



Social Presence in Online Learning: A Scoping Study

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Importance of Social Presence

How people interact socially in an online learning environment is described as social presence.

- Social presence is considered the critical affective (e.g. social and interpersonal) component to communication in an online learning environment.
- One of the more important concepts used to determine the level of interaction and effectiveness of online learning (Borup, West, & Graham, 2012; Kim, Kwon, & Chow, 2011; Richardson & Swan, 2003).
- Has been shown to aid in the engagement of higher order thinking (Garrison, Anderson, & Archer, 2000; Garrison, Cleveland-Innes, & Fung, 2010).



Why a Scoping Review of Social Presence?

- The understanding of what comprises effective affective communication (e.g. social presence) has become a more complex multi-faceted phenomenon.
- Because the construct has been characterized by multidisciplinary research in the fields of higher education, social psychology, educational psychology, information technology, and computer science.
- Social presence lacks clarity making it difficult to establish what is or is not working, socially and interpersonally, in online higher education.
- There has only been one study that undertook a systematic approach. The review, however, was limited to studies up until 2013. Since then number of studies pertaining to social presence has doubled.(see Chen, Fang, & Lockee, 2015)



What is a Scoping Study?

Scoping studies:

- are considered more rapid reviews of the literature,
- ask broad questions,
- can have post hoc inclusion/exclusion criteria,
- do not assess for bias, and
- examine a wide range of evidence (Levac et al., 2010).



Purpose

The focused purpose of the study is to report the findings of a scoping review of the construct social presence.

The overarching questions to be answered are:

- What elements, either technological or social, bring about the development of effective affective communication (e.g. social presence)?
- What are the outcomes of social presence?
- How is the construct social presence defined?



Methods

Five stages to the conducting of the scoping review included:

- identifying relevant studies;
- screening and selecting studies;
- charting the data;
- collating and summarizing; and
- reporting the results.

The scoping review followed the design advocated by Arksey and O'Malley (2005) with enhancements by Levac, et al. (2010) and Peters et al. (2015).



Methods (cont'd.)

Working in conjunction with the research librarians a series of search terms were then constructed representative of social presence to facilitate the searching of the ERIC, PsychINFO, ProQuest, and JSTOR databases.

In building the search terms, key concepts were combined using the Boolean operators “and” and “or” so that relevant articles from 1996 to 2016 were extracted and imported into Endnote.



Table 1.
List of Search Terms Mapped by Key Concept

Key Concept	Search Term
Students' Affect	Affect, student attitudes, student behavior, student motivation, student participation, student interests, student satisfaction, student role, learning motivation, learner engagement, self-motivation, motivation, student presence, perception, involve*, student characteristics, undergraduate students, graduate students, doctoral students, international students.
Teacher Affect	Teacher participation, instructor presence, teacher presence, teacher behavior, teacher engagement, affect teacher, affect, teacher motivation, teacher participation, teacher role, teacher attitudes, teacher effectiveness, teacher response, teacher feedback, teacher styles, teacher communicat*, teacher characteristics, teacher clarity, teacher quality, teacher student relationships, interpersonal relationships.
Online Learning Environments	Online learning, electronic learning, technology education, blended learning, computer assisted instruction, computer mediated communication, distance education, educational technology, electronic classrooms, online courses, multimedia instruction, virtual classrooms, web based instruction, virtual universities, technology education, technology integration, technology uses in education, curriculum development, technology planning, mlearning, mobile learning, instructional systems, computer uses in education, technology, asynchronous communication, synchronous communication, blended learning, influence of technology, virtual classrooms, web based instruction, MOOCs, blog, blogging, online community, electronic communication, learning environment.
Post-Secondary	higher education, graduate study, post-doctoral education, undergraduate study, masters programs, doctoral degrees, international education, university, bachelor degrees, masters degrees, global education, open university*, open universities, universities without walls, virtual universities, extended universities, college instruction, colleges, non-campus colleges, private colleges, multi-campus college, education, graduate education, post graduate, undergraduate, continuing education, non-traditional education, independent studies, adult students, adult learning
Social Presence	Social infrastructure, social structure, interpersonal relationships, social presence, social presence theory, engagement, community of inquiry, virtual learning communities, immediacy, social context, online communication, interactivity, social process, communities, social capital, learning environment, psychological distance, social interaction, collab* learning



Methods (cont'd.)

