

Students' Perceptions of Social Presence: Rhetorical and Relational Goals Across Three Mediated Instructional Designs

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sarah.kercksmar@uky.edu**Abstract**

The explosion in the number of students taking online courses warrants a deeper understanding of instructor strategies that meet rhetorical and relational goals. Guided by social presence theory and rhetorical and relational goals theory, 329 participants were randomly assigned into one of three manipulated social presence online learning conditions to watch a short lecture. The student perceptions of social presence, instructor–student rapport, and perceptions of the instructor competence were examined as influential factors in learning (i.e., perceived and actual recall). Generally, students' rhetorical and relational goals were more likely to be met in online courses that included higher levels of social presence via auditory and text or auditory, text, and visual components when compared to a text-only format. Further, students demonstrated better quiz performance in conditions with higher social presence. However, only instructor competence, and not social presence or instructor rapport, predicted students' quiz performance.

Keywords: social presence, rhetorical and relational goals, modality, competence, rapport

Introduction

In 2011, approximately 6.7 million students in the United States were taking at least one online course, an increase of 570,000 students from 2010 ([Allen & Seaman, 2013](#)). At the postsecondary level, 65% of institutions report offering online courses and 32% report that they offer degree programs intended to be completed entirely online ([Parsad & Lewis, 2008](#)). Despite the growing popularity of online courses, many instructors, students, and administrators are hesitant to believe that online learning and computer-mediated communication (CMC) can be as effective as a face-to-face (F2F) course with live interaction. [Bejerano \(2008\)](#) summarizes common concerns, maintaining "that online education cannot possibly replicate the learning that occurs in traditional face-to-face classrooms" (p. 411) because students miss out on important interpersonal connections, some students lack the self-discipline to learn on their own, instructors find it effortful, time consuming, and relationally unrewarding, and online courses do not always meet learning objectives. These challenges may continue to plague online education when there is a "failure to place pedagogy prior to technology," which "results in little or no net instructional gain" ([Lane & Shelton, 2001](#), p. 248).

[Sherblom \(2010\)](#) asserts that "the challenge for the CMC classroom instructor is to choose the appropriate CMC medium (media richness), develop social presence within it (social presence), [and] devote the time, effort, and communication strategies required for effective interaction" (p. 511). He stresses that social presence is critical to online classroom success. Consequently, research is needed to identify ways in which instructors can overcome these instructional challenges and incorporate social presence into the classroom in ways that build connections, increase student learning, and still gain relational rewards for both teachers and students. Using social presence theory (Short, Williams, & Christie, 1976) and rhetorical and relational goals theory (Mottet, Frymier, & Beebe, 2006), the study reported in this paper compares three online instructional formats to understand how an instructor's conscious decisions about pedagogical strategies and uses of technology impact student perceptions of social presence, the instructor–student relationship, and perceived and actual student learning.

Literature Review and Theoretical Framework

Prior to the widespread usage and dissemination of multimedia technologies, social presence theory (SPT) (Short et al., 1976) was conceptualized in order to understand if a sense of warmth, connection, or closeness between interaction partners could be achieved via a medium. Historically, the term "social presence" has been used to describe a sense of being co-present with others or generally as the belief that another person is close or salient in a mediated communication situation (Biocca & Nowak, 2002; Heeter, 1992; Short et al., 1976). More recently, social presence has been described as a psychological state ([Lee, 2004](#)) composed of synthesized verbal (e.g., vocalics) and nonverbal (e.g., eye contact) factors ([Allmendinger, 2010](#)). Since it was initially proposed, SPT has been applied across various domains and contexts in order to understand how technology and media can provide for a rich and relationally significant experience.

[Biocca and Harms \(2002\)](#) assert that communication technologies all share a common goal in that they are inherently designed and created with the aim of fostering social presence. However, all technologies are not created equal. In fact, many of the early studies that focused on various types of communication technology (e.g., telephone, video conferencing), consistently showed that F2F communication was preferable because communication mediated by technology was lacking in social presence ([Rice, 1993](#)). Whereas this is typical of most early studies involving social presence and technology, many of the current studies support the idea that both CMC and interface features of new communication technology are well suited for increasing social presence and the net benefits that often accompany increases in social presence ([Cui, Lockee, & Meng, 2012](#)).

