

Strategies for Creating a Community of Inquiry through Online Asynchronous Discussions

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Abstract

Asynchronous discussions are often utilized in online courses to provide a venue for students to openly communicate and build shared understanding, and for instructors to skillfully facilitate the process. While discussions can be invaluable toward creating and sustaining an online community of inquiry (CoI), they are not effective if not optimally designed. It is the authors' position that it is helpful to identify research-proven online discussion strategies and conceptualize them into the CoI framework, which has been extensively studied and validated. This framework posits that there are three interrelated presences – social, cognitive, and teaching – that must be perceived by members in order to facilitate a successful educational experience. Classifying strategies within this framework may guide instructors to purposefully select and employ methods that encourage productive, efficient, and meaningful discussions. Strategies, such as providing prompt but modest feedback, peer facilitation, protocol discussion prompts, and providing audio feedback, were found to support multiple presences in a review of the literature. Based on these findings, it is argued that educators need to employ discussion strategies that integrate all three presences in order to support an effective online CoI.

Keywords: social presence, cognitive presence, teaching presence, online facilitation, distance learning, asynchronous, community of inquiry (CoI)

Introduction

The popularity of online courses continues to rise. According to a national survey of online learning, nearly a third of all higher education students in the United States took at least one course online in 2012 ([Allen & Seaman, 2013](#)). While nearly 70% of chief academic leaders reported that online learning was critical to their long-term strategies, they believed that lower retention rates were a significant barrier to the growth of online instruction ([Allen & Seaman, 2013](#)). Students are attracted to online courses because of the convenience of being able to participate anytime from anywhere, but then once enrolled can become dissatisfied with the experience ([Moskal, Dziuban, & Hartman, 2010](#)). One of the

reasons for this dissatisfaction is that online learners sometimes feel disconnected from others ([van Tyron & Bishop, 2009](#)). This disconnection can hinder students from interacting and building knowledge together. Moreover, instructors have reported difficulties in facilitating student interactions online ([Rovai, 2007](#)). Thus, there is a critical need to create online learning environments that have the capability to sustain a strong sense of community that supports students both socially and cognitively.

One popular method of creating such a community in online classes is engaging students in asynchronous discussions ([Andresen, 2009](#)). A recent survey conducted at the University of Central Florida reports that 95% of 358 teaching faculty respondents used online discussions, and 87% required class discussion participation ([Lynch, Kearsley, & Thompson, 2011](#)). Despite their prominence, online discussions pose challenges, such as optimally structuring them so students co-construct knowledge, effectively facilitating them, ensuring equity in participation, and doing so within the confines of limited time constraints typically faced by instructors ([Mazzolini & Maddison, 2007](#)). The purpose of this position paper is to showcase specific strategies identified in previous research literature and conceptualize them into the popular, valid, and useful [Community of Inquiry \(Col\) framework](#). Insights shared in this paper will guide instructors in a few ways. First, instructors are exposed to a variety of strategies that have been proven as effective in eliciting productive online discussions. Second, instructors have the opportunity to select strategies based on their own unique needs such as teacher workload and course content. Finally, the paper details the considerations and proposes recommendations for each strategy.

Community of Inquiry Framework

It is helpful to employ a framework to understand the concept of community in online discussions. Originally designed with asynchronous text-based discussions in mind, the [Col framework](#) has been used to conceptualize community in many online discussion studies (see the Col website at <http://coi.athabasca.ca/>). [Garrison, Anderson, and Archer \(2000\)](#) propose that there are three essential elements that contribute to a successful educational experience: social presence, cognitive presence, and teaching presence – which make up the Col framework. The three elements are explored in more detail below.