A two-stage screening process was employed.

First Stage

- Initial title, abstract, and keyword screen for inclusion was conducted by two reviewers with discrepancies resolved needed, involvement of a third reviewer.
- Studies in which social presence was not the focus were excluded or designated as uncertain for inclusion.

Second Stage

- To ascertain if material identified as uncertain from the initial title and abstract screen were suitable for inclusion required reading of the full text by the reviewers with consensus reached on relevancy for final inclusion (e.g. focus of the study being social presence).

The reference lists of those studies identified for inclusion were then searched for additional studies not included in the database search.



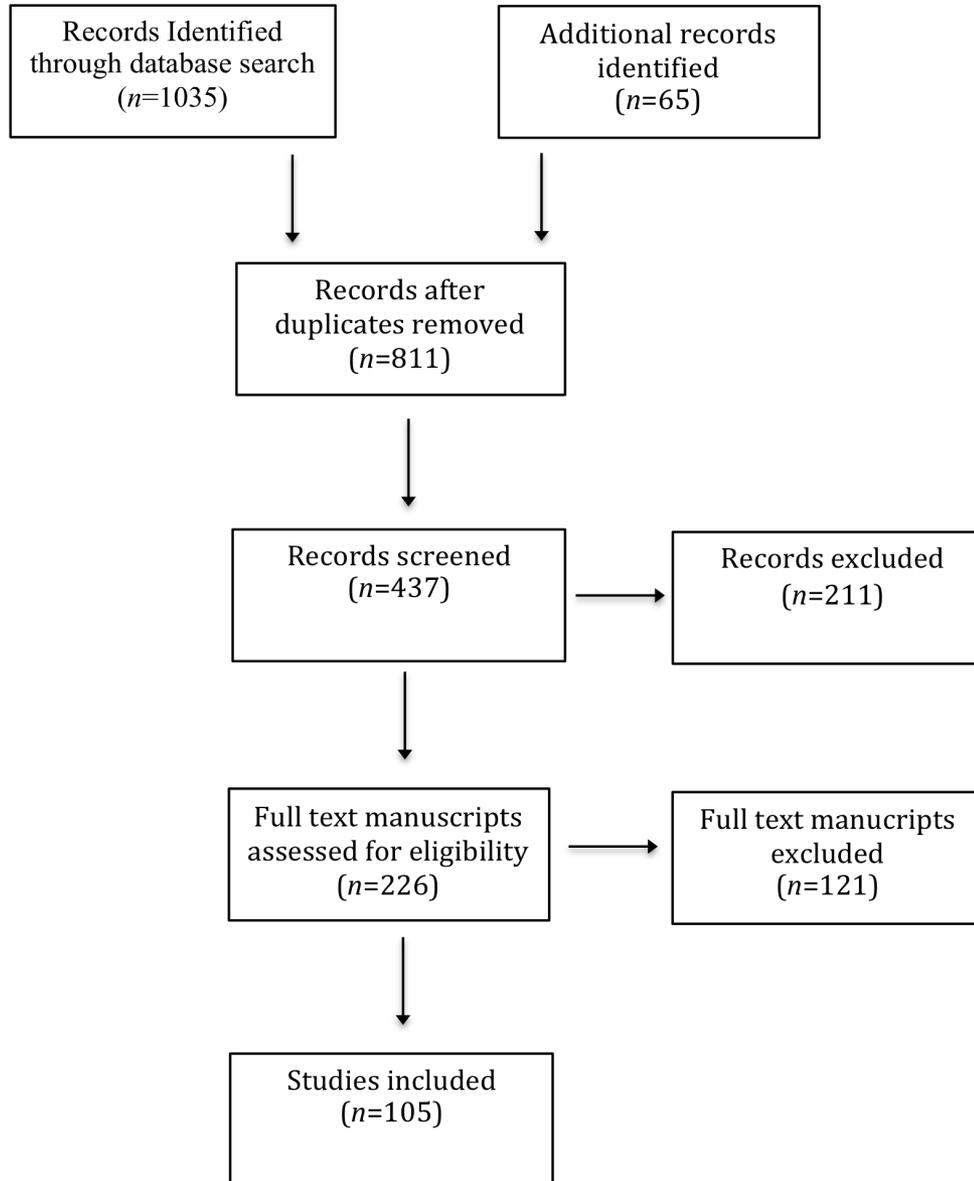


Fig. 1 Flow Chart of Decision Making Process for Social Presence Scoping Review

Data Analysis

Data was extracted using a data extraction form modeled after Peters et al.'s (2015) recommendations for systematic scoping reviews.