According to the bulk of research on social presence and technology, increasing or bolstering levels of social presence often leads to more effective communication ([Cui et al., 2012](#); [Lombard & Ditton, 1997](#)). Social presence can manifest in many ways depending on the format of technology and the context of interaction. Although F2F settings are considered to have the most social presence, new technologies allow for social presence to exist in computer-mediated interactions as well. Of particular interest to the online instructional context, instructors can now interact with students via synchronous chat, with web calling and video from web cameras. These channels allow for social cues to be captured and evaluated by students and instructors, which should enhance perceptions of social presence. Theoretically, there

are many benefits associated with increased social presence in online instructional settings, but empirical validation of these effects is varied.

As mentioned, some of the earliest social presence studies (e.g., Short et al., 1976) compared text-based mediums with those of audio and video modalities. These modalities differ in that diverse factors identified by [Allmendinger \(2010\)](#) are introduced, which may contribute to perceptions of presence. Specifically, text contributes visual factors; audio contributes vocalics; and video contributes visual factors and nonverbal factors. In online learning environments, researchers have manipulated technological features and formats associated with online courses to understand social presence and its subsequent effects. Extant research has linked social presence in online learning environments to increased perceptions of learning ([Arbaugh, 2005](#); [Richardson & Swan, 2003](#)), satisfaction with the course ([Richardson & Swan, 2003](#); [Swan & Shih, 2005](#)), and learning satisfaction ([Arbaugh & Benbunan-Finch, 2006](#)). While this body of research seems to show that social presence in online environments has relatively positive effects, there is still a need for researchers to more systematically investigate exactly which types of online formats and modes of instruction are most effective in bolstering instructor–student relationships and actual (rather than perceived) learning. Even though it is well documented that social presence can increase instructor immediacy ([Cui et al., 2012](#); [Schutt, Allen, & Laumakis, 2009](#)), it remains unclear how the differences in online instructional formats impact specific aspects of the instructor–student relationship. More specifically, social presence likely influences both the rhetorical and relational goals of instructors and students in online instructional settings.

Mottet et al. (2006) developed the rhetorical and relational goals theory of instruction (RRGT). According to Mottet and colleagues, each classroom is based on the needs and goals of both students and teachers. Both parties have relational needs to be liked and affirmed in the classroom. Likewise, both parties also have rhetorical needs to achieve a task and, for the student, these needs are often related to achieving a particular grade. Further, Mottet et al. propose that instructors make choices about their behaviors in order to meet the classroom goals, juggling both relational and rhetorical needs simultaneously. When both goals are met and student needs are fulfilled, then greater learning can occur ([Frymier, 2007](#); [Mottet et al., 2006](#)). This instructional perspective is similar to the mass media assumption that technology mediums are used to achieve both social and task goals ([Rice, 1993](#)).

In the few studies that have tested the rhetorical and relational goals theory of instruction, scholars (e.g., [Claus, Booth-Butterfield, & Chory, 2012](#); [Frymier, 2007](#); [Stephens & Mottet, 2008](#); [Wrench, Brogan, Wrench, & McKean, 2010](#)) have been able to support the existence of two interdependent sets of goals (i.e., rhetorical and relational). While interdependent, Claus et al.'s finding suggests that academic and rhetorical goals may be more important to students and may drive their relational behaviors with their instructors.