Social presence is the ability of learners to project themselves socially and emotionally, being perceived as "real" people in mediated communication ([Garrison & Arbaugh, 2007](#)). Indicators of social presence include open communication (e.g., self-disclosure), group cohesion (e.g., encouraging collaboration), and emotional expression (e.g., humor) ([Garrison & Arbaugh, 2007](#)). A high level of social presence supports the discourse necessary to build cognitive presence, the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse ([Garrison & Arbaugh, 2007](#)). This construction of meaning is described in four progressive phases: triggering event, when an issue is identified for further inquiry; exploration, which is an exchange of ideas or information; integration, when ideas are connected and expanded on; and finally, resolution, when new ideas are applied to other contexts, such as work or education. A third and critical element of the Col is teaching presence, defined as the "design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes" ([Anderson, Rourke, Garrison, & Archer, 2001](#), p. 5). There are three categories of teaching presence: instructional design and organization, facilitation, and direct instruction. Instructional design and organization is the structure, process, interaction, and evaluation of the discussion. Facilitating discourse includes connecting ideas, asking for clarification, and diagnosing misconceptions. The final is direct instruction, in which a discussant (most commonly the instructor, but could be another expert) injects knowledge and explains content.

While it is tempting to conceive of these presences as separate entities, they are interrelated ([Garrison, Anderson, & Archer, 2010](#)). This framework is useful to guide educators to design and develop effective online discussions that support a community in which students openly communicate with one another and think critically to build knowledge together under expert guidance ([Garrison & Arbaugh, 2007](#)).

Our Position and Process

While discussions can be invaluable toward building a Col in an online course, they are not effective if not optimally designed. The Col framework provides a well-rounded foundation for the design and development of an online discussion. While this framework has been utilized in many studies about online discussions (see the "[Col Papers](#)" section of the [Col website](#)), the majority of studies do not often focus on the effect of specific strategies. Because of this, it is sometimes difficult for others to create a

discussion activity that supports the development of an effective Col. It is our position that identifying research-proven strategies and conceptualizing them into the Col framework will guide instructors to purposefully select strategies that foster productive online discussions, while keeping in mind their limited time and large workload. Therefore, the purpose of this paper is to discuss specific strategies that have been proven through empirical research to support online Cols.

This work builds on research previously conducted by [Zydney, deNoyelles, and Seo \(2012\)](#), which involved examining the effects of certain strategies on the effectiveness of online discussions. To identify strategies in the current paper, prior references cited in these previous publications were examined. To further identify strategies, a review was undertaken by a systematic search of the [Education Resource Information Center \(ERIC\)](#) database. Articles referenced in the [Col website](#) were also included. Articles published from the last 10 years were included in the review.

Due to the sheer amount of articles about online discussions, identifying a specific set of criteria was key. To be included in the review, the study had to have taken place in a fully online, higher education setting, utilized text-based asynchronous discussion, focused on the influence of a specific strategy, employed at least one direct research measure (such as discussion transcript analysis), and been peer-reviewed. While studies that used the Col framework in their analyses were included, it was not required. In all, 220 articles about online discussions were retrieved, but only 36 fit the narrow criteria.

An iterative process was implemented as the 36 articles were reviewed. For instance, "strategy" was defined among the authors as an intentional instructional design decision driven by a specific purpose for the discussion, thereby eliminating articles that did not frame strategies in this manner. Strategies that were found to be effective across multiple studies were included in the review. Because there were few strategies that were examined by multiple studies, strategies that were featured in a single article were also included if they exhibited a strong research design. Finally, strategies were organized by the three presences of the Col framework. For example, if a strategy was found to enhance the social presence of students, it was classified under social presence. In the cases where a strategy was found to influence more than one presence, it was classified under multiple presences.

This position paper is significant because it identifies research-proven strategies and conceptualizes them into a valid and highly used framework for online discussions. Applying the Col framework to the design and facilitation of online discussions can guide teachers to strategically create effective, engaging activities that are mindful of environment logistics such as teacher workload. This is not intended to be an exhaustive review of the literature. Rather, the research literature is employed to provide evidence for our position that strategies should be examined within the context of the Col framework to help instructors purposely select approaches that match their goals of creating effective online discussions.

Discussion Strategies

In this section, we will explore the three presences (social, cognitive, and teaching) and present the strategies that were effective in supporting these presences in online discussions. Then, strategies that were effective for multiple presences are highlighted. Following this review is a discussion with a synthesis of these strategies.