The form was then piloted with modification occurring until there was an 80% agreement between reviewers.

The data was then entered into word files with a content analysis (Hsieh & Shannon, 2005) pertinent to the objectives outlined conducted.

Descriptive characteristics of the social presence scoping review were obtained through a numerical analysis of the data extracted and charted.



Results

Numerical Analysis Results

The descriptive statistics of the scoping review presented as percentage of studies ($n=105$) include:

- Year of Publication
- Study Location
- Type of Online Learning Environ
- Study Design



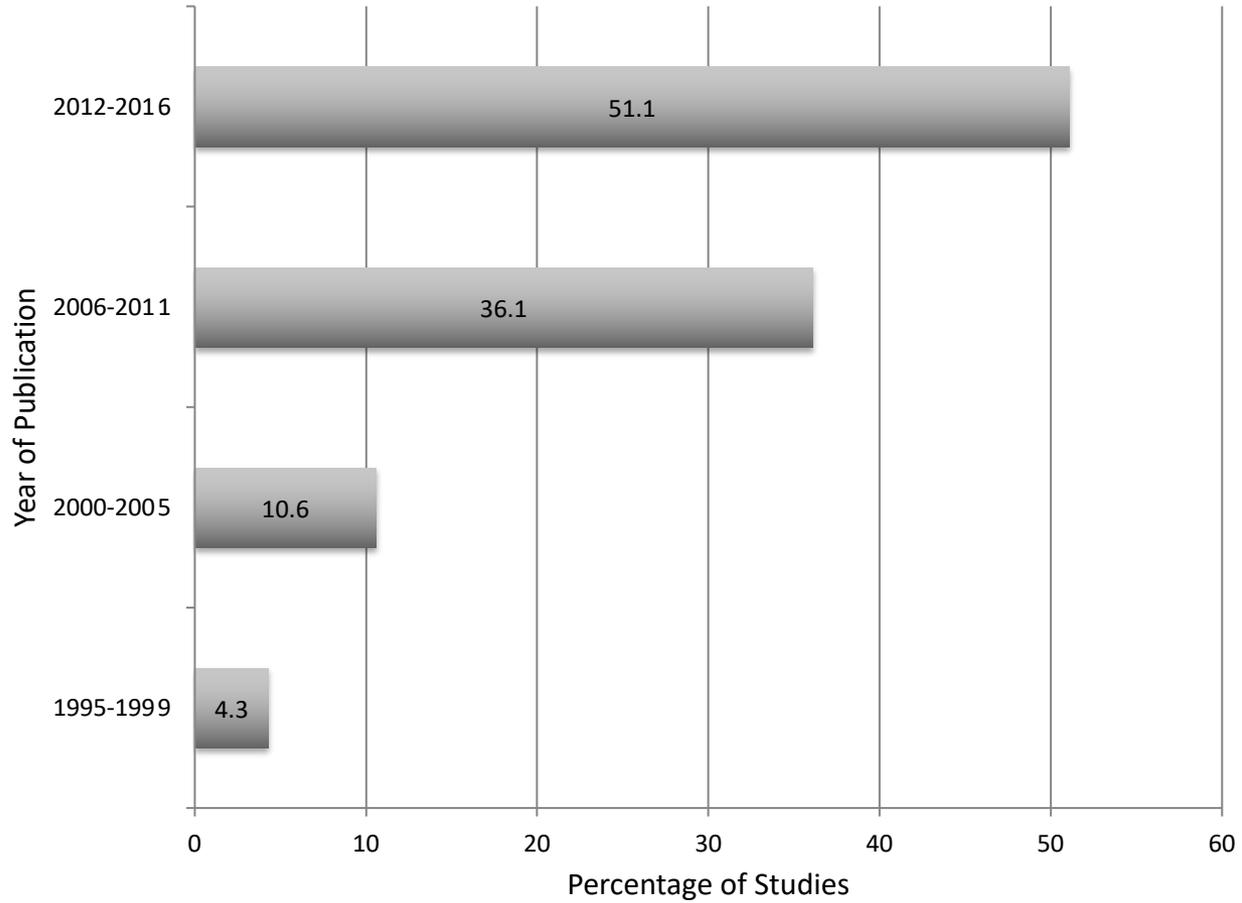


Fig. 2 Social Presence Studies by Year of Publication ($n=105$)



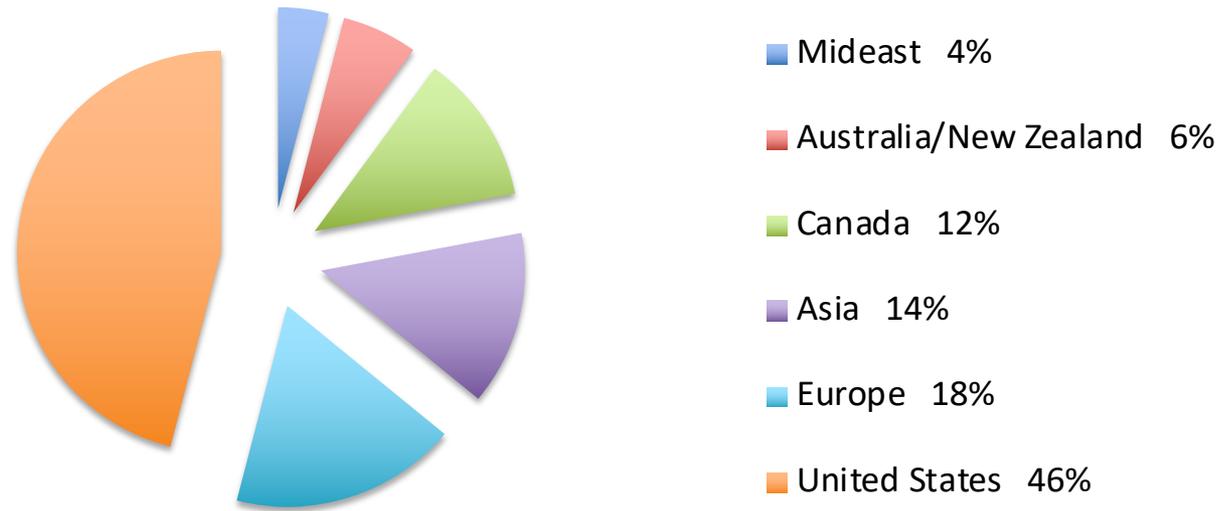


Fig. 3 Social Presence Studies by Geographical Area ($n=105$)



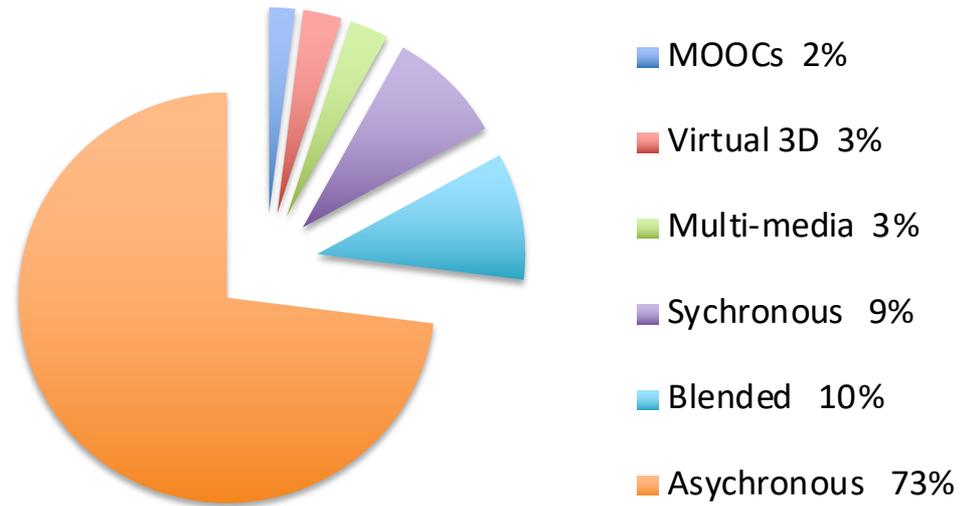


Fig. 4 Social Presence Studies by Type of Online Learning Environment ($n=105$)



