

The Community of Inquiry Theoretical Framework:
In the Context of Online and Blended Learning

D. R. Garrison

Z. Akyol

Theoretical interests and developments in the field of distance education have progressed from a preoccupation with organizational and structural barriers to transactional (teaching and learning) concerns (Garrison, 2000). This transformational shift is the result of advances in communications technology coupled with a focus on collaborative-constructivist learning theories (Garrison & Archer, 2000). The transactional era of distance education has been made possible by the capabilities of information and communication technologies (ICT) to create and sustain communities of learners at a distance. The emergence of new asynchronous and synchronous communications technology has made possible collaborative distance education experiences.

Online learning now represents the post-industrial era of distance education with the focus on designing context specific collaborative educational experiences (Garrison & Cleveland-Innes, 2010). Integrating ICT, online learning creates both independence and interaction enabling the creation of learning communities. Online learning has been utilized extensively to enhance classroom learning as well as to increase access to educational experiences at a distance. Articles on the educational uses of computer mediated communication (CMC) in general and asynchronous computer conferencing in particular began appearing in the 1980s. One of the first articles to cause distance educators to take note was by Roxanne Hiltz (1986). She argued that CMC could be used to build a ‘virtual classroom.’ At about the same time, Paulsen and Rekkedal (1988)

discussed the potential of CMC and stated that “the most exciting challenge in the long run will be to apply the new technology to create new and more efficient learning situations, rather than replicate the traditional classroom or distance learning environment” (p. 363). These insights were prescient.

This same message was carried forward by Kaye (1987; 1992; Mason & Kaye, 1989), another early researcher in online learning. Kaye (1987) rightly noted that CMC is “qualitatively different from other interpersonal and group communication media” (p. 157). Kaye (1992) recognized that computer conferencing represented a new form of collaborative learning that goes beyond information exchange and necessitated moderated critical discourse to realize new and worthwhile learning. Lauzon and Moore (1989) were the first to recognize that the potential of computer conferencing represented a new generation of distance education characterized by networked, asynchronous group communication. Like her contemporaries, Harasim (1987; 1989, 1990) argued strongly “that on-line education ... represents a unique domain of educational interaction” (Harasim, 1989, p. 50). She argued for instructional designs to accommodate collaborative online learning, thus adopting constructivist learning approaches. From a research perspective, Henri (1992) advocated and provided a framework to systematically study computer conferencing. She identified both cognitive and social dimensions of computer conferencing that enhance learning outcomes. This may have been the first coherent theoretical approach to studying the methodologies of CMC and computer conferencing.

A Theoretical Framework

Much of the research and practice associated with online learning during the 1990s focused on and took advantage of the social and democratic features of the technology (Gunawardena, 1991; 1995; Harrasim, 1990). Some researchers attempted to broaden the focus to include cognitive elements and focused on the ability of this medium to support higher-order learning (Garrison, 1997; Newman, Johnson, Cochrane, & Webb, 1996). Another key area of research was the role of the moderator as facilitator of the learning process (Feenberg, 1989; Gunawardena, 1991; Kaye, 1992; Fabro & Garrison, 1998). It is these three essential elements (social, cognitive and teaching) that form the core of the framework outlined next.

Garrison, Anderson, and Archer (2000) constructed a comprehensive conceptual framework designed to capture the educational dynamic and guide the study of online learning effectiveness in higher education. The first assumption was that an educational experience intended to achieve higher-order learning outcomes is best embedded in a community of inquiry composed of students and teachers (Lipman, 1991). Lipman (2003) argued the necessity of a community of inquiry for the operationalization of critical or reflective thinking and as an educational methodology. This assumption was also consistent with the educational philosophy of Dewey (1959), who described education as the collaborative reconstruction of experience. The context for this study was a collaborative-constructivist learning experience within a community of inquiry. An educational community of inquiry is a group of individuals who collaboratively engage in purposeful critical discourse and reflection to construct personal meaning and confirm

mutual understanding. There is both independence and interaction (co-regulation) in a community of inquiry.

