

Virtual High School Teacher and Student Reactions to the Social Presence Model

Amy Garrett Dikkers
The University of North Carolina at Wilmington

Aimee L. Whiteside
The University of Tampa

Somer Lewis
The University of North Carolina at Wilmington

Abstract

Using the Social Presence Model (SPM), the authors explore the teacher and student experience at the North Carolina Virtual Public School (NCVPS), the largest public online secondary school where teachers design and develop the curriculum. Through a series of surveys, focus groups, and interviews, this two-year mixed methods study investigates the concept of social presence through the SPM. The overall findings suggest that teachers value all five elements of the SPM and see it as an important new heuristic for achieving increased student satisfaction and outcomes. Students largely did not find the Model useful, except for the Instructor Involvement element. Furthermore, because of their online learning experiences, students noted an increased investment in their own learning. Further analysis suggests the importance of integrating connectedness and social presence into student orientations and teacher professional development opportunities. Overall, social presence serves as learning a new language—a new literacy—that is essential to a successful online teaching and learning experience.

In our research, virtual public school teachers and students referred to teaching and learning in an online setting as learning a new language. Learning how to teach and learn online involves a considerable amount of flexibility, adaptability, and dedication from teachers and their students. School districts across the country are engaged in a massive effort to increase online learning opportunities. At the same time, these districts want to ensure that students feel a sense of belonging and a level of connection to their classmates and instructors. Many argue that building a sense of community can have a significant impact on student productivity, academic achievement, student attitudes, and overall engagement (Korinek, Walther-Thomas, McLaughlin, & Williams, 1999; Walberg & Greenberg, 1997). Additionally, students would like to connect and feel *present* in their schools, whether their learning environment is face-to-face or online (Garrett Dikkers, Whiteside, & Lewis, 2012).

However, with the limitations of online learning, in terms of face-to-face socialization, support, and other activities that contribute to a sense of belonging, a virtual teacher must work

harder to provide students with a cohesive environment and the social connections needed to foster academic growth. In recent years, K-12 online learning and virtual high schools have increased across the country (Picciano & Seaman, 2009, 2010; Watson, Murin, Vashaw, Gemin, & Rapp, 2012). A 2012 review of K-12 online learning confirms 27 states have established virtual schools that are at least partially funded at the state level and 31 states have fully online programs where students can complete all or most of their coursework online (Watson et al., 2012).

In the summer of 2007, the North Carolina Virtual Public School (NCVPS) began offering online courses to students across the state. Enrollment in the school increased rapidly, with an increase of 369% from 2008-2009 to 2009-2010 (Watson, Murin, Vashaw, Gemin, & Rapp, 2010). It served 88,716 course enrollments in 2010-11 for an increase of 20% from 2009-10 and 97,170 course enrollments in 2011-12 for an increase of 10% from the previous year. The current enrollment in the NCVPS is the second highest of any virtual school in the United States (Watson et al., 2012).

Oliver, Osborne, and Brady (2009) found that NCVPS students are generally pleased with their online courses. That said, students also possess certain expectations of their online learning experience, such as the need for increased instructor involvement and feedback (Hobgood, 2007). Studies found that students expect virtual teachers to instruct versus moderate, supplement course content, make content and projects relevant, incorporate discussion and interaction, respond to questions and grade assignments quickly, and provide individualized attention when necessary (Oliver, Osborne, & Brady, 2009).

With the continual growth of online learning and a greater understanding of student expectations, we wondered what teachers and students feel about the level of connectedness, or social presence, in their virtual classes. Therefore, we introduced the Social Presence Model to NCVPS teachers and students to learn more about their needs and perceptions in regard to the social aspects of online learning.

About NCVPS

The North Carolina Virtual Public School (NCVPS) offers “nearly 50,000 secondary students . . . over 150 Advanced Placement, Honors, Traditional, Credit Recovery, and Occupational Course of Study” course options (North Carolina Virtual Public School, 2013a). Although mainly targeting students in grades 9-12, the NCVPS maintains a limited number of eligible courses available to students in middle school. Students enroll in NCVPS through the eLearning Advisor at their local public school or in their district. NCVPS courses use the Moodle and Blackboard learning management systems. Most interaction is asynchronous, which gives students flexible, continuous access to their courses. Course structure includes a variety of learning experiences for students, including online discussions and collaborative projects.