Social Presence

One comment often heard from online instructors and students is the loss of human touch in a fully online course ([Moskal et al., 2010](#); [van Tyron & Bishop, 2009](#)). Many instructors struggle to create a positive and supportive online environment similar to what they can achieve in their face-to-face classrooms. They fear that since online learners cannot interact with the instructor or peers in person, it consequently affects learning perception and satisfaction ([Arbaugh & Benbunan-Fich, 2006](#); [Bangert, 2008](#)). Therefore, the key issue of social presence in online discussions is to seek the most effective practices to set the climate and support a sense of community that is necessary to build shared understanding. In this section of the paper, two strategies supported in the literature that instructors can implement to enhance social presence are discussed, including modeling of social presence cues and requiring discussions as a part of the course grade.

- *Modeling of social presence cues.* One of the most successful and direct strategies for promoting social presence in online discussions is the deliberate use of social presence cues, such as encouragement ([Rovai, 2007](#)). Indicators, including addressing a person by name,

describing personal or professional experiences, and encouraging participation, were identified by [Bassani \(2011\)](#) as effective in promoting the continuation of interpersonal exchanges in discussion. Previous literature suggests that instructors should facilitate and model discussion comments that deal with a sharing of one's opinions, evaluations, personal anecdotes, and related personal reflections that would serve to enhance the sense of a learning community ([Bassani, 2011](#); [Molseed, 2011](#)). Therefore, it is recommended that online instructors be personal, greet students by name, express humor, and introduce personal stories. Modeling social cues is likely to encourage students to do the same.

While the modeling and encouragement of social presence cues is effective in promoting social interactions among learners ([Bassani, 2011](#); [Molseed, 2011](#)), there is not sufficient evidence in the research literature to conclude that it directly impacts students' learning outcomes. Although this strategy may not directly affect students' performance, we maintain that the use of social cues is an effective strategy because it helps build a collaborative and trusting learning community, which in turn encourages participation and improves student satisfaction. A strong sense of social presence supports the discourse necessary for cognitive presence to take place.

- *Required/graded discussions.* Requiring students to participate in graded discussion assignments can generate the necessary extrinsic motivation for students to interact and to engage in productive discussions. When peer interaction is not required in an online environment, voluntary interactions among students rarely occur, resulting in a low degree of social activities ([An, Shin, & Lim, 2009](#)).

Rovai ([2003, 2007](#)) studied the benefits of required/graded discussions on students' social interactions and learning outcomes. A significant increase was reported in the number of student messages per week and a concurrent increase in sense of classroom community for courses in which discussions accounted for 10% to 20% of the course grade, compared to courses that had ungraded discussions. However, no additional benefits were observed when this weight was increased to 25% to 35% of the course grade. These findings suggest that including graded discussions as part of the course work can motivate students to greater participation in online discussions and have the additional benefit of increasing a sense of community. We suggest that instructors reward students with a small percentage of the class points for their discussion participation to build an online learning community with heightened communication.

Cognitive Presence

Cognitive presence, the ability to create construct and confirm meaning through sustained reflection and discourse is conceptualized in four phases ([Garrison & Arbaugh, 2007](#)). When a discussion progresses from the identification of an issue (*triggering event*), to an exchange of ideas or information about the issue (*exploration*), to the connection of ideas (*integration*), and finally to an application of the new ideas to other contexts (*resolution*), it is said that the discussion has reached a high level of cognitive presence ([Garrison & Arbaugh, 2007](#)).

An issue revealed consistently in the literature is that online discussions rarely exhibit levels of cognitive presence beyond the exploration phase ([Celentin, 2007](#); [Darabi, Arrastia, Nelson, Cornille, & Liang, 2011](#)). This means that while students may be exchanging information and ideas, they are rarely connecting and expanding on ideas, or applying new ideas to other contexts. This can be explained in part by research findings concerning the nature of the discussion task ([Arnold & Ducate, 2006](#); [Richardson & Ice, 2010](#)). Interactivity is also a factor, as students tend to engage in monologues in online discussions ([Dennen, 2005](#); [Pawan, Paulus, Yalcin, & Chang, 2003](#)). This reduces the discourse that is essential for group construction of knowledge. Skillful facilitation is also frequently associated in literature with higher levels of cognitive presence ([Arnold & Ducate, 2006](#); [Darabi et al., 2011](#); [Ertmer, Sadaf, & Ertmer, 2011](#); [Hou, Chang, & Sung, 2007](#); [Liu & Yang, 2012](#); [Nussbaum, Winsor, AQUI, & Poliquin, 2007](#)).

