu & Mclsaac, 2002; Walther, 1993). For instance, Gunawardena and Zittle (1997) suggest that when students participate in activities, they project their own identities into cyberspace, “feel the presence of others online”, and create “conventions and norms that bind them together in exploring issues of common interest” (p. 11). Other studies (e.g., Rourke et al., 1999; Tu & Mclsaac, 2002) demonstrate similar results and further suggest that social presence could make individuals’ interactions more appealing, engaging,
and rewarding. Yet another example can be found in Moore and Kearsley’s (2005) work in which they posit that social presence stimulates peer-to-peer interactions, and thus fosters sociability in online environments. They further argue that students need social presence to interact with their peers and to be perceived as being there and as being real.

To summarize, the literature suggests that social presence is an important construct that is closely related to individuals’ behaviors in online learning environments (Jung et al., 2002; Kearsley, 2000; Tu & McIsaac, 2002). Students with a higher degree of social presence participate more actively, and thus interact with others more frequently. Therefore, one could argue that there is a positive relationship between social presence and individuals’ behaviors and interactions in online environments.

### 3.3 Social Presence and Success and Satisfaction

A review of the literature shows that many researchers have tried to understand the outcomes of social presence and have focused on how social presence is related to students’ success. Therefore, researchers in this category have examined the relationship between social presence and students’ perceived learning or students’ satisfaction.

It is important to remember that these studies are looking at an indirect measure of learning; specifically, in studies on the relationship between social presence and students’ success “learning was
operationalized as perceived learning [and was] measured through self-reports with survey items” (Rourke & Kanuka, 2009 p. 26). The relationship between social presence and performance in an online graduate course was investigated by Picciano (2002) and the results reveal that positive social presence is significantly correlated with students’ positive perception of their learning. To more closely examine the relationship between social presence and students’ performance (in relation to student interactions), Picciano further compares students’ interactions with each other and with their participation in discussions. The results show that the students in the high social presence group performed significantly better than the medium and low social presence groups. Similar results can be found in Jung et al.'s (2002) study in which they assess the importance of social interactivity and conclude that students with a higher degree of social presence outperformed those with a lower degree. These studies confirm the results of Swan, Polhemus, Shih, and Rogers’s (2001) study in which the authors argued that students who were perceived to have high degrees of social presence tended to contribute more to discussions. Similarly, Shea, Li, and Pickett (2006) and Akyol and Garrison (2008) surveyed students and explored their perceived learning by directly asking students whether they learned in the online course. Both studies report a significant positive correlation between increased social presence and perceived learning.

Along with perceived learning, some scholars have examined students’
satisfaction with the online course in relation to the degree of social
presence. These scholars are interested in whether social presence predicts
students’ satisfaction by investigating the relationship between social
presence and retention rates. The literature shows that social presence is
related to students’ satisfaction (e.g., Gunawardena & Zittle, 1997;
Richardson & Swan, 2003; Tu, 2000) and to retention rates (e.g., Boston,
Diaz, Gibson, Ice, Richardson, & Swan, 2009; Leh, 2001; Liu, Gomez, &
Yen, 2009; Tu & McIsaac, 2002). For instance, Leh’s (2001) study suggests
that if social presence is not perceived sufficiently, individuals judge the
online environment as impersonal; consequently, they participate less and
decrease the amount of information they share with their peers. Therefore,
many scholars suggest that social presence is a significant predictor of
students’ overall satisfaction and course retention. Such arguments are built
on the premise that since students with higher level of social presence feel
more like insiders of a community, they feel more satisfied with the course
and thus remain in the course.

To summarize, the literature suggests that social presence has a
positive influence on students’ perception of their learning and satisfaction
in an online environment. However, it is important to note that as Rourke
and Kanuka (2009) remind us, such studies have typically focused on
perceived learning. Indeed, the ways in which researchers define learning or
social presence affects the ways in which they examine the relationship
between them. Nevertheless, regardless of variety in definitions and investigations, one could argue that social presence is an important construct for understanding students’ online behaviors that can be used to explain why some individuals interact more and in return obtain more knowledge while some others simply do not participate and do not share within the same environment.