NCVPS teachers must meet a variety of expectations. Expectations include attending an online orientation, maintaining synchronous contact with students, grading assignments, providing instructional feedback on assignments, serving office hours, returning communications within 24 hours, participating in learning communities for each course, participating in department meetings, and completing on-going professional development (North Carolina Virtual Public School, 2013b).

About the Study

In the first year of this study, we explored whether the Social Presence Model (SPM) was useful for NCVPS teachers. Our research question is as follows: What are NCVPS teachers' perceptions of the impact of the elements of the Social Presence Model on quality teaching and learning in online environments?

In the second year of the study, we extended our research to learn about NCVPS high school students' needs and perceptions in regard to the SPM. Our research questions are as follows: (a) What are NCVPS students' perceptions of the Social Presence Model for quality teaching and learning in online environments? and (b) Is the Social Presence Model a useful tool to gauge expectations of themselves and their teachers?

About the Social Presence Model

This study employs the Social Presence Model (SPM) as a theoretical framework. The SPM draws from a rich basis of literature in social psychology, literacy, cooperative learning, computer-mediated communication, and online and blended learning to focus on the social dimensions of online learning (Allen & Seaman, 2011; Gunawardena & Zittle, 1997; Lowenthal, 2009; Lowenthal, 2012; Picciano, 2002; Picciano & Seaman, 2009; Picciano & Seaman, 2010; Richardson & Swan, 2003; Rourke & Anderson, 2002; Rourke, Anderson, Garrison, & Archer, 1999; Rovai, 2002; Shea, Pickett, & Pelt, 2003; Stacey, 2002; Swan, 2002; Swan & Shih, 2005; Tu, 2001; Tu, 2002a; Tu, 2002b).

The concept of social presence originated in the telecommunication era of the late 1960s and 1970s as that which was lost in the remote communicative experience (Mehrabian, 1969; Short, Williams, & Christie, 1976; Tammelin, 1998). As various interactive and other communication media evolved in the coming decades, such as teleconferencing, interactive television, and online learning environments, a flurry of definitions for social presence emerged. Rettie (2003) and Tu and McLissac (2002) suggest that despite the myriad of definitions, the concept of social presence still remains unclear.

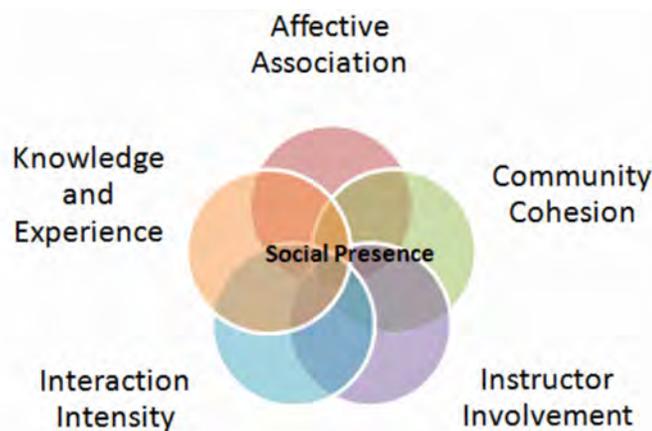
To add clarity, Rettie (2003) divides social presence research into two very distinct categories: (a) research that addresses social presence as a "property of a medium in mediated communication" and (b) research that "refers to the perceptions, behaviors, or attitudes of the participants in a mediated interaction" (p. 1). Whiteside (2007, in press) suggests an extension of Rettie's research into a third category that views social presence as focused away from mere behaviors and perceptions and instead seeking to create meaningful and significant online learning experiences. Ultimately, this category of research examines the connectedness that motivates participants to take an active role in their own and their peers' construction of knowledge and meaning-making (Whiteside, Hughes, & McLeod, 2005; Whiteside, 2007; Whiteside, in press).

In this third category, many researchers in social presence gravitated to the Community of Inquiry (COI) Model. This theoretical framework, expertly crafted by Garrison, Anderson, and Archer (2000) and refined by subsequent researchers, suggests that a deep and meaningful online learning experience forms "through the development of three interdependent elements - social, cognitive and teaching presence" (Community of Inquiry, 2000). An impressive body of literature came from this Model (Akyol, Vaughan, & Garrison, 2011; Arbaugh et al., 2008; Boston et al., 2009; Garrison, Anderson, & Archer, 2000, 2010; Garrison & Arbaugh, 2007; Rourke & Kanuka, 2009; Shea & Bidjerano, 2010, 2012; Shea et al., 2010; Swan et al., 2008; Wanstreet & Stein, 2011).