Nearly every study using this theoretical tradition has examined rhetorical and relational goals in F2F classrooms. Yet, the expectations of online and F2F students often differ in regards to the academic and interpersonal needs of the instructor ([McArthur & Bostedo-Conway, 2012](#)). In one exception to the F2F RRG T studies, [McArthur and Bostedo-Conway](#) found that instructors who used Twitter not only increased perceptions that they were interacting with their students appropriately achieving relational goals, but that Twitter was one way to enhance student learning to achieve rhetorical goals. In another example, [Stephens and Mottet \(2008\)](#) examined a computer-mediated setting, web conference training, using this perspective. In their study, they manipulated the use of technology, and the interactivity was not related to satisfaction or learning. While these studies did include instructional technology ([McArthur & Bostedo-Conway, 2012](#); [Stephens & Mottet, 2008](#)), they did not focus on social presence as an instructor tactic to increase perceptions of relational and rhetorical goals being met. The current study extends research and continues to employ the RRG T model to examine the intricacies of how both rhetorical and relational goals may be met by instructors' social presence in online learning environments.

Social Presence and Rhetorical Goals

Previous research has examined how the use of technology may affect perceptions of an instructor's credibility, or students' perceptions of an instructor's caring, trustworthiness, and competence. In general, instructors who use minimal to moderate levels of technology were considered competent, caring, and trustworthy ([Schrodt & Witt, 2006](#)), and those who were appropriate in their use of technology tools such as [Facebook](#) and [Twitter](#) were more credible ([Johnson, 2011](#); [Mazer, Murphy, & Simonds, 2007](#)). Because previous scholars have equated immediacy with social presence (e.g., [Hackman & Walker, 1990](#); [Schutt et al., 2009](#)) and [Schrodt and Witt](#) reported that levels of immediacy were related to higher

student perceptions of instructor credibility, the authors expected that a similar pattern would emerge in the present study regarding perceptions of instructor competence in online learning environments. Thus the first hypothesis that they sought to test was as follows:

H₁: Students will perceive greater instructor competence in the high-presence condition, followed by the moderate- and low-presence conditions.

[Ellis \(2004\)](#) argues that the primary goal of instructors is to enhance student cognitive learning, or students' ability to demonstrate knowledge acquisition and the ability to recall and use that knowledge (Bloom, Englehart, Farst, Walker, & Krathwohl, 1956; [Ellis, 2004](#)). In an online setting, course design ([Swan, 2001](#)), instructor immediacy ([Baker, 2004](#)), and social presence have all been linked to enhanced perceptions of cognitive learning ([Richardson & Swan, 2003](#)). However, Ellis' argument can be interpreted as referring to actual, as opposed to perceived, learning. In light of this, the following two hypotheses were posed:

H₂: Students will report greater perceived learning in the high-presence condition, followed by the moderate- and low-presence conditions.

H₃: Students will report greater actual learning in the high-presence condition, followed by the moderate- and low-presence conditions.

Social Presence and Relational Goals

Schutt et al. (2009) contend that presence should not just be about the salience of the individual, but also the salience of the perceived relationship between the communicators. [Tu and Mclsaac \(2002\)](#) also address the relational side of social presence. They maintain that social presence allows for individuals to feel a sense of community. [Hackman and Walker \(1990\)](#) found that the design of a mediated system led to more contact, and specifically, feelings of rapport with an instructor. In F2F instructional settings, rapport involves feelings of mutual trust and enjoyment between the instructor and student ([Frisby & Martin, 2010](#)). Because we like people that we trust ([Walther & Bunz, 2005](#)), who are caring ([Bell & Daly, 1984](#)), and that we feel rapport with ([Frisby & Martin, 2010](#)), and given [Byron and Baldrige's \(2007\)](#) finding that presence in mediated messages leads to liking, it is plausible that social presence will also lead to perceptions of rapport with an instructor. The fourth hypothesis was:

H₄: Students will perceive greater rapport with the instructor in the high-presence condition, followed by the moderate- and low-presence conditions.

As noted, past research has linked social presence to perceived cognitive learning (e.g., [Richardson & Swan, 2003](#)), instructor competence to perceived learning (Bolkan & Goodboy, 2009), and instructor–student rapport to perceived learning ([Frisby & Martin, 2010](#)). The RRG approach suggests that both rhetorical and relational goals should be simultaneously met to enhance cognitive learning (Mottet et al., 2006). Thus, a final research question was posed to explore the links between these rhetorical and relational variables with actual cognitive learning as indicated by student performance on a content quiz:

RQ: Will instructor presence, instructor competence, and instructor–student rapport predict students' actual learning (quiz performance)?

