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## Contents

Introduction .....	1340
The Roots of Online Learning .....	1340
The Community of Inquiry Theoretical Framework .....	1342
Community-Based Design and Delivery in Three Presences .....	1345
CoI and Learning Assessment .....	1351
Conclusion .....	1352
References .....	1353

## Abstract

Higher education course design is moving increasingly toward constructivist, collaborative approaches for higher-order learning. A community-based approach to learning fits both this type of pedagogy and preferred learning outcomes related to critical thinking and metacognition. This is particularly necessary when moving such learning online, and the need for a community is even more important for engagement and motivation than in-person learning, where community and connection is often created organically. Online learning communities can be effectively created using the community of inquiry theoretical framework, as it intentionally makes space for learners to express their teaching, social, and cognitive presences. To support the design of effective online learning experiences, how each presence fits into the constructivist and inquiry-based approaches is explained in this chapter. As well, applications are suggested. Finally, assessment approaches are provided that are in line with the tenets of constructivism, inquiry-based learning, and hence the community of inquiry.

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**Keywords**

Online learning · Community · Inquiry-based learning · Community of inquiry

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**Introduction**

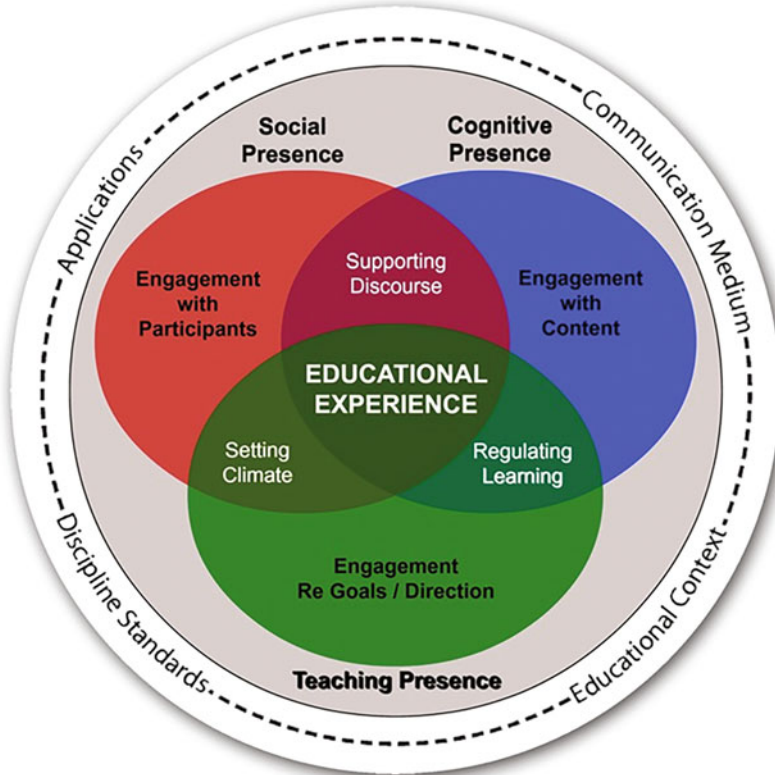
This chapter provides an overview of a community-based, learning-focused approach to the design, delivery, and assessment of online learning. This learning focus is supported by creating a learner-centered environment, offering dedicated support to those wishing to learn, and motivating those feeling less willing and/or less able to learn. One way to create such a learning environment is by creating community through strong facilitation and engagement processes, supported by effective information and communication technologies.

According to Bolliger, Shepherd, and Bryant (2019), faculty report that a sense of community in online courses drives both student engagement and satisfaction. Findings from 344 survey responses identify that 88% strongly agreed that community was important, 66% said community extends beyond classes, and only 37% said that there was a system in place at their institution to help online students build community (Berry, 2019). This gap for building effective community online can be filled by the most researched approach to online learning in community: the community of inquiry (CoI) theoretical framework for online and blended learning (Garrison, 2016). The CoI is now supported by two decades of research and practice and provides guidance and direction to create community that promotes not only engagement and satisfaction, but also higher-order learning, as is needed in higher education. Using constructivist, collaborative processes, this framework has been identified, of all the new techno-pedagogical education delivery models, as the model that has yielded the greatest impact in the field of distance education (Bozkurt, 2019). As the latest UNESCO report indicates, to impact the current global human rights issues, pedagogy must be rooted in cooperation and solidarity, with participants collaborating to meet this challenge (International Commission on the Futures of Education, 2021).

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**The Roots of Online Learning**

Emerging technologies have changed the ways in which we bridge the distance between teacher and learner. From a distance education perspective, these changes also carry forward from earlier generations of distance education the unique roles for learners and teachers, broader opportunities for access to learning, and additional requirements for learner self-direction (Cunningham, 2010; Shearer et al., 2020). These enduring characteristics of distance education create a type of online learning that is pedagogically distinct from more traditional, lecture-based teaching delivery in universities. This pedagogical distinction is discussed later in this chapter in reference to the community of inquiry theoretical framework (see Fig. 1), which is



**Fig. 1** The community of inquiry model. (Attribution to D.R. Garrison, University of Calgary, M. Cleveland-Innes, Athabasca University, N. Vaughan, Mount Royal University.)

used to guide the creation of high-quality, engaging online, and blended learning environments.