As the COI began to emerge with new innovative research, so too did the Social Presence Model (Garrett Dikkers & Whiteside, 2008; Garrett Dikkers et al., 2012; Whiteside, 2007, in press; Whiteside & Garrett Dikkers, 2008, 2009, 2010, 2012). While similar to COI, the Social Presence Model (SPM) perceives social presence as the overarching concept that encases COI concepts, such as teacher presence and cognitive presence.

The SPM shown in Figure 1 originated with a twenty-six month study (2003-2005), was refined and published (2005-2007), and was tested (2008-present) with several studies in higher education (Whiteside & Garrett Dikkers, 2008, 2009, 2012) as well as secondary education (Garrett Dikkers et al., 2012). Three of the five elements of the Social Presence Model—*Affective Association*, *Community Cohesion*, and *Interactive Intensity*—derive from the research of Rourke, Anderson, Garrison, and Archer (1999) and Swan (2002). The other two components of the Social Presence Model—*Instructor Involvement* and *Knowledge and Experience*—derive from the result of a twenty-six month study of two cohorts of an online graduate-level certificate program (Whiteside, 2007, in press). *Instructor Involvement* emerged from findings that showed that the instructor's strategies and other types of involvement (ice breaker activities as well as daily instructional activities) are paramount in establishing social presence; seemingly small changes from one year to the next year can result in significant changes to the level of social presence. Additionally, Whiteside (2007, in press) suggests that the amount of prior knowledge and experiences students are willing to share affects the level of social presence. Figure 1 illustrates the five elements of the Model. Each element of the SPM will be further defined and supported in the Results and Finding section.

Figure 1. Social Presence Model



In sum, the SPM centers on five integrated elements (*Affective Association*, *Community Cohesion*, *Instructor Involvement*, *Interaction Intensity*, and *Knowledge and Experience*) that together determine a participant's motivation to take an active role in their own and their peers' meaning-making processes. Armed with this definition, this study employs a set of precise methods and data sources.

Methods and Data Sources

The mixed methods research study follows a sequential explanatory design with a survey of NCVPS teachers and students followed by interviews and focus groups to build on and further explain the results of the quantitative data (Creswell, 2009). Data sources, therefore, include teacher and student survey responses as well as teacher interview and focus group transcriptions.

Since the literature points to survey methods as the best approach for mid- to large-sized populations (Babbie, 1973), we designed a 17-question survey with demographic, closed-choice, Likert-scale, and open-ended questions. In Spring 2011, the Chief Academic Officer (CAO) of the North Carolina Virtual Public School sent an email with a link to the teacher survey through the NCVPS teacher listserv asking for their participation. The last question of the survey asked teachers to signify their interest in a follow-up interview by clicking on a link to an additional survey, in order to maintain anonymity.

The interviews covered the main topics of the research study and asked for teachers to elaborate on general responses in the survey. Upon initial analysis of the survey and interviews, we identified areas of confusion or contradiction in the data and scheduled focus groups with local teachers who teach in face-to-face buildings and in the NVCPS in order to ask for elaboration on those topics. Interviews and focus groups were audio-recorded and transcribed in to ensure accuracy of data for analysis (Merriam, 1998).

At the time of the study, there were 350 active teachers in NCVPS, all of whom subscribed to the email listserv. Other subscribers and potential respondents included active teacher assistants and teachers new to NCVPS who had not yet taught online. The NCVPS does not have a final number for subscribers to the listserv, but the NCVPS CAO estimates the total possible response pool was 400 teachers. We had 214 respondents, for a response rate of approximately 54%. Additionally, we conducted five telephone interviews and conducted two focus groups with seven total participants.

The student survey questions were adapted from the teacher survey, with a total of 24 questions. For the student participants in Year 2, in Spring 2012, a local teacher who co-teaches with a NCVPS teacher piloted our survey to determine its fit for students in the NCVPS. Then, three students who had previously taken online courses but were not in the current pool of possible participants also piloted and engaged in think-aloud protocol sessions about the survey. After providing her feedback, the NCVPS Chief Academic Officer granted permission for the survey to be distributed and posted a link to the survey as an institutional announcement in the course management system. She also sent an email to teachers to encourage their students to complete it. The first round of student data collection ended in mid-June 2012 with 174 student participants.