Method

Schutt et al. (2009) argues that there is a "dearth of experimental or causal-comparative research on how instructor communicative behaviors influence student perceptions of important instructor characteristics such as care, empathy, disclosure of personality, and expression of emotions" (p. 135). Moreover, [Witt and Schrod \(2006\)](#) highlight that much of the research has compared traditional F2F courses to online courses, and in their own study compared use of technology in F2F settings. Because Allen, Bourhis, Mabry, Burrell, and Timmerman (2006) note that even within online courses, not all online courses are created equal and that there should not be a "one-size-fits-all" pedagogical format (p. 242), experimental research comparing the use of multiple online pedagogical formats is warranted. In response to this need, the authors designed an experiment based on instructor communicative behaviors that may, or may not, be used in an online learning environment to enhance perceptions of presence (e.g., use of slides, audio, and/or video). Further, the experiment allows comparisons to be made between instructional formats and reveals insight into the relationship between varying levels of presence on rhetorical and relational outcomes of college students.

Participants

Participants ($N = 329$) were male ($n = 144$) and female ($n = 185$) students who ranged in age from 18 to 53 ($M = 20.06$, $SD = 3.36$). The students classified themselves as first-year students ($n = 146$), sophomores ($n = 92$), juniors ($n = 56$), seniors ($n = 30$), and other ($n = 5$). Of the 329 students, 42.7% reported that they had taken at least one online class before.

Stimulus Materials

To conduct this experiment, several factors were taken into consideration for the development and testing of the stimulus materials. First, a graduate student who had research responsibilities and did not teach at this particular campus was chosen for her presentation skills, but also because students would not have been exposed to her before, thereby reducing the influence that previous exposure might have on perceptions of the variables of interest (e.g., trust, competence). Second, the research team reviewed course syllabi from the communication department and chose a topic that was not taught in any of the courses offered to avoid inflated perceptions of cognitive learning and quiz scores. Specifically, the research team developed a 10-minute presentation (i.e., PowerPoint and script) about teacher misbehaviors. This institutional review board-approved presentation was given to the graduate student recruited for presentation delivery. She had one month to memorize and practice the presentation on her own and two practice presentations were scheduled for the research team and a small group of undergraduate students to view and refine.

Following this series of practices, the presenter reported to a media theater to record the presentation using [Camtasia](#), a software package used to capture computer screens and record presentations simultaneously. This software allows for a one-time recording to be used in multiple ways. For example, the lecture on teacher misbehaviors was only recorded once, yet, three conditions were created following the expected hierarchy of presence found by Short et al. (1976) and Schutt et al. (2009). In the first condition, participants were only able to see the slideshow and the slides advanced at the same pace as the presenter to ensure students were exposed to the information for the same amount of time (low presence) without ever seeing or hearing the presenter. In the second condition, the same slides were accompanied only by an audio track of the presenter (moderate presence). The third condition included the slideshow, audio track, and headshot video of the instructor presenting the information (high presence). The audio track in conditions two and three were identical, and the slide pace was held constant in all three conditions.

Content Quiz Creation

The research team created a nine-question, cued-recall quiz over the materials based on condition one (i.e., slides only; low presence) to ensure that students who only saw slides would not be at a content disadvantage when compared to those who were assigned to condition two (i.e., slides and audio; moderate presence) or condition three (i.e., slides, audio, and video; high presence). To pilot the content quiz, six undergraduate students were offered extra credit to view the live lecture (i.e., one practice) and discuss the quiz question content, wording, and multiple-choice answers with the research team. These six students offered both verbal and written feedback on the fairness of the test, accuracy of the test based on the slides, question wording, and answer wording. The quiz was revised based on this student feedback.