The following suggestions for online design describe what is required for active, engaging online learning activities (Ward, Peters, & Shelley, 2010). This applies whether the course is moving online from traditional, lecture-based, in-person delivery or arising from open and distance education. The differences, then, exist in the needed transition from current delivery models to high-quality, technology-enabled online and blended learning (Cook, 2020), described briefly at the end of this chapter, and discussed in detail other places in this book.

According to Hodges, Moore, Lockee, Trust, and Bond (2020), “what we know from research is that effective online learning results from careful instructional design and planning, using a systematic model for design and development” (p. 4). This can be considered as the central imperative of quality learning experiences in any online learning design. Broadly defined, quality sets out what counts as excellence in reference to preidentified standards. What counts as quality in a

complex, community-based, online learning environment often depends upon professional subjective interpretations of these standards, rather than empirical evidence (Bektashi, 2018; Nolan-Grant, 2019; Ossiannilsson, 2020; Rovai, 2002).

Further, online quality standards rest on the definitions of community and pedagogy. Where social learning theories are seen as foundational, required, and/or an enhancement to online learning, the development of online learning communities are part of a high-quality online learning experience (Zimmerman, Altman, Simunich, Shattuck, & Burch, 2020). This community-based experience moves the online course (and program) experience beyond mere content instruction and achievement of predetermined learning outcomes. Attempts to create this experience online occurs through supported and facilitated activities such as social interaction, meaningful engagement, and shared metacognition. These aspects of online learning design were well represented in Garrison's (2016) model of online and blended communities of inquiry.

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## The Community of Inquiry Theoretical Framework

Originally created in the late 1990s in support of early online design with text-based discussion (Garrison, Anderson, & Archer, 2001), the community of inquiry (CoI) theoretical framework shone significant light on the need for interaction, collaboration, and connections online. Significant developments have occurred in distance and online education since the original conception of the CoI. Over the last two decades, the CoI framework has been tested, applied, and adjusted for use across delivery methods and disciplines (Befus, 2016; Bozkurt, 2019; Castellanos-Reyes, 2020). The CoI framework is known to be (1) highly effective in the learning environment for which it was originally designed; (2) a good fit with further developments through emerging technologies for learning; and (3) compatible with blended as well as online learning (Le Roux & Nagel, 2018).

**Explaining the CoI framework.** The CoI framework “represents a collaborative approach to inquiry that fuses personal reflection and shared discourse for a deep and meaningful learning experience” (Garrison, 2016, p. 53). The framework rests on the assumption that engaging, meaningful, educational experiences, leading to deep learning outcomes, occurs at the convergence of three presences: *cognitive*, *teaching*, and *social presence*. Presence is the human orientation to the current environment and experience. It is defined, in this application of online learning design, as a required state of alert awareness, receptivity, and connectedness to the social, cognitive, emotional, and physical workings of all individuals in reference to the collective group in the context of their learning environments (adapted from a definition by Rogers & Raider-Roth, 2006, p. 1).

These presences emerge through learner-centered teaching and learning. Both presence and learner-centered approaches produce a more active learning climate, as suggested by foundational thinkers in education (Dewey, 1933; Vygotsky, 1997). Using the collected, shared individual experiences as a significant point of reference in the construction knowledge structures is critical to both learning processes and

learning outcomes. It can be considered a deliberative weaving of co-constructed understanding into individualized tapestries of knowledge. Beyond content or subject-matter expertise, engaged and active learning is seen as a key opportunity for developing competence in higher-order thinking skills (Garrison, 2016), which leads beyond content knowledge into high levels of intellectual development.

In short, the CoI requires that the learning process is explicit through meaningful engagement opportunities, where students explore multiple types of learning materials, rather than teacher-centered direct delivery of content. Drawing from the early direction of Schwab (1966), this teaching practice moves learners deliberately through active inquiry processes. According to Schwab, the active inquiry process starts by using questions and problems to stimulate thinking about the subject. When ready, teachers can invite learners to synthesize by identifying overlaps and relationships between concepts or variables. As learners advance through foundational knowledge in a particular subject, questions and/or problems are presented; learners are encouraged to discover the path to answers themselves. As knowledge and learning skill develops, learners identify the questions, problems, methods, and answers in the same subject themselves; the teacher provides guidance to shape, correct, and verify knowledge claims and facilitates learning.

**Creating a community of inquiry.** This multilayer pedagogical process is supported first by creating community through the original three presences of the CoI framework (social presence, cognitive presence, and teaching presence). These three presences are defined below. Figure 1 outlines the three presences and their respective subcategories, the binary overlaps, and the convergence on the educational experience.

**Teaching presence**, rather than “teacher presence,” is so named to allow for teaching functions for both teachers and learners in a community of inquiry. While the teacher, or instructor of record, plays a leadership role, teaching presence is carefully defined to encourage and allow for peer teaching. To become an effective online teacher, one must deconstruct traditional teaching presence or traditional assumptions about effective teaching and learning, and rebuild it in reference to online teaching and learning (Richardson & Alsup, 2015).