Data analysis techniques include descriptive statistics, as well as established and emergent coding of qualitative responses from the survey open-ended questions, interviews, and focus groups. Additionally, researchers developed a Codebook with a four-member coding team where they individually analyzed one teacher interview. Through a process of building inter-rater reliability and a series of three team meetings for consensus agreement, the final Codebook consisted of ten main codes and one subcode (Creswell, 2009). The five elements of the Social Presence Model provided additional guidance for data analysis.

Results and Findings

When asked about the utility of the Social Presence Model for teaching and learning in an online environment, many teachers included general statements that “all of these components [of the Social Presence Model] must be present for the online environment to work.”

Overall, the data suggest that NCVPS teachers and students found that the *Instructor Involvement* element of the Social Presence Model played a key role in their quality online teaching and learning. Students agreed that this aspect of the Model was most important. Teachers’ and students’ perceptions of the impact of all elements of the Social Presence Model on quality teaching and learning in online environments are summarized in Table 1.

Table 1

Teacher and Student Views as a Percentage of Importance of Social Presence Model

Model Aspect	Teachers		Students	
	VI/I	SI/NI	VI/I	SI/NI
Affective Association	78.30	21.70	58.2	41.8
Community Cohesion	71.9	29.1	65.4	34.6
Interaction Intensity	82.2	17.8	76	24
Knowledge and Experience	89.0	11.0	82.1	17.9
Instructor Involvement	96.7	3.3	91.0	9.0

Note. VI= Very important; I= Important; SI= Somewhat important; NI= Not important

The next sections provide deeper insight into teacher and student perceptions of each element of the Social Presence Model.

Affective Association

Affective Association addresses the emotional connections between and among participants in the course. Interestingly, the fewest number of NCVPS students rated Affective Association as very important or important to their learning. Affective Association was also rated with lower importance by NCVPS teachers, although the

majority of them saw the benefit of affect in online learning. One teacher explains her perspective on Affective Association by listing the tools she uses: “Getting to know my students through personal connections like pronto or texting helps to increase the affective association and create emotional connections.” Likewise, one student explains, “I think emotion is important because it's through a computer and people have emotions, computers don't. So it can seem a little discouraging at times if nobody seems emotional in a sense to the course.”

Students did mention the use of emoticons (a key way emotion is conveyed online) in emails, discussion board posts, and texts; however, another student participant writes, “no one needs emotion in a class [although] it is nice to have.” Notably, one student mentions how affect and interaction are not essential to her learning because she came into the online class specifically hoping for some exclusion, to get away from emotion that wouldn't be “as much of a distractor as it would be in a face-to-face classroom.”

Community Cohesion

Community Cohesion represents the extent to which participants see the group as a community. Teachers discuss the importance of building connections with their students. One teacher mentions s/he was “more aware of the need to build and maintain positive relationships with students.” Another explains, “Since teaching online, I have come to understand the barriers that students believe exist between themselves and their teachers. I now distribute my cell phone # for text messages from face-to-face students. . . . On snow days or when they are sick or just need a quick question asked, they can ping me and it is just great.”

Students talk about how a sense of community helps “reduce stress and the sense of loneliness” and how it is important for “each student . . . to help each other student . . . in order for everyone to do well in the class.” Many students mention the importance of community, but also discuss how little community they sense in their online environment. Others state that community is not as important as other aspects of the model, like *Instructor Involvement*; for example, “Im [*sic*] really dont [*sic*] need emotional involvement or community cohesion to learn effectively. I do enjoy instructor involvement mostly to know that work is being critiqued.”

Interaction Intensity

Interaction Intensity refers to the level of interaction among participants. Teachers discuss interaction between themselves and their students; for example, regarding using synchronous contact as a strategy to promote Interaction Intensity, one teacher comments, “Between Facebook, Twitter, Google Voice, email, phone calls, and Pronto, I'd say that one cannot proactively or reactively have more interaction intensity than me!” They also discuss how online students are just like face-to-face students – some will actively participate in groups, while others will not. Due to the nature of the enrollment structure for the online courses, some students enroll in a course with peers from the same face-to-face school. In many cases, the students have a study hall period where they can then work together face-to-face to do some of their online activities.