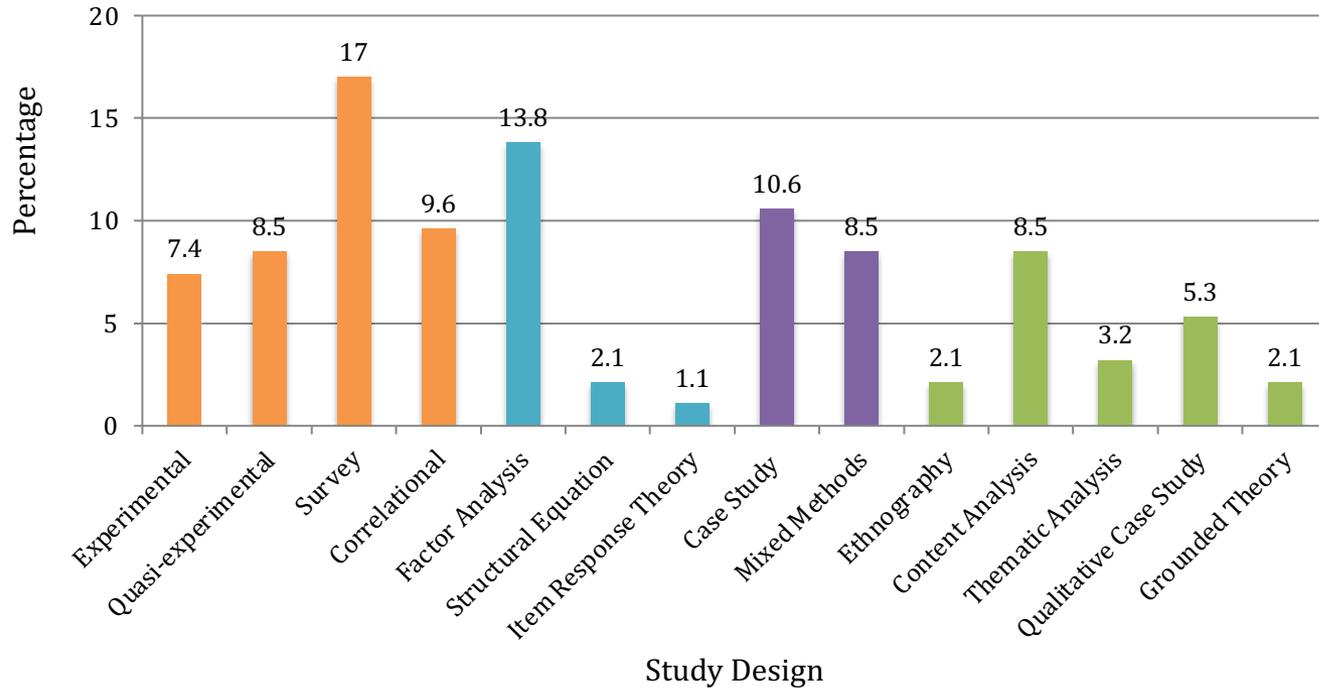


Fig. 5 Social Presence Studies by Study Design ($n=105$)



Results (cont'd)

Content Analysis Results

RQ1: Social and Technological Elements

Three overarching conceptual maps emerged representative of the practices and guidelines for:

- Establishing Social Presence
- Introducing Social Presence
- Sustaining Social Presence

Although the conceptual maps are reported as distinct, they are interwoven and interrelated across categories.



RQ1: Social and Technological Elements

Establishing Social Presence

The Establishing Social Presence conceptual map attends to foundational instructional design and pre-course activities.