This was a sharp departure from theories of distance education that idealize student independence. It was the early work of Moore and Garrison, among others, who focused on communication (i.e., transactional) dynamics between teacher and student and attempted to clarify the concept of independence. Moore (see chapter 6) focused on the dimensions of structure, dialogue and independence while some early work of Garrison and Baynton (1987) explored the concept of control consisting of power, support and independence. The chapter by Anderson in this text explores these constructs but suffice to say here, the central role of dialogue/discourse in this work was seen to be central to the distance education experience. Moreover, the issues of structure and autonomy in Moore's theory have their parallels in terms of the affordances of technology and design/organization in the community of inquiry framework. While the focus here is not to explore these connections, such an endeavor would be worthwhile to better understand the evolution of distance education and whether the field has fully embraced the interactive potential of new and emerging ICTs (Garrison, 2009a).

An educational community of inquiry is defined as “a group of individuals who collaboratively engage in purposeful critical discourse and reflection to construct personal meaning and confirm mutual understanding” (Garrison, 2011, p.2). The Community of Inquiry (CoI) theoretical framework embraces deep approaches rather than surface approaches to learning and aims to create conditions to encourage higher order cognitive processing. Relative to many distance education theories, the CoI framework is grounded in specific philosophical and epistemological assumptions and

learning theories (Garrison, in press). In this regard, the CoI theoretical framework represents a process of creating a deep and meaningful (collaborative-constructivist) learning experience through the development three interdependent elements – social presence, cognitive presence and teaching presence (Figure 1). A sense of being (i.e. presence) is created through interpersonal communication. In order to provide an effective inquiry process and achieve higher order learning, all three presences must be developed in balanced (Akyol & Garrison, 2008).