Likewise, many students interpret *Interaction Intensity* as one-on-one interaction with their instructor. Other students state the only interaction they have with their fellow

students is through discussion boards. Positive reasons for interaction with their fellow students include getting help on assignments, helping them to stay motivated and interested in the class, and, in general, completing more coursework. One student mentions that interaction could actually be distracting. This participant states:

Part of the reason I'm not reaching my full potential in school in general is because students interact too much. They aren't motivated to learn and instead talk during instructional time. So the class is built on self learning or learning directly from the teacher and past knowledge. Now, student interaction is something most students enjoy, but that's for outside the classroom, because the classroom is for learning.

Knowledge and Experience

This element refers to sharing prior knowledge and experiences. Many NCVPS courses have pre-assessments where the students and teacher can identify specific content areas where students struggle. Since students in online courses at NCVPS come from districts all across the state, they have not necessarily followed the same curriculum sequences. NCVPS teachers are challenged to individualize instruction for a diverse group of learners. One teacher participant specifically explains this challenge within the context of her SAT Prep class:

A lot of students who are academically underprepared . . . [and] do not have computer access at home [are in the class], so their knowledge and experience with any sort of technology is very limited. . . . They are from day 1 overwhelmed, intimidated, and turned off because they do not know what they are doing and, thank you very much, no one has bothered to help them. Meanwhile I have the other student on the other side of the coin. . . . What I like to do is hook up the students who have the knowledge and experience with those who do not as much as possible. We start there.

She capitalizes on the diversity of knowledge by having some more advanced students facilitate discussion boards:

I found through a thousand years of teaching, sometimes a student can explain something better to another student than a grown up can. And also there is that comfort with being perfectly honest and open with another student, with a peer, so it provides just an alternative means for my shyer students or my students who are not that keen on talking to an adult; it provides them another avenue for getting information. But it also provides my students an opportunity to show leadership. It gives them an avenue to be leaders.

Some student comments supported these practices. For example, one student stated:

Bringing already learned knowledge and experience to the class is helpful for when students don't understand the material and another student does. They can

explain to the other student what they aren't getting in better terms than an instructor [*sic*] could I believe.

Instructor Involvement

Instructor Involvement refers to the extent to which the instructor(s) is an invested, active partner in the learning community. Forty-eight percent of students identified “A lot” of *Instructor Involvement* in their course. Moreover, 91% of students note *Instructor Involvement* as being very important or important to their learning in their online courses. One student explains it very simply: “Instructor involvement is important. If we already knew the material we wouldn't be enrolled in the class, the instructor doesn't have to do anything but they need to help guide us in the right direction.”

In the courses themselves, some NCVPS teachers find creative and powerful ways to integrate online tools to increase interactivity. One teacher describes using the whiteboard function of the instant messaging tool to explain concepts to a struggling student:

You can add to the course to make it a little more user friendly or make it so the students understand things a little bit better. That's why we use a lot the instant messaging which is almost like face to face because the student is typing and you are typing back. And then you can also pull out a white board and show them how to do problems and they can save that to their computer so they have the work the teacher did.

Teachers also see the value in their high levels of synchronous involvement in the course, as does the NCVPS administration. NCVPS teachers are contractually obliged to make synchronous contact with students, parents, and the district or school's distance learning advisor (North Carolina Virtual Public School, 2013b). One teacher explains:

There has to be a lot of communication between the teacher and the students and the teacher and the parent and the teacher and the advisor. There is more of that with those students who do not follow up because we really have a schedule of when they are supposed to do what. And I don't mind too much if they are about a week off but when it starts falling into a week and a half two weeks behind then I start reminding them that this is a daily course. They have to get online and do something. It gets followed up with a note to the parent and DLA – the advisor.

Synchronous contact with students in the online environment is valuable, but can be a challenge, since teachers and students, many of whom also have face-to-face classes, are not always online at the same time.

In general, instructors see their role as vital to student success in the course:

- “I think it is very important for students to recognize that the instructor is a real person that cares about their success in the course. They want to know that I am working as hard toward their success as they are.”
- “I think that ... the teacher has to believe in the students and the content. We have to be willing to take risks and share information about ourselves with our students. I truly believe that rapport is a vital part of education. If a student has a rapport with you, he/she

is more willing to work harder for you! Students aren't going to be invested if they know their instructor isn't."