Procedures

Students were recruited from a wide variety of undergraduate communication courses at a large university in the southeastern United States using an electronic recruitment system. Students had the opportunity to view a variety of studies and volunteer to participate. Students who volunteered to participate in this study signed up for a day and time to report to a computer lab. After arriving at the lab, students were introduced to the purpose of the study and were seated at a personal desktop computer. Students were randomly assigned to one of three conditions using a computerized randomizer on [Qualtrics](#) survey software. There were 110 students in the low-presence condition, 110 students in the moderate-presence condition, and 109 students in the high-presence condition.

Manipulation Check

To assess whether presence was successfully manipulated, [Walther and Bazarova's \(2008\)](#) five-item, semantic differential measure of electronic propinquity, which is conceptually similar to social presence (Westerman & Skalski, 2010), was used. An analysis of variance (ANOVA) revealed that the conditions

significantly differed in perceptions of presence [$F(2, 328) = 35.16, p < .001$]. Specifically, the high-presence condition was perceived as having the most presence ($M = 4.82, SD = 1.22$), followed by the moderate condition ($M = 4.10, SD = 1.58$), and the low condition ($M = 3.16, SD = 1.57$). To ensure that the conditions were realistic, students were asked to indicate whether they had previously taken a class using their assigned instructional format. Although the low-presence, slides-only, slow-paced presentation of the content in condition one may seem unrealistic and not pedagogically sound, it is important to note that nearly one third (31.8%) of the students reported having previously taken a class structured in this way. In the moderate-presence condition, 65.5% of students indicated they had taken an online class with slides and audio before. Finally, in the high-presence condition, 71.6% of the students indicated they had taken an online class with slides, audio, and video before. Thus, the conditions were realistic and presence was successfully manipulated.

Instrumentation

- *Social presence.* Social presence was measured using [Walther and Bazarova's \(2008\)](#) five-item, semantic differential scale. Participants indicated how accurately one of two adjectives described their experience with the instructor in their condition on a scale ranging from 1 to 7 (e.g., together–separate). See Tables 1 and 2 for all reliabilities, means, standard deviations, and the correlation matrix of variables.

Table 1. Scale descriptive statistics

Variable	α	M	SD
1. Presence	.92	4.02	1.61
2. Competence	.93	5.34	1.19
3. Perceived Learning	.89	3.49	.77
4. Actual Learning	-	76.88%	18.27%
5. Rapport	.98	4.12	1.65

Table 2. Correlation matrix

	1. Presence	2. Competence	3. Perceived Learning	4. Actual Learning
1. Presence	-			
2. Competence	.56**	-		
3. Perceived Learning	.59**	.68**	-	
4. Actual Learning	.13*	.19**	.32**	-
5. Rapport	.56**	.62**	.58**	.07

* $p < .05$. ** $p < .01$.

- *Instructor competence.* Credibility is typically considered a three-dimensional construct composed of caring, trustworthiness, and credibility. However, only competence was used because it aligned more closely with instructors' rhetorical goals. Instructor competence was measured using a subscale from [McCroskey and Teven's \(1999\)](#) credibility scale. The subscale is a six-item, semantic-differential scale where participants indicated on a scale ranging from 1 to 7 how accurately one word in an adjective pair describes the instructor they viewed in their condition (e.g., trained–untrained).
- *Instructor rapport.* Instructor rapport was measured using a modified version of [Frisby and Martin's \(2010\)](#) measure of instructor–student rapport they adapted from [Gremier and Gwinner \(2000\)](#). Items were modified to be more general and apply to any of the three conditions. For example, "this instructor relates well to me" was changed to "I believe the instructor who prepared this presentation would relate well to students." Rapport is an 11-item Likert-type scale measured on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).
- *Cognitive learning (actual and perceived).* Learning was measured in two ways because [Wanzer, Frymier, and Irwin \(2010\)](#) argue that "learning is a complex, multidimensional construct and cannot adequately be measured with a single scale" (p. 10). First, cognitive learning was measured using a nine-item, multiple-choice content quiz created and piloted for this study ($M = 76.88\%$, $SD = 18.27\%$). Second, [Frisby and Martin's \(2010\)](#) perceived cognitive learning scale was used to measure perceptions of knowledge gain, recall, and knowledge application. It is a

10-item, 5-point Likert-type scale with responses ranging from strongly disagree (1) to strongly agree (5). Items were slightly changed to reference "this presentation" instead of "this class."