The conceptual map is composed of the following three categories, their descriptors, and the studies extracted (see Table 2).

1. Design a Balance of Course Activities
2. Provide Course Information/Expectations
3. Creating a Safe Online Environment

This conceptual map also represents how instructors and course designers choose ways for students to enter and navigate a course, access evaluation materials, and what strategies instructors can employ to establish social presence in online environs.



Table 2
Establishing Social Presence Conceptual Map

Category	Descriptors	Authors
Design a Balance of Course Activities	Problem based & collaborative tasks; discussion forums, front-end analysis by instructional designers,	Aragon, 2003; Costley, 2016; Cui, Lockee & Meng, 2012; Kim, Kwon, & Chow 2011; Ostlund, 2008; So & Brush, 2008.
Provide Course Information/Expectations	Detail communication approaches; provide course preview; ungraded pre-lesson & feedback	Plante & Asslin , 2014; Mayne & Wu, 2011; Strong, Irby, Wynn, & McClure, 2012.
Creating a Safe Online Environment	Use positive relational responses; ensure privacy, trust, & respect to create intimacy & interactivity.	Gunawardena, 1995, Plante & Asselin, 2014; Mayne & Wu, 2011; Tu, 2001; Tu & Mclsaac, 2002



RQ1: Social and Technological Elements

Introducing Social Presence

The Introducing Social Presence conceptual map attends to facilitation type behaviors that are essential to establish instructor-to-learner and learner-to-learner connections.

The conceptual map is composed of the following three categories, their descriptors, and the studies extracted (see Table 3).

1. Welcoming Activities
2. Initiating Instructor Communication Patterns
3. Student Engagement in Content

This conceptual map also describes those instructor communication patterns that need be introduced, learned, and modeled by the instructor so as to establish effective affective communication patterns thereby enabling course participants to form a community of learners and establish norms for interaction and participation.



Table 3
Introducing Social Presence Conceptual Map

Category	Descriptors	Authors Extracted
Welcoming Activities	Welcome messages (audio or video); course orientation (self-guided or tutorials); biographies; syllabus scavenger hunt; digital storytelling.	Aragon, 2003; Dow, 2008; Kear, Chetwynd, & Jefferies, 2014; Mayne & Wu, 2011; Lowenthal & Dunlap, 2010; Plante & Asselin, 2014
Initiating Instructor Communication Patterns	Model and scaffold social presence behaviors; prompt responses; analyze student posts through a social presence coding template	Aragon, 2003; Chapman, Storeberg-Walker, & Stone, 2008; Cui, Lockee, & Meng, 2013; Gunawardena, 1995; Hughes, Ventura & Dando 2007; Lowenthal & Dunlap, 2010; Mayne & Wu, 2001; Rourke, Anderson, Garrison, & Archer, 1999.
Student Engagement in Content	Limit course enrollment (30:1); discussion groups<8; form groups based on interests, integrate social networking sites	Akcaoglu & Lee, 2016; Huang, 2016; Mathieson & Leafman, 2014; Mayne & Wu, 2011; Ostlund, 2008; Rovai, 2001; So & Brush, 2008; Tu, 2002.



RQ1: Social and Technological Elements

Sustaining Social Presence

The Sustaining Social Presence conceptual map refers to specific behaviors instructors and students can embody to enhance affective communication, increase intimacy, engage in immediacy and interactivity behaviors, thereby ensuring the maintenance of social presence as the course progresses.

The conceptual map is composed of the following three categories, their descriptors, and the studies extracted (see Table 4).

1. Discussions Forums
2. Assignment Feedback
3. Synchronous Meeting



Table 4
Sustaining Social Presence Conceptual Map

Category	Descriptors	Authors Extracted
Discussions Forums	Structured forums, assign roles; model moderation, synchronous- asynchronous video communication	Clark, Strudler, & Grove, 2015; Ke, 2010; Yamanda & Akahori, 2007.
Assignment Feedback	Keep feedback simple, prompt, positive & related to course work.	Aragon, 2003; Borup, West, Thomas, & Graham, 2014; Grieve, Padgett, & Moffitt, 2016; Tu & McIssac, 2002; Rovai, 2007.
Synchronous Meeting	Phone calls, small group chat/video, or coffee shop style conversations.	Aragon, 2003; Borup, West, & Graham, 2012; Mayne & Wu, 2001; Tucker, 2012.