- "Instructor Investment [*sic*] is the MOST important aspect of the Social Presence Model because we are the stewards, custodians, and leaders of our class, and we must provide a solid model for our students to emulate."

Implications and Discussion

Overall, teachers were very positive respective to the Social Presence Model. They saw value in many aspects of the Model to support the work they already do to strengthen the online learning environment for their students. Teachers also seemed to appreciate seeing a model to help them understand how to create high quality online learning experiences. Although they were intrigued by all areas of the SPM, they saw themselves (and *Instructor Involvement*) as key to their students' learning.

Several students explained their views on the Model overall, providing insight into their expectations of themselves and others in the online environment. In some cases, their responses were contradictory, and there was a wide range of responses with some students seeing community as very important, and others seeing it as nonessential and insignificant. Two representative student explanations follow:

Affective Association: I don't think emotion is a huge part because its [*sic*] just a class, but it is nice to have. Community Cohesion: I think online learning is more independent, so you don't really need a community. Instructor Involvement: People tend to do things better when they know they are doing things right and good. Interaction Intensity: It is good to know what other people think so you can compare and maybe change what you think or back up what you originally thought. Knowledge and Experience: It is good to share what you know to boost yourself up and learn more.

I beleive [*sic*] that emotion is a little important only because we need to relate to our teacher somewhat to be interested in the material, but we could get along without it. Community cohesion is important because if someone doesn't know how to do something, it is good for someone else to help. Instructor involvement is very important because she is the one who tell us how and what to do, when to do it, what it should include, etc. She is our guide so we learn properly, and she also provides the knowledge we need to succeed [*sic*] in the course. She is also the most helpful person available. Interaction intensity is a little important because we need some connection to our peers so we don't feel like we will have to do everything by ourselves, but we could do it all if we had to. Knowledge and experience is very important because giving personal experiences is a great way to provide the outcome of situations, opinions give a better perspective of the topic, and inference makes you give more thought to the topic.

Unlike our research with teachers, the students did not elaborate on their experience and none, to date, have volunteered for interviews or focus groups, which has left us with more questions than answers about their overall learning experience. Students also provided conflicting reports at times; they saw themselves as key to the process, but they still wanted the one-to-one access with their instructors. They like the autonomy of online learning, but they still

wanted guidance and deadlines from their instructors. Our research with students suggests one significant challenge: most 9-12 students appear not to understand how models can help make sense of their experiences. With no explanation from a teacher or the research team about the Model, it was a challenge for them to know what to make of it.

Conclusion

In closing, based on the data, we suggest integrating the Social Presence Model (SPM) into teacher professional development opportunities. NCVPS teachers spoke highly of the professional development they were offered by the school. Many teachers discussed using the skills, tools, and strategies they learned through NCVPS to strengthen their face-to-face teaching and to share with their building-level colleagues. One teacher noted:

Animoto, and Blogster, and there are so many things that I wouldn't have gotten the professional development from my county, so I feel like I'm able to take the things that I've learned through NCVPS and what they're doing and almost, either the next day or you know, the next school year, apply it and then share it with other face to face teachers. So I feel like we're way ahead of the curve.

Therefore, the data suggests that professional development on building social presence in virtual school courses would be appreciated by the teachers in the current study and would strengthen an already robust professional development program at NCVPS.

Regarding next steps for students, the data suggest that NCVPS students need an initial orientation session to help them understand the complexities of online learning experience and to help them develop new literacies and skill sets to make the most of their online learning experience. Providing more targeted training on time management, community-building, and connectedness in online environments could increase satisfaction, motivation, retention, and completion.

Additionally, we noted that this research represents one of few, if any, studies focused on both teacher and student needs and perceptions of quality online learning experiences at the high school level. The data set provides triangulated results from surveys, focus groups, and interviews. As one teacher participant commented, "Well, it is nice to know this is being studied because I know there are issues to overcome...I am glad you are doing the research." Therefore, we urge the continuation of mixed methods research that focuses on both teacher and student needs for quality online learning experiences in virtual schools.

Finally, the data suggests that social presence represents an important literacy for online teachers and students. This literacy is akin to any influential literacy, such as technological literacy, rhetorical literacy, and media literacy. It is a literacy that requires careful consideration, cultivation, and continued exploration. Social presence through the Social Presence Model equates to learning a new language and represents a quality that is essential to a successful, meaningful online teaching and learning experience.

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