The central organizing activity of the CoI is teaching presence created by the integration of design and organization of a course and its community, facilitation of learning, and direct instruction of content. In these activities, the teacher who is instructor of record or the temporary peer-teachers who emerge in the course at varying times for various purposes provide support for the facilitation and direction of cognitive and social processes. The generation of satisfying learning experiences among students is noted in empirical studies (Zhu, Herring, & Bonk, 2019). This satisfaction is also linked to other presences in a significant way. For example, Shea and Bidjerano (2009) report that the learner experience of teaching presence affects the emergence of social presence.

**Social presence**, in its most current definition, is defined as “the ability of participants to identify with the community (e.g., course of study), communicate purposefully in a trusting environment, and develop interpersonal relationships by way of projecting their individual personalities” (Garrison, 2009, p. 352). Notions of

affective engagement that were part of the original definition of social presence (Garrison et al., 2001) are absent in this newer definition of social presence. This could be attributed to the increased attention being given to emotional presence, not yet identified as a fourth presence but in discussion as a critical element of CoI development and experience (Cleveland-Innes & Campbell, 2012; Dell, 2021; Lehman, 2006; Loderer, Pekrun, & Lester, 2018).

This definition of social presence mediates design thinking about student social activity, distinct from academic activity and in combination with it. The subcategories identify the design elements required, created through pedagogical processes, that will allow each respective presence to emerge. For social presence, these categories are personal expression, group cohesion, and open communication. Personal expression is expected to go beyond dialogue and interaction about course activities and content, an important part of the overlap between cognitive and social presence and between social presence and teaching presence. Personal expression means encouraging students to go beyond dialogue strictly about course activities and content into personal reflections and the presentation of self.

Group cohesion is fostered through the explicit identification and mutual agreement regarding shared purposes and the communal learning space. It emerges when represented by a sense of belonging and acceptance where individuals connect and have an affinity for other individuals in the group. This can be seen where meaningful, if short-term relationships develop, and expressions of a sense of trust and safety are noted. Open communication, the third subelement of social presence, supports both personal expression and group cohesion by allowing time and opportunity to express oneself freely and connect with others. This opportunity can be created in asynchronous virtual meeting places or in synchronous sessions.

**Cognitive presence** is defined as “the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry” (Garrison et al., 2001, p. 11). While not named as academic work in the CoI, it is in this space that academic debate, deliberation, and discussion occur (Cleveland-Innes & Emes, 2005). In the overlap with social presence, discourse is supported in the course design with multiple opportunities to critically reflect and share personal meanings and applications derived from the knowledge constructed.

Cognitive presence rests on four distinct but overlapping subcategories of practical inquiry: triggering events, exploration, integration, and resolution. A triggering event begins the process of inquiry through stimulation and presentation of information, ideas, or questions new to the audience. It requires attention and thought but needs less effort than the other three categories. Exploration provides the opportunity to examine new material closely from multiple perspectives. Integration of new material is the process of constructing structures and alignments of new information, on its own and in relation to other material, to the point of deep and meaningful understanding. The fourth subcategory, called resolution, brings the reason for covering the material, answering the question, or solving the problem to a logical conclusion. These pedagogical processes supporting the resolution phase of cognitive presence brings closure, whether temporarily or as a relative, momentary

**Table 1** CoI presences and conceptual subcategories

Presence	Subcategories
Social presence	Open communication Group cohesion Interpersonal expression
Cognitive presence	Triggering event Exploration of concepts and issues Integration with current knowledge and context Resolution to close inquiry
Teaching presence	Design and organization Facilitation of discourse Direct instruction

cessation of the topic at hand. The resolution phase is the temporary but definite closure of inquiry, which often ends with the identification of questions still to be answered and issues yet to be addressed.

These three presences represent the original, base model of the CoI. A fourth presence, *emotional presence*, has been suggested (Cleveland-Innes & Campbell, 2012; Stenbom, Jansson, & Hulkko, 2016). Emotional presence encapsulates the affective side of learning, originally identified as part of social presence. The element of emotion and learning has been further identified as something that permeates the model (Majeski, Stover, & Valais, 2018; Swan, 2019; Williams, 2017) (For a brief overview of the subcategories of individual presences, see Table 1).

## Community-Based Design and Delivery in Three Presences

Over time, the identification and accurate measurement of the framework requirements has provided (1) a more detailed examination of the original three presences; (2) the addition of emotional presence; (3) how the presences relate to one another; and (4) how they may be applied in practice (Arbaugh et al., 2008; Cleveland-Innes, Stenbom, & Garrison, manuscript in preparation). This identification and measurement provide empirical evidence to support design and delivery applications.

Establishing deep and meaningful learning requires activity in all four components. However, Akyol and Garrison (2011) report evidence that cognitive presence requires a balance among cognitive, social, and teaching presence. Direct instruction and facilitation of cognitive activity, beyond just explaining content, is a key role for teachers using this framework. This corroborates Archibald's (2010) evidence that teaching presence and social presence explain 69% of the variance in cognitive presence. While it is beyond the scope of this chapter to consider all relational aspects of the presences, the information below identifies application suggestions specific to individual presences with implicit consideration of the other presences at play.