4. Gaps in the Literature

Social presence research has a history of more than thirty years and numerous studies have been conducted; however, the literature shows some clear areas for further research. For instance, while researchers agree that social presence is a critical concept, the definition of social presence still lacks clarity. Indeed, notions of presence are as diverse as the fields within which it has been studied. Psychology, communications, education, cognitive science, computer science, engineering, philosophy, and the arts all offer discipline-specific conceptualizations and definitions of social presence (Lombard & Ditton, 1997; Tu, 2002). Lowenthal (2010) underscores this range of conceptualizations of presence by arguing that “it is often hard to distinguish between whether someone is talking about social interaction, immediacy, intimacy, emotion, and/or connectedness when they talk about social presence” (p.125). Along with the variety of definitions, the literature indicates that there are significant issues yet to be solved,
including the methods of measuring social presence, the factors affecting social presence, and the relationship between social presence and learning (Biocca, Harms, & Burgoon, 2003; Lombard & Ditton, 1997; Russo & Benson, 2005).

We also find that while social presence has been productively applied to understand the social practices of individuals, it has not been applied to understand the educational communities at large. If we accept the premise that social presence reflects the ability to connect with members of a community of learners by providing the foundation for social interactions (Garrison, 2006), understanding how communities, whether online or not, are situated in context becomes critical. However, the current understanding could not productively explain how intellectual engagements in a collaborative work are bounded by social presence. Garrison (2006) raises similar concerns and suggests that social and cognitive presence are “inseparable elements in a collaborative-constructive approach” (p. 29). Therefore, more work needs to be done to understand how social and cultural discourses could affect individuals and their social practices. This is an important limitation of current conceptualizations since communities are discursive entities that exist in a particular time and space, in which the temporality and historicity of the discursive dynamics would affect individuals’ social presence. Therefore, it might be productive to conceive of social presence as a unique and complex social construct for each
individual; one that may even fluctuate over time for the same individual in an online environment.

Yet another gap we identify is the lack of a qualitative understanding of social presence. The review indicates that while social presence has been extensively studied quantitatively, qualitative exploration of social presence is lacking. It seems prudent to focus on thick qualitative descriptions (Denzin & Lincoln, 2005; Geertz, 1973) of how social presence may be related to various social or cultural phenomena. Results from such studies could help us to better understand the nature of social presence by exploring how social presence occurs or functions for individuals within their particular context.

5. Conclusion

This paper reviews the historical and theoretical development of the concept of social presence. When the historical trajectory of social presence is considered, the review suggests that technological developments could affect the ways scholars conceptualized social presence. The capacity of the communication medium was considered the foundation of social presence theory for a long period of time and subsequent research was built on this foundational assumption. Later, communication tools used in CMC environments became increasingly sophisticated and individuals began to experience richer and deeper interactions. As a consequence, the
researchers’ focus moved in the direction of conceptualizing social presence through understanding participants' behaviors. These researchers continued to respect the capacity of the medium used but technological affordances were no longer the focus. Currently, social presence studies build on the premise that it is the individual who makes an online environment a productive space in which collaboration and social learning practices occurs. Therefore, the contemporary social presence research focuses on individuals within online learning communities.

Examining the theoretical development, the review suggests that new practices required new conceptualizations of social presence. Since technological advancements allowed sophisticated interaction and better collaboration among individuals, scholars searched for theoretical frameworks to deploy these new practices in a meaningful way. While researchers have considered social presence as a theoretical framework, they have conceptualized it in various ways to address these new emerging practices. Interestingly, although there is no consensus on the definition of social presence, the literature review suggests that much research employed social presence to study a wide range of aspects of the online learning experience, including perceived learning, satisfaction, performance, and interactions (Danchak, Walther, & Swan, 2001; Gunawardena & Zittle, 1997; Richardson & Swan, 2003; Russo & Benson, 2005; Walther, 1992). Despite the work that has been done, we underscored the continuing need
for a well-defined conceptualization of social presence to support systematic investigations. Particularly, we argue that such systematic investigation could provide more holistic means to understand social presence in relation to knowledge, learning, and cultural practices. Indeed, Garrison (2006) has already argued that social presence should not be studied in isolation; rather, researchers should consider the dynamics of a collaborative-constructive learning process. While we acknowledged the importance of the CoI as one attempt at a systematic investigation, the review suggests that much research employing the CoI model typically investigates social presence through issues that are peripheral to learning (Rourke & Kanuka, 2009).

Considering the historical evolution of the concept and drawing on the multitude of ways social presence is conceptualized, the review indicates further research could productively focus on how social presence is manifested within community at large. Grounded in social practice, the conceptualization of social presence should include how social and cultural dynamics manifest themselves in individuals’ practices and affect perceptions of presence. Such perspectives may provide more holistic ways to understand individuals in a mediated environment and better support collaborative learning practices in online educational contexts.
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Murat Oztok is a Ph.D. student at OISE, University of Toronto. E-mail: murat.oztok@gmail.com

Clare Brett is a Professor at OISE, University of Toronto. E-mail: clare.brett@utoronto.ca