Results

Hypotheses 1, 2, 3, and 4 predicted differences in rhetorical goals (i.e., competence and learning) and relational goals (i.e., instructor rapport) between the three instructional designs. A multivariate analysis of variance (MANOVA) revealed a significant model, [$\Lambda = .65$, $F(2, 328) = 19.18$, $p < .001$, $\eta_p^2 = .19$, observed power = 1.0].

Results for hypothesis one showed that the conditions significantly differed on perceptions of competence, [$F(2, 328) = 74.17$, $p < .001$, $\eta_p^2 = .32$], with the high-presence condition being perceived as significantly higher in competence ($M = 5.93$, $SD = .88$, $p < .001$) than the low-presence condition ($M = 5.72$, $SD = .81$), but not significantly more than the moderate-presence condition ($M = 4.41$, $SD = 1.22$).

Results for hypothesis two showed that the conditions significantly differed on both the quiz percentage [$F(2, 328) = 5.99$, $p < .01$, $\eta_p^2 = .03$] and perceived cognitive learning [$F(2, 328) = 51.27$, $p < .001$, $\eta_p^2 = .24$]. Specifically, those in the high-presence condition scored higher on the content quiz ($M = 80.14\%$, $SD = 16.70$, $p = .01$) than those in the low-presence condition ($M = 72.14\%$, $SD = 19.84$), but not significantly different than those in the moderate-presence condition ($M = 78.40\%$, $SD = 17.28$). Those in the high-presence condition perceived they had learned significantly more in the high-presence condition ($M = 3.86$, $SD = .53$) when compared to both the moderate-presence ($M = 3.63$, $SD = .67$, $p = .04$) and low-presence conditions ($M = 2.97$, $SD = .81$, $p < .001$).

Results for hypothesis three showed that the conditions significantly differed for rapport [$F(2, 328) = 77.68$, $p < .001$, $\eta_p^2 = .17$]. Those in the high-presence condition perceived significantly more rapport with the instructor ($M = 4.78$, $SD = 1.35$, $p < .001$) when compared to the low-presence condition ($M = 3.17$, $SD = 1.63$), but did not significantly differ from the moderate-presence condition ($M = 4.41$, $SD = 1.52$).

The research question inquired about the ability for social presence, instructor competence, and instructor–student rapport to predict students' actual cognitive learning. Results of the regression revealed a significant model, $F(3, 328) = 4.65$, $p < .01$, $R^2 = .04$. The only significant predictor of the students' quiz performance was instructor competence ($\beta = .21$, $p < .01$).

Discussion

In light of economical, educational, and administrative forces that are increasing the availability and appeal of online courses and based on concerns held about the quality of online courses, this study examined how instructors may effectively design online courses. Specifically, the authors examined how particular course designs may enhance perceptions that both relational and rhetorical goals are being met – both perceived and actual. The results of this study provide evidence to support SPT, extending on both theoretical and practical knowledge about the best ways to address student needs in the online college classroom.

When comparing the three conditions, those that had an audio component (i.e., moderate and high presence), outperformed the text-only condition. This may suggest that the presence of voice enhances social presence and also helps students to relate to the instructor, and perhaps, recall more about what they learned. [Stephens and Mottet \(2008\)](#) claim that instructional research should focus on "variables that will still be relevant as technologies change and converge" (p. 101). Social presence is one variable that meets this call for researchers, at least for the foreseeable future with technological affordances and advances. Consistent with previous theoretical tests, this study also supported the importance of social presence (e.g., [Cui et al., 2012](#); [Richardson & Swan, 2003](#)). Though the present study does illustrate that social presence is an important variable, we must also consider and explain why there did not seem to be a distinct difference between the high- and moderate-presence conditions on many of the outcome variables. Recently, [Downs, Boyson, Alley, and Bloom \(2011\)](#) conducted a study to understand the utility of iPods as an instructional medium and found that people scored higher on a knowledge test when they were exposed to lecture material in multimodal formats (e.g., audio/text and audio/video) versus formats with a single modality (e.g., audio only). Even though the medium used for instruction was different than what we utilized in our study, the pattern of results is similar to what we found and is consistent with dual coding theories of cognition and learning ([Paivio, 1990](#)) and multimedia learning theory (MMLT) ([Mayer, 1997](#)).