**Applied teaching presence.** Table 2 provides examples of teaching presence and applications for design and delivery. In preparing a course to be delivered as a

**Table 2** Teaching presence indicators and applications for design

Subcategories	Indicators	Applications
Design and organization	<p>I clearly communicate important due dates/time frames for learning activities</p> <p>I clearly communicate important course goals, including explicit teaching about collaborative constructivist learning, design, and metacognitive goals</p> <p>I clearly communicate important course topics</p> <p>I provide clear instructions on how to participate in course learning activities, including explicit teaching about collaborative constructivist learning design</p>	<p>Ensure all course activities and deadlines are available online and send reminders via text, twitter, and encourage peer support check-ins</p> <p>Provide an explicit syllabus with clear course learning objectives and with links to materials</p> <p>As needed and allowed via institutional regulation, provide regular review and adjustment of course goals and content</p> <p>Make CoI design and delivery requirements explicit to students</p>
Facilitation	<p>My actions reinforce the development of a sense of community among course participants</p> <p>I help to identify areas of agreement and disagreement on course topics in a way that facilitates learning</p> <p>I encourage course participants to explore new concepts in my course</p> <p>I provide opportunities for learners to take on the role of teacher when the opportunity arises</p> <p>I keep course participants engaged and participating in productive dialogue</p> <p>I am helpful in guiding the class toward understanding course topics in a way that helps students clarify his/her thinking</p>	<p>Link course content and students' ideas through text and talk</p> <p>Brainstorm and agree to interaction and activity norms</p> <p>Acknowledge and encourage participation in structured and self-directed learning activities</p> <p>Ask questions</p> <p>Allow/assign presentation</p> <p>Share your own analysis and interpretation of course content</p> <p>Acknowledge and redirect as needed using humor, encouragement, and excitement</p>
Direct instruction	<p>I provide feedback in a timely fashion</p> <p>I provide feedback that helps learners understand strengths and weaknesses relative to the course goals and objectives</p> <p>I help to focus discussion on relevant issues in a way that helps students to learn</p>	<p>Open course segments and content areas with advanced organizers that prepare students for next steps</p> <p>Summarize course segments and content areas with reference to activities and individual student contributions</p> <p>Validate student actions and guide with direction and inquiry</p> <p>Maintain presence through regular and frequent interaction with individuals and group</p>

Adapted from Cleveland-Innes, 2019, p. 93

community of inquiry, the design and organization subcategory of teaching presence is enacted. Key to this phase of the design are openings for students to offer suggested adjustments to the course. The choice of learning materials, pedagogical



processes that include both teaching and learning activities, pacing, and assessment are critical elements of teaching presence. It is in the purview of the instructor of record to choose how much of each design and organization component will be handled individually by the teacher and what, and how much, responsibility for each component may be shared with the students. Feng, Xie, and Liu (2017) suggest that “different levels of presence should be emphasized at different stages of the course” (p. 181). This is also true for differing amounts of student input into the design and organization of the course over time. Teachers that observe learners’ behavior and engagement continuously are able to adjust the learning design according to the emerging learner behavior patterns.

Facilitation in this framework is focused on supporting the learning process; learning, to be thought of as a verb in this case, indicates actions related to the process of learning or transformational engagement. In reference to teaching presence in the CoI theoretical framework, facilitation “ensures social presence is established among community members and, in turn, that cognitive processes are directed to personally meaningful and educationally worthwhile outcomes” (Vaughan, Cleveland-Innes, & Garrison, 2013, p. 37). For example, it is important that the need for social connections is made explicit and important by the teacher. This can be done, for example, by telling students about each other and drawing connections between what students are doing or saying.

Direct instruction concentrates on content as the subject matter of the course. Here, learning outcomes are the focus and the learning definition is a noun: knowledge or skill gained from the process of learning. Providing an explicit syllabus that outlines well-articulated learning outcomes is a key to supporting the acquisition of learning outcomes; it is a shared map for every member of the community. These outcomes are then linked to assignments or any activity that engages students in ways that move them toward achieving those outcomes.

**Applied social presence.** Table 3 demonstrates topics of focus for social presence in reference to the subcategories that support the definition of social presence. The indicators provide the student orientation to learning adherents of the CoI required in each subcategory of social presence. Ways to apply these goals are identified in the table. These application suggestions are derived from instructor feedback at development workshops, research literature about teaching and learning, and the authors’ experiences designing and teaching with the CoI framework.

For all presences, and their subcategories, explicit discussion of the hopes and expectations in each category is essential. Instructors should ideally start each course with a review of required learning outcomes and the requirements of each element in the community of inquiry. They should allow time for student reaction about the CoI and feedback regarding clarification or concerns. It is important that instructors set operational norms for community activity such as informal rules for sessions.

Personal expression is the offering of salience of oneself and, in return, expecting to see salience of the other person with whom one is engaged in the interaction (Kreijns, Van Acker, Vermeulen, & Van Buuren, 2014). This can begin with introductions in an online café space, populated first by the instructor and requested of students. Instructors can start with a pre-course survey asking students to identify