Several strategies in the literature that encourage high levels of cognitive presence have been identified, including purposeful design of the discussion prompt and skillful implementation of facilitation strategies. These are crucial to supporting the interactivity and critical thinking associated with high levels of cognitive presence in online discussions.

- *Discussion prompts.* The selection of a discussion prompt is very important, as it structures and directs the activity of the learners. Discussion prompts that inherently guide students to progress through the phases of cognitive presence were more successful in eliciting integration and resolution. Problem-based, project-based, and debate prompts emerge as strategies that promoted higher levels of integration and resolution when compared to traditional question-and-answer structure ([Arnold & Ducate, 2006](#); [Darabi et al., 2011](#); [Koh, Herring, & Hew, 2010](#)). The three strategies are explored in more detail below.
 - *Problem-based prompts.* Problem-based prompts typically focus on a problem that is related to the content area and ask students to discuss and work together to formulate solutions. For example, the prompt in [Darabi et al.'s \(2011\)](#) study involved students taking on the role of a school district committee and choosing a consensus-based intervention for a given social problem. This task required students to compare advantages and disadvantages of alternative solutions. While the problem is typically created by the instructor, students may create both the problems and the solutions. [Arnold and Ducate \(2006\)](#) found that the discussion, which asked students to identify problems and generate solutions ("what are potential problems that teachers might encounter when they teach culture?"), exhibited the most resolution. These tasks require that students rely on course content and work together in order to solve the problem. We recommend that if working in several groups, it would be optimal for students to share multiple solutions to the same problem. Another idea is to use a simple protocol (described later in this section) and have certain students identify problems, and others generate solutions; then switch those roles.

While problem-based prompts report resolution, some noted that the frequency was still lower than expected ([Arnold & Ducate, 2006](#); [Darabi et al., 2011](#)). This is a common finding in discussion research. These researchers explain that high levels of exploration and integration are necessary in order to achieve resolution. We stress that all phases of cognitive presence are important; exploration is a critical phase, which enables the higher levels to exist, as long as they are later prompted to integrate and apply these ideas in the course context.

It is not only the nature of the prompt, but the conditions in which the prompt exists, that determine overall effectiveness. Facilitation consistently emerges as an influential theme ([Arnold & Ducate, 2006](#); [Darabi et al., 2011](#); [Kamin, O'Sullivan, Deterding, Younger, & Wade, 2006](#)). For example, Darabi et al. studied the effect of different conditions on the same problem-based task and found that the condition that simply posted questions for students with the intention of guiding group consensus exhibited no resolution, while the condition that was scaffolded by peer facilitators resulted in the most. Facilitation also emerged as a factor for Arnold and Ducate, who claim that more active teacher involvement as the problem-based discussion progressed may have elicited more frequent and collaborative resolution.

- *Project-based prompts.* Similar to problem-based learning, project-based learning has students develop solutions to problems. However, students create concrete products or artifacts that engage them in solving the problem. One example of project-based learning that has been studied is a project where students individually developed an e-learning solution for a particular target audience ([Koh et al., 2010](#)). In this study, researchers found that students exhibited higher levels of knowledge construction when involved in project-based activities compared to non-project based activities. Although levels of knowledge integration were high, students did not achieve the highest level of resolution, as anticipated. The researchers speculated that more instructor facilitation was needed to get students to move toward resolution. Based on their research, several guidelines were established for creating effective project-based learning environments, such as a) using complex design problems that prompt iterative cycles of refinement, b) creating project milestones that guide students through the cognitive stages, c) prompting students to reflect on their learning at each stage, and d) providing increased facilitation towards the later stages of project development to advance students to resolution ([Koh et al., 2010](#)). We also add that careful assessment guidelines should be set, such as a rubric.