According to dual coding theory, people who receive information through a single format or channel (e.g., only audio or only pictures) will process it in an associative manner, whereas information received from two separate formats simultaneously (e.g., audio or text and picture) will be processed in a referential manner ([Clark & Paivio, 1991](#)). Studies have supported the idea that referential processing is better than associative processing; underscoring the idea that information presented in multiple formats or modalities is better for learning ([Mayer & Anderson, 1991](#)). Similarly, the modality and multimedia principles of multimedia learning theory basically state that students learn the most from different configurations of words (spoken or written) and images than simply from words (text) alone (Mayer, 2001; [Moreno & Mayer, 1999](#)). This assertion has received support across multiple studies ([Mayer & Moreno, 2002](#)). Therefore, when considering dual coding and multimedia learning theories, it should not come as a surprise that we did not see a significant difference between the high- and moderate-presence conditions, especially with regard to perceived and actual learning. Essentially, both the moderate (audio/text) and high presence (video/audio/text) conditions were representative of formats that encourage referential processing, which increases learning, whereas the low-presence condition (text) likely encouraged associative processing, making it less optimal for learning. Therefore, while we acknowledge that our findings are in line with SPT, we must also be cognizant of the fact that the sheer format of the information presented in online learning may indeed impact how students learn in online environments.

In this study, the two measures of learning were only moderately correlated ($r = .32, p < .001$), suggesting that they are indeed measuring two different things and should not be used interchangeably when researcher and teacher interests lie in what students actually learn. Using variables selected based on SPT and RRGT, the authors were only able to account for 3% of the variance in quiz scores. Interestingly, instructor competence was the only significant predictor. This suggests that students perform better on a quiz when they perceive the instructor to be credible. Critics of online learning argue that it requires self-regulation, motivation, Internet efficacy, and discipline by the student enrolled in online courses to learn ([Artino & Jones, 2012](#); [Bejerano, 2008](#); [Shea & Bidjerano, 2010](#)). The results of this study suggest that the instructor is also critical to student learning in the online environment.

Similar to previous studies (e.g., Frymier, 2007; [Stephens & Mottet, 2008](#); [Wrench et al., 2010](#)), this study also supported the interdependent nature of rhetorical and relational goals as both were affected by instructor interaction via social presence. An instructor's behaviors and decisions, as perceived through the mediated channels available to the participants, fulfilled both relational (i.e., rapport) and rhetorical (i.e., perceived competence, perceived learning, actual learning) needs. Despite the argued importance for both rhetorical and relational goals, only perceptions of instructor competence appear to predict students' task oriented goals, specifically, learning. This finding adds further support to [Claus et al.'s \(2012\)](#) claim that students' academic or rhetorical goals may be more salient than relational goals in the classroom. It further echoes [McArthur and Bostedo-Conway's \(2012\)](#) qualitative accounts of students who prefer to keep their academic and social lives separate when using Twitter as a classroom tool.

This finding is surprising given the strong support for interpersonal aspects of the instructor–student relationship and their relationships to student learning in previous studies (e.g., [Ellis, 2004](#); [Frisby & Martin, 2010](#); [Frymier & Houser, 2000](#); [Goodboy & Myers, 2008](#)). This may suggest that students prioritize instructor's social presence and rhetorical goals as more influential in the online classroom setting. Student relational expectations may differ in online courses when compared to F2F courses. Further, these results may be promising for those instructors who struggle to develop positive relationships with their students. Specifically, interpersonal behaviors that are often considered damaging to student learning (e.g., misbehaviors, [Goodboy & Bolkan, 2009](#)) may be less influential if the instructor still demonstrates presence and meets the rhetorical needs of students.