RQ2: Outcomes of Social Presence

Outcomes of Social Presence were organized into one overarching conceptual map representative of the outcomes of social presence in online learning environs.

The four categories embedded within the Outcomes of Social Presence conceptual map are specific to research outcomes from the literature on social presence (see Table 5).

1. Group and Community Cohesion
1. Satisfaction
1. Participation
1. Knowledge Gain



Table 5.

Outcomes of Social Presence Conceptual Map

Category	Descriptors	Authors Extracted
Group and Community Cohesion	Enhances group cohesion and community in asynchronous formats, video enhanced discussion, and virtual learning networks.	Borup, West, & Graham, 2012; Clark, Strudler, & Grove, 2015; Colominia & Remesal (2015); Rogers & Lea (2005)
Satisfaction	Social presence as predictor of satisfaction in synchronous, asynchronous and blended environs	Giesbers, Reinties, Tempelaar, & Gijsselaers, 2014; Gunawardena & Zittle, 1997; Hostetter & Busch, 2006; Richardson & Swan, 2003; Scarborough, 2015; Sorden & Munene, 2013; Zhan & Mei, 2013.
Participation	Social presence enhances participant interaction & group interaction	Mayne & Wu (2011); Tu & Mclsaac, 2002; Wei, Chen, & Kinshuk (2012).
Knowledge Gain	Social presence: affects learning outcome; academic performance; mediates cognitive absorption; & predicts cognitive presence in synchronous/asynchronous, virtual, & blended environs.	Cho, Kim, & Paik, 2015; Garrison, Cleveland-Innes, & Fung 2010; Gutierrez-Santiuste, Rodríguez-Sabiote & Gallego-Arrufat, 2015; Hostetter & Busch 2013; Joksimović, Gašević, Kovanović, Riecke, & Hatala, 2015; Ke, 2010; Leong 2011; Shea & Bidjerano 2009; Wanstreet & Stein, 2011.



RQ3: Social Presence Definitions

Definitions of Social Presence were mapped and presented chronologically representative of the evolution of the social presence construct.

By way of background, presence research is thought of comprising three dimensions that include telepresence, co-presence and social presence (Biocca, Harms, & Burgoon, 2003; Kehrwald, 2010).

Biocca et al. (2003) described three classification schemes that include:

Co-presence or mutual awareness (Goffman, 1959)

Psychological involvement (Short, Williams & Christie, 1976)

Behavioral engagement as applied to virtual reality (Palmer, 1995)



Table 6

Social Presence Definitions

Author(s) and Social Presence Definition

- Short, Williams, & Christie (1976). The degree of salience of another person in an interaction and the consequent salience of an interpersonal relationship (p. 65).
- Gunawardena & Zittle (1997). The degree to which a person is perceived as real in computer mediated communication (p. 151).
- Rourke, Anderson, Garrison, & Archer (1999). Three elements of social presence: affective indicators (e.g., values, beliefs, feelings, and emotions); cohesive indicators (i.e., group presence and commitment); and interactive indicators (i.e., attending in a socially meaningful way)
- Garrison, Anderson, & Archer (2000). The ability of participants in a community of inquiry to project themselves socially and emotionally, as 'real' people (i.e., their full personality), through the medium of communication being used (p. 94)
- Tu and McIsaac (2002). Degree of feeling, perception, and reaction of being connected via CMC to another intellectual entity" (p.140).
- Tu & Yen, (2006); Yen & Tu, (2008). Social Presence as measured by computer mediated communication questionnaire reveals five-factor solution comprised of the social form of communication, privacy, intimacy, social context, and interactivity.
- Garrison (2009). The ability of participants to identify with the community, communicate purposefully in a trusting environment, and develop inter-personal relationships by way of projecting their individual personalities (p.352).
- Biocca, Harms, & Burgoon, (2003). The minimum level of social presence occurs when users feel that a form, behavior, or sensory experience indicates the presence of another intelligence (co-presence). The amount of social presence is the degree to which a user feels access to the intelligence (p.461).
- Kehrwald (2010). Social presence operates from the establishment of a telepresence and increases or decreases with the number of interactions, frequency of interactions, cues contained in the messages and the interpretation of those cues by others. The result is a dynamic sense of others and relationships with them in mediated environments (p.45).
- Kreijns, Kirschner, Jochems, & van Buuren (2011). The degree of illusion that others appear to be a 'real' physical person in either an immediate (i.e. real time/synchronous) or a delayed (i.e. time-deferred/asynchronous) communication episode (p. 366).
- Sung & Mayer (2012). The subjective feeling of being connected and together with others during computer mediated communication. The others can be real people (such as the instructor and fellow students) or pedagogical agents generated by a computer (p. 1739).
- Whiteside (2015). Social presence model for online blended environments that includes: affective association, community cohesion, instructor involvement, interaction, intensity; knowledge & experience (p.11).
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Discussion