- *Debate prompts.* Debate is a widely researched strategy in the literature that frequently exhibits higher levels of cognitive presence (see [Darabi et al., 2011](#); [Kanuka, Rourke, & Laflamme, 2007](#); [Nussbaum et al., 2007](#)). In a typical discussion debate, students argue for or against a position, with the intention of persuading others to assume the same position. For example, Darabi et al. studied the impact of a problem-based task in the structure of a debate, with students arguing for or against a particular solution. They found that this strategy generated high levels of resolution, exploration, and integration. Kanuka et al. also found that the debate strategy resulted in a higher proportion and number of messages reflective of the highest levels of cognitive presence when compared to other strategies. Nussbaum et al. asked students to form arguments both for and against the practice of grading activities, such as participation, effort, or completion of homework. They discovered that students developed more sophisticated arguments that reflected both sides of the issue, which fostered opinion change.

The effectiveness of debate in achieving critical thinking is explained in a few ways. First, students must take a clear position and are aware of the clear responsibility to debate the position ([Darabi et al., 2011](#); [Kanuka et al., 2007](#)). Second, the structure of the debate is complementary to the progression of the cognitive presence phases, requiring that students go beyond exploration. They must challenge, form arguments, advance arguments, and work through conflicts in concepts and assumptions. Engaging in a debate requires students to examine, compare, and contrast other solutions, exposing the advantages and disadvantages of the positions. Finally, since the purpose is to persuade others, debates rely on interaction in order to work.

It may take additional support and resources in order for a debate to be effective. [Nussbaum et al. \(2007\)](#) cautions that students are sometimes reluctant to disagree in online discussions. They suggest that the instructor emphasize norms where respectful disagreement is valued, along with adding questions to provide students with additional guidance in how to evaluate and integrate opposing sides. Finally, they note that the instructor reinforce the debate prompts by pointing out when students ignore arguments or counterarguments in their final arguments.

- *Facilitation techniques.* As noted above, facilitation is often found to be effective to achieve higher levels of cognitive presence ([Arnold & Ducate, 2006](#); [Darabi et al., 2011](#); [Ertmer et al., 2011](#); [Hou et al., 2007](#); [Liu & Yang, 2012](#); [Nussbaum et al., 2007](#)). It has also been found that more interactivity is generated with the explicit guidance of a facilitator ([Pawan et al., 2003](#)). We argue it is not the mere presence of a facilitator that is effective, but rather the techniques employed. Questioning and assuming a challenging stance were both identified as effective facilitation strategies.
 - *Questioning.* Questioning is often considered a best facilitation practice in the literature. [Darabi et al. \(2011\)](#) found that the condition in which facilitators asked questions in relation to students' proposed solutions to a given problem generated all phases of cognitive presence and the most resolution when compared to other strategies. They explained that this technique is effective because the questions can guide students through the cognitive presence phases. In this case, the facilitators asked details about the proposed solutions to the problem, prompting students to think more. In addition, the questions were specific to the unique responses from the students. Socratic questioning is a disciplined type of questioning studied in the literature that is intended to explore complex ideas in a logical way. It typically focuses on prompting students to clarify thinking, challenging assumptions, asking for evidence toward an argument and alternative viewpoints, and considering the consequences of actions. A study by [Yang, Newby, and Bill \(2005\)](#) showed that students that received Socratic questioning exhibited an improvement in critical thinking and continued to showcase these skills even after the questioning ended. In any questioning technique, it is recommended that the technique should be clearly articulated to students in order to prevent any feelings of interrogation.

Certain logistical issues must be taken into account when selecting a facilitation strategy. For instance, [Darabi et al. \(2011\)](#) notes that questioning is difficult in large classes because

it takes a lot of time to read and facilitate posts. In these cases, we recommend selecting prompts that are structured in a way that implicitly fosters facilitation.

- *Challenging stance.* A similar approach to questioning is for the instructor to take on a challenging stance in the discussion to further probe student thinking. For example, instructors may challenge students to defend their position, play "devil's advocate" by providing opposing evidence, highlighting different student opinions, or prompting students to consider alternate viewpoints ([Gerber, Scott, Clements, & Sarama, 2005](#)). Gerber et al. found that when the instructor assumed a challenging stance, students posted a greater number of posts that referenced readings and theory, regardless of the topic level. They also found that a challenging stance prompted students to have more reasoned posts, but only for lower order prompts. The researchers hypothesized that the challenging stance that the instructor took within the higher order forums were more abstract and global in nature, potentially causing students to avoid taking a specific stance. However, given the small sample size and limited data collected, more research is needed to validate this speculation. Another drawback to this approach is that the discussions tend to be more teacher-centered with students responding much more to the instructor than to one another ([Gerber et al., 2005](#)). Thus, our recommendation when using a challenging stance is to use it in moderation and to provide concrete feedback that relates to the students' perspectives. We also recommend that the discussion prompt be more practical in nature, in order to encourage students to produce posts that are more reasoned.