**Table 3** Social presence indicators and applications for design

Subcategories	Indicators	Applications
Personal expression	<p>I create opportunities to allow learners to form distinct impressions of some other course participants</p> <p>I create opportunities for students to get to know other learners to create belonging</p> <p>I try to model online or web-based communication as an excellent medium for interaction</p>	<p>Provide and support online spaces and structured activities that encourage and support social interaction</p> <p>Facilitate relationship development among students through group activities and assignments</p> <p>Respond in a timely and personal way to student posts, emails, and other digital communications</p>
Open communication	<p>I create opportunities for learners to develop comfort about interacting with other course participants</p> <p>I try to ensure learners feel comfortable conversing online or in person in my course</p> <p>I work to ensure learners feel comfortable participating in course discussions</p>	<p>Discuss social presence, its value to learning, and set norms for social and academic interaction</p> <p>Review and discuss course climate as it evolves</p> <p>Encourage, validate, and support all students in the presentation of thoughts, feelings, and interpretations</p>
Group cohesion	<p>I work to ensure learners feel comfortable disagreeing with other course participants while still maintaining a sense of trust</p> <p>I work to ensure learners feel their point of view is acknowledged by other course participants</p> <p>I create to ensure that online or in-person discussions can help learners to develop a sense of collaboration</p>	<p>Provide opportunity for individuals to present their ideas, engage in interaction one to one, and work and interact in small and large groups</p> <p>Discuss, work toward consensus, and continue to verify and adjust group norms during the course</p> <p>Use deliberative dialogue principles that include acceptance and validation of everyone's ideas in group norms</p> <p>Make explicit the value of deliberative dialogue and collaborative learning</p>

Adapted from Cleveland-Innes, 2019, p. 94

their background in the subject matter, if any, and their own individual goals for completing the course – both the activity goals and the completion goals. Instructors should acknowledge and validate text or spoken personal expressions that students offer, noting similarities in geographic or occupational places.

The second subcategory of social presence, open communication, is both required for and fostered by personal expression. Open could be seen here as an euphemism for accepting and inclusive. It is represented by actions and opportunities for “continuing a thread, quoting from others’ messages, referring explicitly to others’ messages, asking questions and getting feedback, complimenting or expressing appreciation, and expressing agreement” (Kreijns et al., p. 9). As suggested in the organizational literature, open communication allows community members to interact with each other and share experiences and information (Cherrington, 1989).

Group cohesion is the extent to which the students in a CoI are connected to one another. Like all sound structures, physical or social, the strength of the system or structures rests on the strength of the connections among the elements. Cohesive groups share a common purpose, and all participate in appropriate and supportive ways. Conflict is dealt with respectfully and openly and is accepted as a normal part of the human experience. Members can express feelings, share the leadership of the group, and operate in a space where the rules of operation are transparent, explicit, and agreed upon.

**Applied cognitive presence.** Table 4 offers application suggestions for design and delivery in each of the four subcategories that define cognitive presence. The indicators represent the teacher's observational perspective of student activity and interaction representing cognitive presence in each of the four subcategories. Design and delivery opportunities can support these elements of cognitive presence. The application suggestions provided here are derived from feedback at development workshops, literature reviewing online learning, and the first author's experience designing and teaching with the CoI framework.

In the first consideration of designing a trigger event, inquiry learning requires provision of a focal point for cognitive activity. Questions or problems are two examples of such triggers that stimulate curious attention to course content. "The instructor can bring readings, and other self-regulated student activity, to life by bringing attention to key points. This can be done with visuals, stories, questions, problems and presentation of information" (Vaughan et al., 2013, p. 40).

Cognitive presence will continue where design and delivery engages students in exploring the content reviewed in the triggering event. Problems and questions may be explored, by the individual and/or in the community, through reflection and discourse. Integration describes the accommodation and assimilation of the new insights into existing understandings and principles of practice. Resolution refers to the closure of the inquiry for that section or content, problem, or question. Often a temporary situation, this process includes providing a summary, feedback, and suggestions about what else needs to be considered.

Although listed and presented in a linear fashion, these four subcategories of cognitive presence can occur in almost any order. For example, resolution can cause a return to any of the three other places of practical inquiry. Also, part of design is determining how much time to spend in, for example, triggering thought about seminal concepts in a course as opposed to requiring exploration of the topic or integration with other topics and, finally, resolving the issue or solving the problem.

**Applied emotional presence.** According to Lehman (2006), "Distance education researchers are beginning to incorporate into their research the idea of the role of emotion in creating presence and are influencing the direction of the field" (p. 13). Now seen as a recent rendition of distance education, online learning research identifies the value of emotion in learning in the design and delivery of blended and online learning (Cleveland-Innes & Campbell, 2012; Dell, 2021; Majeski et al., 2018).

Teaching with emotional presence involves encouraging learners to engage with understanding, acceptance, and transparency about their learning-related emotion and that of others. In this way, negative emotion can be minimized as a deterrent to