Social presence research is gaining traction internationally.

Frequency of publications increasing on a year-to-year basis having almost doubled over the last four years.

Vast majority of research into the construct involves asynchronous learning.

Growing body of research involving blended learning, synchronous learning environments, and more recently MOOCs, and virtual 3D environments.

Study designs reflect both quantitative and increasingly qualitative methods, involving rating scales, surveys, content analysis, and interviews.



Discussion (cont'd)

Social presence has evolved from a two dimensional psychological state (e.g. immediacy and intimacy) to one that is both multidimensional and subjective in nature.

Not one consistent definition for the construct and it has not been operationalized uniformly, which muddles comparative analysis across learning environments (e.g. asynchronous, synchronous, blended, MOOC, virtual environments, etc.)

Confounding definitions of social presence, is the understanding of it

1. as a psychological/phenomenal state of individual users;
2. an interactive relational pattern of performable behaviors;
3. a property of the medium; or
4. an overarching critical literacy as suggested by Whiteside (2017).



Discussion (cont'd)

Students and instructors can be cultured to leverage social presence through the use of low-tech affective elements.

Lowenthal (2010) describes these low tech behaviors as human qualities established through personal sharing and assist in creating initial connections between the instructor and students.

Low tech elements: photos with biographical information ; digital stories, welcome messages (audio/video), screencasts, email etc.



Discussion (cont'd.)

As the technological sophistication of the medium developed, the effectiveness of asynchronous video communication; synchronous video communication; and social media (e.g. Twitter, Facebook, Cloud computing, LinkedIn) as a means to augment the development of social presence became more evident.

Even though a variety of technologies exist for use in a higher education online learning environment, their successful implementation is dependent on the degree to which those involved (e.g. instructors and students) embrace innovation and novelty.

Although positive benefits to the use of asynchronous video are reported (e.g. digital storytelling, screencasts, & announcements) the effectiveness of the practice is dependent on how asynchronous video is used to replace text.



Discussion (cont'd)

Affordances offered through synchronous web video conferencing tools did not augment social presence and lead to better student performance (as measured by grades) or more satisfied learners.

Possible explanations are offered by the degree to which synchronous video conferencing inhibits accessibility (e.g. anytime and anywhere) and, students overall acceptance/success in using new technologies.

Mixed results are reported for social networking as means to increase social presence. Intensity of student use of social networking sites (e.g. Facebook, LinkedIn, & Twitter) did not significantly impact social presence (Lim and Richardson, 2016).



Discussion (cont'd)

Findings related to the outcomes and effects of social presence are limited by their dependence on student perceptions and surveys as subjective measures of social presence (Biocca, et al., 2003; Chen et al., 2015).

Empirically grounded research that considers the inclusion of more objective measures of social presence that takes into account measurable outcomes such as academic performance, is advocated.



Conclusion

The study is limited by the data extracted and the manuscripts screened for inclusion, as it is specific to the parameters of the scoping review and therefore may not be exhaustive in nature.

Although positive outcomes have been reported for social presence, a comparative analysis is somewhat complicated by the various definitions proposed and the numerous technological advances that have come to characterize the medium and impact social presence.

Future research that advances a better understanding of the nomological network that links both the theoretical and empirical frameworks that validate social presence across a variety of learning environs is advocated.



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