Teaching Presence

Issues surrounding teaching presence in the literature often center around the problems of instructors having limited time and feeling overwhelmed by the effort required to fully facilitate online discussions ([Rourke & Anderson, 2002](#)). With 24/7 communications and a myriad of technical issues, teaching workload can become extremely overwhelming in an online environment ([Henry & Meadows, 2008](#)). It takes considerable time to provide individualized feedback to students and actively participate in discussions. Instructors also wrestle with how much to participate in online discussions. If instructors never post or minimally post (e.g., once every 10 postings), students think that the instructor is not present; whereas, if the instructor responds to every post, the discussion becomes too teacher-centered ([An et al., 2009](#); [Arend, 2009](#); [Dennen, 2005](#)). Finally, online teachers struggle with ways to communicate feedback to students without their meaning being misinterpreted ([Ice, Curtis, Phillips, & Wells, 2007](#)).

Research has shown that the backbone of the community is teaching presence, as it sets the social climate and supports critical thinking ([Garrison & Arbaugh, 2007](#)). Thus, the strategies that were found to enhance teaching presence were also found to improve the other presences. Therefore, these strategies will be discussed in the next section on multiple presences.

Multiple Presences

Strategies were identified that positively enhanced the community at large by impacting social, cognitive, and teaching presences. These include providing prompt but modest feedback, peer facilitation, protocols, and audio feedback.

- *Prompt, but modest instructor feedback.* It is tempting to think that an effective facilitator should be very active in the discussion (i.e., posting frequently to each student in order to keep the discussion interactive and progressing); however, the literature suggests a different approach ([An et al., 2009](#); [Arend, 2009](#); [Dennen, 2005](#)). Providing modest but prompt instructor feedback is one of the most effective strategies to support social and cognitive presences. An et al. studied the amount of instructor involvement on social presence in an asynchronous discussion activity. The results indicated that a multitude of instructor intervention did not lead to increased interactions among students. Rather, when the instructor's intervention was minimal, students tended to more freely express their thoughts and opinions, with a large number of cues for social presence. Limited facilitation also has an effect on cognitive presence. Both Dennen and Arend examined instructor approaches across several online courses and found limited instructor facilitation to be the most effective. For example, Arend found that online courses that exhibited the greatest levels of critical thinking had instructors that posted less often but in more meaningful ways, which encouraged students to reexamine their own perspectives.

The challenges to this approach are that students sometimes perceive the instructor as being less involved and desire that the discussions be more of an instructor-led space ([Arend, 2009](#)). Along the same line, [An et al. \(2009\)](#) found that students in the group with less instructor intervention gave slightly lower course satisfaction ratings. However, given the decreased instructor workload, the positives seem to outweigh the negatives of this approach. Moreover, there are other ways for the instructor to let students know they are paying attention, such as by monitoring discussions to keep them on topic, preventing them from being dominated by only a few individuals, and quickly dealing with inappropriate comments ([Arend, 2009](#)).

- *Peer facilitation.* A strategy noted as effective in supporting an online community in the literature was to assign a peer facilitator. Concerning social presence, students may be more comfortable to participate in the discussion when it is led by an equal member of the class, rather than the instructor who is perceived as the authority ([Lim, Cheung, & Hew, 2011](#)). Interestingly, certain techniques are perceived differently when implemented by a peer. [Mazzolini and Maddison \(2007\)](#) found that instructor questioning may have prompted students to view the questions as a form of assessment, rather than a tool to drive the discussion, as they do with peer questioning. Other studies noted that peer facilitation increases the activity of the discussion. For instance, [Hew and Cheung \(2011\)](#) found that the higher level knowledge construction occurred when peers provided comments, showed appreciation and encouragement, and summarized the discussions. [Rourke and Anderson \(2002\)](#) found that when peers facilitated in teams, they posted many more messages than an instructor, but the increase in these posts did not diminish student interaction. On the contrary, it encouraged more questions, supporting cognitive presence. Having peers facilitate frees up the instructor to focus on the teaching presence tasks that peers cannot fill; namely, the expertise and direct instruction aspects ([Rourke & Anderson, 2002](#); [Zydney et al., 2012](#)). For this reason, a combination of peer and instructor facilitation, using complementary techniques, emerges as an effective strategy to support discussions.