**Table 4** Cognitive presence indicators and applications for design

Subcategories	Indicators	Applications
Triggering event	<p>I encourage exploration and motivation to explore content-related questions</p> <p>I integrate course activities that pique students' curiosity</p> <p>I pose problems and question prompts that increase student interest in course content</p>	<p>Share your passion and points of interest in reference to the subject matter and everyday life</p> <p>Use varied and unique materials and approaches to engaging students with learning material</p> <p>Use problem-based learning processes that support engagement and higher levels of intellectual development</p>
Exploration	<p>I facilitate online discussions in a way that helps students appreciate different perspectives</p> <p>I create opportunities for brainstorming and finding relevant information that helps learners seek resolution to content-related questions</p> <p>I provide a variety of information sources to help learners explore problems posed in my course</p>	<p>Provide opportunities for application of knowledge outside the class environment</p> <p>Offer opportunity for peer facilitation of forums exploring new topics</p> <p>Provide opportunities to search for content outside course materials</p> <p>Offer library orientation and search skills training for valuable subject-related resources</p>
Integration	<p>I provide opportunities for reflection on course content and discussion that help learners to understand fundamental concepts</p> <p>I create opportunities for learners to combine information to explore questions raised in course activities</p> <p>I select learning activities that help learners to construct explanations/ solutions</p>	<p>Student-driven material choices allow for high engagement with content-related integration and synthesis</p> <p>Self-directed, actively created learning assignments provide students the opportunity to master and apply content in creative ways</p> <p>Discussion and application of knowledge is facilitated as a regular part of course activities</p>
Resolution	<p>I create course components to build conditions for learners to describe ways to test and apply the knowledge learned</p> <p>I create opportunities for reflection that helps learners apply the knowledge created in my course to his/her work or other non-class-related activities</p> <p>I provide opportunities for learners to develop solutions to relevant problems that can be applied in practice</p>	<p>Respond in a timely fashion to provide synergy between posts and individuals as course segments and topics are summarized and closed</p> <p>Course activities and assignments require reflection, application, and critique of course material</p>

Adapted from Cleveland-Innes, 2019, p. 94

learning and used where possible as a motivation for learning. Table 5 provides introductory possibilities for leveraging emotion in support of learning. In the teachers' CoI self-assessment, emotions identified empirically as part of each subcategory within the presences are outlined.

**Table 5** Emotional indicators and applications for design

Subcategories	Indicators	Applications
Related to teaching presence	In my role as instructor, I demonstrate (role model) emotion in my presentations and/or when facilitating discussions, online or in person I acknowledge the emotion expressed by the learners in my course	Model expressions of emotional response in written and oral communications Acknowledge and support student expressions of emotional response in written and oral communications
Related to social presence	I create space for learners to feel comfortable expressing emotion through the online medium or in the in-person classroom I create space to ensure emotion is expressed, online or in person, among the learners in my course	Make explicit the acceptable use of emoticons and emotional language as part of the course learning environment Encourage, acknowledge, and support expressions of emotion during course activities
Related to cognitive presence	I find myself responding emotionally about ideas or learning activities in my course I communicate that expressing emotion in relation to sharing ideas is acceptable in my course	Emotion is identified as a regular part of human existence including learning and thinking Emotional experience and expression are shared, acknowledged, and accepted among all members of the learning community

Adapted from Cleveland-Innes, 2019, p. 95

The original CoI measurement instrument was designed to measure the student experience. The self-assessment tool presented below uses transposed indicators of each presence to assess the teacher's point of view. This self-assessment is offered for individual self-evaluation of current teaching practices. It can also be used as reference for CoI instructional design and delivery.

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## CoI and Learning Assessment

In the CoI, the emergence of the social, cognitive, and teaching presences fit well with the constructivist, collaborative perspective where the learners are actively participating in their learning. This environment is needed to create a context for sustained discourse, creating a platform for higher-order, deep, and meaningful learning to emerge (Akyol & Garrison, 2011) as is needed in higher education.

Assessment of learning within the community of inquiry framework is not conducted only on specific learning outcomes, but also on the process by which learning occurs (Akyol & Garrison, 2011; Conrad & Openo, 2018). In the CoI framework, the presences are critical for community, inquiry, and deep learning to develop (Vaughan et al., 2013). This is not rote learning or surface learning, and as such is contextual, problem based, and in need of multiple inputs and perspectives. Such learning involves a process to access higher-order learning, and takes advantage of metacognition and reflection to do so.

With this type of deep, contextualized learning that involves critical thinking, the learner needs to be at the center, involving learner teaching presence, whether in design elements, direct instruction, or facilitation (Vaughan et al., 2013). Peer assessment, self-assessment, use of rubrics, and instructor formative feedback can be used to encourage learner engagement in the construction of knowledge. Particularly focusing on the meaningful contributions to discourse (Akyol & Garrison, 2011), specific reflection or feedback activities may include those such as peer assessment on another learner's discussion forum facilitation or presentation of a given topic, self-reflections on what has been learned through the process of a given learning activity, or instructor feedback on the learner's contributions.

One important piece in the community of inquiry, and in the constructivist approach, is that learning is contextualized, and to create such a context, and to ensure that the inquiry process is at play, authentic and personally meaningful problems for the learner should be included in the inquiry process (Ertmer & Newby, 2013). Therefore, the learner's ability to choose the topic or even the assignment can help support the learner's full identification with the project. This can situate the learner in a position of a growing expert, in need of other perspectives and inputs to fully resolve the inquiry.

Higher-order learning is a challenge to assess as part of the formal assignment structures (Akyol & Garrison, 2011). Naturally, the products created can be assessed against how well they meet the specific learning outcomes. However, assessment of discourse contributions and reflections on the learning process can also be a way to assess higher-order learning. Instructors specifically need to acknowledge and validate contributions that exhibit critical reflection and critical analysis, key artifacts of higher-order thinking.