Nearly one third of the students in this study reported taking a class in which they only had textual interaction with an instructor (i.e., slides-only condition), suggesting that there is room for improvement in the online courses currently being offered. The students in the text-only condition were at a disadvantage rhetorically, relationally, and perhaps technologically when compared to their counterparts who had conditions where instructors incorporated audio and visual channels into the course design. [Schrodt and Witt \(2006\)](#) found that students prefer minimal to moderate technology use in the classroom. In a completely online class, minimal to moderate use of technology is not an option. Instead, this learning environment relies on full technology use. If instructors need to primarily use technology, it needs to be employed in a way that enhances perceptions of social presence and improves student outcomes. This can be done based on the technology choices the instructor makes when preparing and designing a course.

The technology to enhance perceptions of presence and student learning is available, yet some instructors are not using this in their online courses. One explanation for this may be that some instructors lack the technological efficacy, and perhaps pedagogical efficacy, to successfully translate a course to an online setting employing technology that the instructor(s) may not be familiar with (Vanhorn, Pearson, & Child, 2008). This is consistent with reasons instructors provide for resisting technological integration in the classroom (Okojie, Olinzock, & Okojie-Boulder, 2006). Further, instructors are resistant to online classes because of perceptions that it hinders student learning and relationship building (Bejerano, 2008). However, the research on SPT, RRG, and MMLT provide a theoretical evidence base to train instructors on the best practices to build relationships, increase interaction, and enhance student learning in an online environment. As instructors, we often try to increase student efficacy (e.g., public speaking), and as a discipline, it becomes our responsibility to increase instructor technological efficacy to better meet students' rhetorical and relational needs, whether F2F or in mediated settings. Choosing the systems and technology to facilitate contact between teachers and students becomes an important consideration in course design (Hackman & Walker, 1990).

Limitations and Future Directions

The results of this study should be interpreted with the inherent limitations in mind. Although the experimental design is a strength of this study, the ecological validity of the presentation that the students viewed is threatened by the reduced length of the lecture and the controlled timing of the slide progression. However, it is important to note that students form relatively lasting impressions as quickly as the first day of classes and that these impressions influence later communication and teacher evaluations (Brooks, 1985; Clayson, 2013; Horan & Houser, 2012). Furthermore, the authors only have an overall perception of social presence, but it remains unclear what specific elements (e.g., vocalics, facial expression) elicit perceptions of social presence. Finally, this study only examined student perceptions of relational and rhetorical goals in online learning.

The limitations of this study should be addressed in future research. First, scholars should experimentally manipulate online courses for an entire course session or semester to examine long-term effects of social presence and modes of presentation. Relatedly, scholars should work to differentiate between teaching competence and technological competence, as students may view these constructs as distinct in instructors. As online courses become increasingly more advanced in terms of technology and interaction capabilities, it would be fruitful to extend this line of work to understand if synchronicity (asynchronous vs. synchronous online interaction) has an impact on the relational and rhetorical goals as well as learning in online courses. Second, even though the learning outcome measure (nine-item quiz) was valid, there is the possibility that nine items might not be sensitive enough to capture a full spectrum of learning, meaning that future studies should look at test length. Finally, given the fact that concerns about the development of interpersonal relationships have also been expressed by instructors, it would be worthwhile to examine how engaging with different modes of mediated interaction with students may affect instructors' feelings of rapport, connectedness, and job satisfaction.

Conclusion

As universities continue to dedicate time and resources to developing effective online courses, the findings of this study suggest that the way an online course is structured can have a significant impact on presence and relational factors that contribute to both online learning and the instructor–student relationship. While further work must be done to disaggregate which relational and technological aspects of online instruction are most effective, the relationships between the mode of online instruction, presence, and rhetorical and relational aspects of the instructor–student relationship reported in this study shed some light on the best practices and theoretical mechanisms which contribute to learning and relational development in online classes.

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