While encouraging interaction, peer-led discussions are sometimes perceived as less challenging in comparison to the instructor ([Luebeck & Bice, 2005](#); [Rourke & Anderson, 2002](#)). We recommend that instructors model the discussion at least twice for peers, so they have a clear idea of the techniques used. Assigning peer facilitators specific roles may also be an effective way to facilitate discussions. For instance, the "starter/wrapper" technique in which one peer starts the discussion and another peer concludes the discussion by summarizing was noted as effective in eliciting integration when compared to other free-form forums ([Pawan et al., 2003](#)).

- *Protocol prompts.* Protocols are a structured method of having discussions by establishing a well-defined goal, clear roles, set rules for interactions, and specific deadlines for posting. The goal of these structured conversations is to enhance problem solving, encourage different perspectives, and build shared knowledge (McDonald, Zydney, Dichter, & McDonald, 2012). One example of a protocol is called Save the Last Word for Me, in which half the students find a quote from a complex reading, which requires further interpretation from the class. Then, everyone provides their interpretation of at least two quotes posted. At the end of the week, the initial posters of the quote explain what they learned from the discussion. Then, the roles reverse for the next reading. (For other examples of online protocols, see McDonald et al., 2012).

[Zydney et al. \(2012\)](#) tested the Save the Last Word for Me protocol compared to a free-form discussion and found that the protocol-based discussion more evenly distributed the three presences exhibited by students. While the amount of social presence was not significantly different between the two discussions, the protocol promoted more shared group cognition, rather than individual monologues. It also significantly increased students' opportunity to participate in the instructional design of the course, making teaching presence a shared responsibility between teachers and students and fostering a more student-centered discussion. This reduced the burden on the instructor of doing all the facilitation and enabled the instructor more time to diagnose misconceptions and inject knowledge when necessary ([Zydney et al., 2012](#)).

One downside that we have found is that some students (particularly undergraduate students) may not follow the precise directions associated with these protocols. Based on these findings,

we would recommend that protocol directions either be chunked into smaller pieces, providing shorter directions at a given time, or that instructors carefully monitor the discussions to ensure that students are following directions.

- *Audio feedback.* A successful strategy for addressing multiple presences is the use of audio to provide feedback. One method that was done in a study by [Ice et al. \(2007\)](#) was to create audio files using [Audacity](#) freeware and then add these as attachments to the discussion board or e-mails. More recent methods include uploading directly through certain learning management systems or through the use of social media tools, such as [VoiceThread](#), which enables participants to leave a voice comment through their computer microphone or calling in via telephone.

[Ice et al. \(2007\)](#) found that audio feedback was more effective than text-based feedback in several ways. Audio feedback helped convey the instructor's true meaning by enabling students to hear the tone of the messages, enhancing the teaching presence indicators of facilitation of discourse and direct instruction. A side benefit of this approach is that it took less time for instructors to create the audio feedback than the text-based feedback, and as a result, tended to give students more feedback ([Ice et al., 2007](#)). In addition to improving teaching presence, the audio feedback also enhanced social presence by helping students feel more involved and connected. It also gave students the perception that the instructor cared. Finally, audio feedback improved cognitive presence by increasing student retention of content.

The use of video can have similar positive effects in enhancing community. For example, in our own courses, student evaluations have indicated that they appreciate the use of videos in making the course feel more personable. One downside of this approach is that some students reported having more technical difficulties ([Ice et al., 2007](#)). Overall, the benefits of using audio feedback seem to far outweigh the costs of the additional technical issues. Based on these initial findings, we would recommend the use of both audio and video to provide feedback to students either individually or at the end of the discussion to synthesize main ideas or provide general feedback to the class as a whole.