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## Conclusion

Why move higher education course design to community-based learning? Learning communities support learner engagement and satisfaction, as well as deep learning outcomes. While this is true for all modes of teaching and learning design and delivery, the strategies for creating a sense of community online are quite different (Mullinix, 2018). Community is also a powerful tool in support of inquiry-based learning. Creating communities of inquiry in blended and online learning is one of the most researched pedagogical approaches in universities and colleges. The original Garrison et al. (2001) article explaining this framework has been cited in the scholarly literature over 4000 times. Much of the early research focused on understanding social presence (Richardson & Swan, 2003) as a new way to approach teaching beyond strict transmission models of delivery. A significant amount of research has also been done to measure the components of this framework and how they operate in reference to one another (Arbaugh et al., 2008; Garrison, Cleveland-Innes, & Fung, 2010).

A recent analysis of the literature identified that in measuring and applying the community of inquiry, "the most frequently used and the one adopted the most

commonly in the literature is the CoI survey instrument developed by Arbaugh et al. (2008)” (Olpak, Yagci, & Basarmak, 2016, p. 1090). This chapter offers rationale, and application suggestions, for serious consideration of the CoI as a contemporary framework for online design and delivery, in support of deep and meaningful learning.

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## References

- Akyol, Z., & Garrison, D. R. (2011). Understanding cognitive presence in an online and blended community of inquiry: Assessing outcomes and processes for deep approaches to learning. *British Journal of Educational Technology, 42*(2), 233–250.
- Arbaugh, J. B., Cleveland-Innes, M., Diaz, S. R., Garrison, D. R., Ice, P., Richardson, J. C., & Swan, K. P. (2008). Developing a community of inquiry instrument: Testing a measure of the community of inquiry framework using a multi-institutional sample. *The Internet and Higher Education, 11*(3), 133–136. <https://doi.org/10.1016/j.iheduc.2008.06.003>.
- Archibald, D. (2010). Fostering the development of cognitive presence: Initial findings using the community of inquiry survey instrument. *The Internet and Higher Education, 13*(1–2), 73–74.
- Befus, M. (2016). Conducting a multivocal thematic synthesis on an extensive body of literature. *Canadian Journal of Learning and Technology, 42*(2).
- Bektashi, L. (2018). Community of inquiry framework in online learning: Use of technology. *Technology and the Curriculum: Summer, 2018*.
- Berry, S. (2019). Faculty perspectives on online learning: The instructor’s role in creating community. *Online Learning, 23*(4), 181–191.
- Bolliger, D. U., Shepherd, C. E., & Bryant, H. V. (2019). Faculty members’ perceptions of online program community and their efforts to sustain it. *British Journal of Educational Technology, 50*(6), 3283–3299.
- Bozkurt, A. (2019). Intellectual roots of distance education: A progressive knowledge domain analysis. *Distance Education, 40*(4), 497–514.
- Castellanos-Reyes, D. (2020). 20 years of the community of inquiry framework. *TechTrends: Linking Research & Practice to Improve Learning, 64*(4), 557–560.
- Cherrington, D. J. (1989). *Organisational behaviour*. London, England: Allyn & Bacon.
- Cleveland-Innes, M. (2019). The community of inquiry theoretical framework: Designing collaborative online and blended learning. In H. Beetham & R. Sharpe (Eds.), *Rethinking pedagogy for a digital age: Principles and practices of design* (3rd ed., pp. 85–102). Routledge. <https://doi.org/10.4324/9781351252805>.
- Cleveland-Innes, M., & Campbell, P. (2012). Emotional presence, learning, and the online learning environment. *International Review of Research in Open & Distance Learning, 13*(4), 269–292.
- Cleveland-Innes, M. F., & Emes, C. (2005). Social and academic interaction in higher education contexts and the effect on deep learning. *NASPA Journal, 42*(2), 241–262.
- Cleveland-Innes, M.F., Stenbom, S., & Garrison, D.R., Eds. (manuscript in preparation). *The design of digital learning environments: Online and blended applications of the community of inquiry*. New York, NY: Routledge.
- Conrad, D., & Openo, J. (2018). *Assessment strategies for online learning: Engagement and authenticity*. Alberta, Canada: Athabasca University Press. <https://doi.org/10.15215/aupress/9781771992329.01>.
- Cook, K. C. (2020). An argument for pedagogy-driven online education. In *Online education* (pp. 49–66). New York, NY: Routledge.
- Cunningham, J. (2010). Self-direction: A critical tool in distance learning. *Common Ground Journal, 7*(2), 89–100.
- Dell, D. (2021). *Emotional presence indicators in an online Community of Inquiry: A scoping review and Delphi study of student and facilitator experience*. Doctoral dissertation, Athabasca University.

- Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process*. Boston, MA: D.C. Heath & Co Publishers.
- Ertmer, P. A., & Newby, T. J. (2013). Behaviorism, cognitivism, constructivism: Comparing critical features from an instructional design perspective. *Performance Improvement Quarterly*, 26(2), 43–71.
- Feng, X., Xie, J., & Liu, Y. (2017). Using the community of inquiry framework to scaffold online tutoring. *The International Review of Research in Open and Distance Learning*, 18(2), 162–188.
- Garrison, D. R. (2009). Communities of inquiry in online learning: Social, teaching and cognitive presence. In C. Howard et al. (Eds.), *Encyclopedia of distance and online learning* (2nd ed., pp. 352–355). Hershey, PA: IGI Global.
- Garrison, D. (2016). *E-learning in the 21st century: A framework for research and practice*. New York, NY: Routledge.
- Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of Distance Education*, 15(1), 7–23.
- Garrison, D. R., Cleveland-Innes, M., & Fung, T. S. (2010). Exploring causal relationships among teaching, cognitive and social presence: Student perceptions of the community of inquiry framework. *The Internet and Higher Education*, 13(1–2), 31–36.
- Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). The difference between emergency remote teaching and online learning. *Educause Review*, 27(1), 1–9.
- International Commission on the Futures of Education. (2021). *Reimagining our futures together: A new social contract for education*. Paris, France: UNESCO.
- Kreijns, K., Van Acker, F., Vermeulen, M., & Van Buuren, H. (2014). Community of inquiry: Social presence revisited. *E-learning and Digital Media*, 11(1), 5–18.
- Le Roux, I., & Nagel, L. (2018). Seeking the best blend for deep learning in a flipped classroom—viewing student perceptions through the community of inquiry lens. *International Journal of Educational Technology in Higher Education*, 15(1), 1–28.
- Lehman, R. (2006). The role of emotion in creating instructor and learner presence in the distance education experience. *Journal of Cognitive Affective Learning*, 12–26.
- Loderer, K., Pekrun, R., & Lester, J. C. (2018). Beyond cold technology: A systematic review and meta-analysis on emotions in technology-based learning environments. *Learning and Instruction*. <https://doi.org/10.1016/j.learninstruc.2018.08.002>.
- Majeski, R. A., Stover, M., & Valais, T. (2018). The community of inquiry and emotional presence. *Adult Learning*, 29(2), 53–61. <https://doi.org/10.1177/1045159518758696>.
- Mullinix, B. B. (2018). Creating online community: Tools promoting choice, voice and connectivity. In *ANNUAL* (p. 119).
- Nolan-Grant, C. R. (2019). The community of inquiry framework as learning design model: A case study in postgraduate online education. *Research in Learning Technology*, 27. <https://doi.org/10.25304/rlt.v27.2240>.
- Olpak, Y. Z., Yagci, M., & Basarmak, U. (2016). Determination of perception of community of inquiry. *Educational Research and Reviews*, 11(12), 1085–1092.
- Ossiannilsson, E. (2020). Quality models for open, flexible, and online learning. *Journal of Computer Science Research*, 2(4). <https://doi.org/10.30564/jcsr.v2i4.2357>.
- Richardson, C., & Alsup, J. (2015). From the classroom to the keyboard: How seven teachers created their online teacher identities. *International Review of Research in Open and Distance Learning*, 16(1).
- Richardson, J., & Swan, K. (2003). Examining social presence in online courses in relation to students' perceived learning and satisfaction. *Journal of Asynchronous Learning Networks*, 7, 68–88.
- Rogers, C. R., & Raider-Roth, M. B. (2006). Presence in teaching. *Teachers and Teaching: Theory and Practice*, 12(3), 265–287.
- Rovai, A. P. (2002). Building sense of community at a distance. *The International Review of Research in Open and Distributed Learning*, 3(1).



- Schwab, J. J. (1966). Teaching and learning as inquiry and the contribution of television. In W. McBride (Ed.), *Inquiry: Implications for televised instruction*. Washington, DC: National Education Association.
- Shea, P., & Bidjerano, T. (2009). Cognitive presence and online learner engagement: A cluster analysis of the community of inquiry framework. *Journal of Computing in Higher Education*, 21(3), 199.
- Shearer, R. L., Aldemir, T., Hitchcock, J., Resig, J., Driver, J., & Kohler, M. (2020). What students want: A vision of a future online learning experience grounded in distance education theory. *American Journal of Distance Education*, 34(1), 36–52.
- Stenbom, S., Jansson, M., & Hulkko, A. (2016). Revising the community of inquiry framework for the analysis of one-to-one online learning relationships. *The International Review of Research in Open and Distributed Learning*, 17(3). <https://doi.org/10.19173/irrodl.v17i3.2068>.
- Swan, K. (2019). Social construction of knowledge and the community of inquiry framework. In *Open and distance education theory revisited* (pp. 57–65). Springer.
- Vaughan, N. D., Cleveland-Innes, M., & Garrison, D. R. (2013). *Teaching in blended learning environments: Creating and sustaining communities of inquiry*. Alberta, Canada: Athabasca University Press.
- Vygotsky, L. S. (1997). *The collected works of LS Vygotsky: Problems of the theory and history of psychology* (Vol. 3). Springer Science & Business Media.
- Ward, M. E., Peters, G., & Shelley, K. (2010). Student and faculty perceptions of the quality of online learning experiences. *The International Review of Research in Open and Distance Learning*, 11(3), 57–77.
- Williams, L. S. (2017). The managed heart: Adult learners and emotional presence online. *Journal of Continuing Higher Education*, 65(2), 124–131. <https://doi.org/10.1080/07377363.2017.1320204>.
- Zhu, M., Herring, S. C., & Bonk, C. J. (2019). Exploring presence in online learning through three forms of computer-mediated discourse analysis. *Distance Education*, 40(2), 205–225.
- Zimmerman, W., Altman, B., Simunich, B., Shattuck, K., & Burch, B. (2020). Evaluating online course quality: A study on implementation of course quality standards. *Online Learning*, 24(4), 147–163.

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