Conclusion

This position paper is unique in that it identifies strategies and conceptualizes them into the valid and frequently employed CoI framework. Applying the CoI framework to the design and facilitation of online discussions can guide teachers to create effective, engaging, and meaningful activities. The research focused on the effectiveness of specific strategies that appear to confirm the framework's conception of the three presences as interrelated. It was found that teaching presence set the social climate and supported critical thinking, serving as the foundation for a quality online discussion. Therefore, selecting strategies with this in mind is recommended. Certain strategies, such as protocols, peer facilitation, modest instructor facilitation, and audio feedback, were shown to influence multiple presences. For instance, allowing peers to facilitate not only enhances social presence, but also the cognitive and teaching presences of students – all while decreasing the pressure on the teacher. This position paper clearly illuminates the need to conceptualize online discussions as a multi-faceted, interactive, evolving activity.

Based on the review, the following strategies are proposed to guide teachers as they design and facilitate online discussions in order to build and support an online community:

- *Model social presence.* To increase social presence, the instructor can model social cues, such as being more personal or maintaining social norms, that can encourage students to follow suit ([Bassani, 2011](#); [Molseed, 2011](#)). Increasing social presence may help support an atmosphere that encourages increased cognitive presence.
- *Select a discussion prompt that encourages structured interaction and critical thinking, while also supporting the specific learning objectives.* Problem-based, project-based, debate, and protocol prompts have been found to be effective in this regard ([Arnold & Ducate, 2006](#); [Koh et al., 2010](#); [Zydney et al., 2012](#)). As previously stated, we stress that all phases of cognitive presence are important as long as students are prompted to ask questions, explore, integrate, and apply ideas within the course context.

- *Provide prompt but modest feedback.* Expert facilitation is often necessary to elicit higher levels of cognitive presence. Exhibiting instructor presence in the online discussion is important, but modest feedback encourages students to take ownership of the discussion, which results in more student-to-student social interactions ([An et al., 2009](#)).
- *Facilitate purposefully.* Specific techniques, such as questioning and assuming a challenging stance, were found to stimulate critical thinking ([Pawan et al., 2003](#); [Yang et al., 2005](#)). Just as with the design of a prompt, we suggest to base the facilitation technique on the overall purpose of the discussion. Using a variety of techniques to support the overall purpose may be beneficial and reach more students.
- *Provide feedback through multimedia.* Traditional text feedback in online discussions is effective, but richer forms of media, such as audio and video, enhance multiple presences ([Ice et al., 2007](#)). We recommend experimenting with multiple kinds of feedback. For instance, if providing feedback that is more critical in nature, video or audio may better capture the nuances of what one is attempting to express.
- *Encourage peers to facilitate.* The act of facilitation does not have to be solely assumed by the instructor. Peer facilitation appears to stimulate discussion among the group, freeing up the instructor to focus on sharing expert knowledge ([Rourke & Anderson, 2002](#)).

While this position paper provides a solid start for selecting strategies to create an effective Col through online discussions, it also highlights important areas for further research. First, additional research on online discussions needs to be conducted in fully online undergraduate courses, as most of the studies reviewed took place in graduate courses. Fully online undergraduate programs are increasing in popularity, so this issue is important in supporting the formation of an online community of learners and improving overall retention. Education and technology courses were the most typical settings (which is not unusual, given the subject matter), but other disciplines may report different results. We also suggest that research be more globally focused, as many of the studies found occurred in North America.

Through the review, it was noticed that while practical strategies typically pertained to enhancing cognitive presence, there were few about social presence. While many articles about social presence were initially found, they were eliminated because they did not meet the defined criteria of including a direct measure, such as discussion transcript analysis. Thus, there is a need for researchers to find more direct methods of assessing social presence in addition to self-report measures, such as surveys. Since social presence is clearly related to cognitive presence, it is important to formally study the influence of certain strategies on the amount of social presence perceived by a community ([Garrison, 2007](#)). Likewise, few studies examined how specific strategies enhanced the level of teaching presence in the community; typically, the studies looked at how a particular teaching presence strategy, such as a facilitation technique, enhanced cognitive presence. The most important call for future research is to identify additional strategies that address all three presences simultaneously, and to better understand their influences as the discussion unfolds.

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