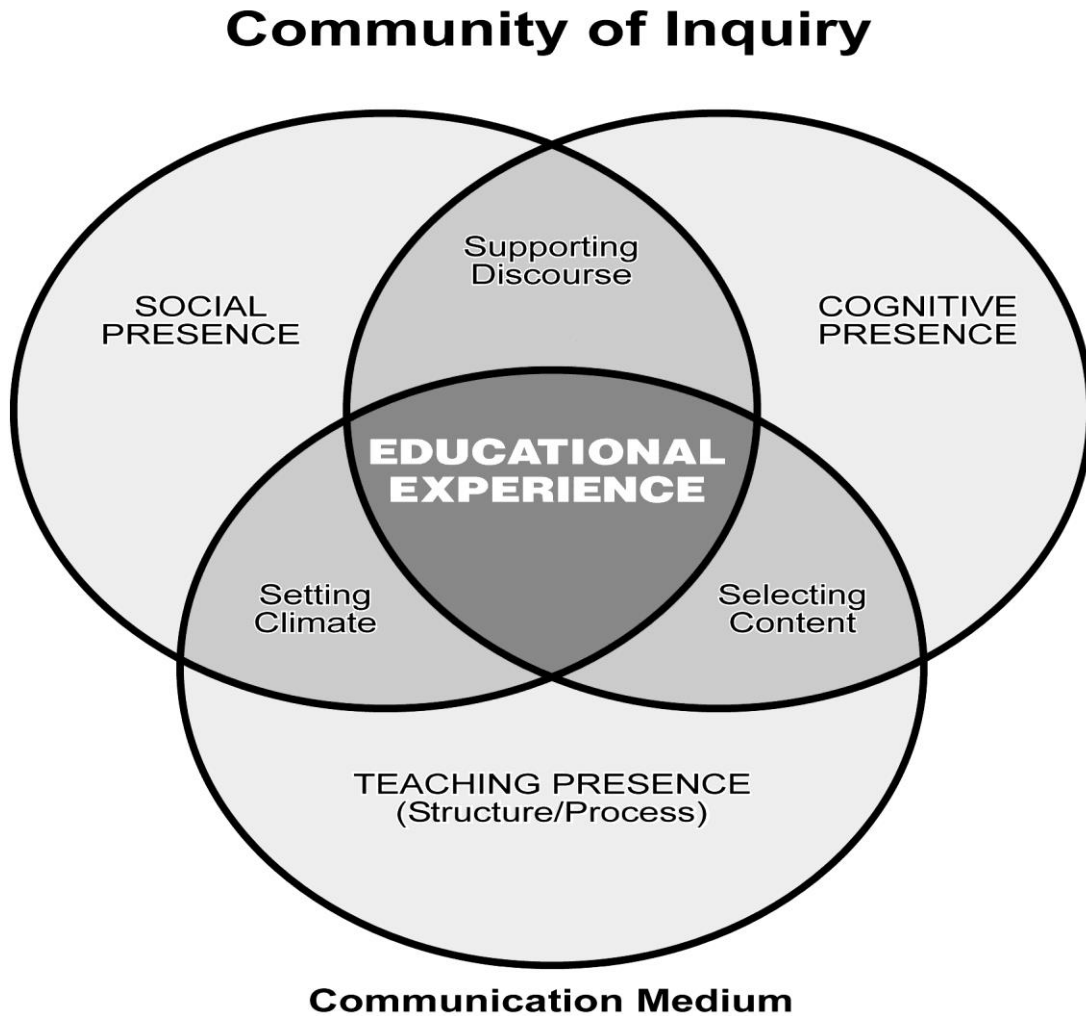


Figure 1: The Community of Inquiry Theoretical Framework

Before describing each presence in detail, it is important to mention the theoretical development of the CoI framework. A decade of CoI research has provided the empirical evidence that the CoI framework represents a coherent set of articulated elements and respective models describing a higher learning experience applicable to wide range of learning environments (from face-to-face to online, from K-12 to higher education). It also provides the means to understand and explore the relationships among

the elements and learning, and it has the ability to generate hypotheses and provide the theoretical context to interpret findings. These developments verify that the CoI framework has sufficient coherence and explanatory power to be considered a theory (Garrison, 2011). Therefore, the terminology has been shifted from the CoI framework to the CoI theoretical framework in this new edition.

Social Presence

Within the community of inquiry model, social presence was initially defined as the ability of learners to project themselves (i.e., their personal characteristics) socially and emotionally, thereby representing themselves as “real” people, in a community of inquiry (Rourke, Anderson, Garrison & Archer, 2001). Establishing relationships and a sense of belonging is important. However, the role of social presence in a purposeful learning community is to support critical inquiry and the achievement of educational outcomes. Social presence does not mean supporting engagement for purely social purposes, it means creating a climate that supports and encourages probing questions, skepticism, expressing and contributing to ideas. As Rogers and Lea (2005) indicate when individuals identify with the group and the purpose, the group is more productive (as opposed to simply creating interpersonal bonds). To reinforce this, Jahng, Nielsen and Chan (2010) found that increased social communications reduced cognitive presence. Therefore, in order to emphasize the mediating role of social presence to collaboration and critical discourse, the definition of social presence has been revised as the ability of participants to identify with the group or course of study, communicate purposefully in a trusting environment, and develop personal and affective relationships progressively by way of projecting their individual personalities (Garrison, 2009b). The new definition

suggests that social presence should be developed naturally and progressively through the purposeful and collaborative inquiry process (Garrison, 2011).

Three broad categories of social presence, along with indicators of these categories, were identified through a review of the literature (Garrison, et al., 2000). Through the analysis of the transcripts of online courses, adjustment, and re-application, these categories and their associated indicators were refined by Rourke, Anderson, Garrison & Archer (2001). The resulting construct was used to detect and quantify levels of social presence in different online courses. The categories of social presence that were derived from this research are affective communication, open communication and group cohesion. However, after a decade of research into the community of inquiry theoretical framework, it would appear that affective responses may not be the defining characteristics of social presence. Affective interpersonal communication may describe the initial conditions that establish a community of inquiry. Affective expression using emoticons, capitalization or punctuation, self-disclosure and use of humor are indicators of the interpersonal communication aspect of social presence. Open Communication encourages critical reflection and discourse through a process of recognizing, complimenting, and responding to the questions and contributions of others. Interpersonal and open communications contribute directly to the third category of social presence – group cohesion. Group cohesion is achieved when students identify with the group and perceive themselves as a part of the community of inquiry. Cohesive communication begins with activities such as addressing others by name and continuous with using inclusive pronouns such as we, our as the next level. Group cohesion increases the

capacity for collaboration; the discourse (the sharing of meaning) and the quality of learning will be optimized when there is a cohesive community.

The natural progression or development of these three categories over time raises the issue of the dynamic of social presence. Theoretically, it was predicted that open communication will be high at the beginning and diminish slightly over time while group cohesion and interpersonal indicators will increase (Garrison, 2011). The research of Akyol and Garrison (2008) confirmed this when the data showed a decrease in open communication and an increase in group cohesion over time. Moreover, it should also be noted that the development and progression of social presence categories may vary depending on the instructional design of the course, the technology used for communication, or the level of teaching presence (Swan & Shih, 2005; Nippard & Murphy, 2007; Shea, Hayes, Vickers et al., 2010). For example, Shea et al. (2010) found a rise or fall in student social presence with the rise and fall of instructor teaching presence. This research also confirms the interrelatedness of the CoI elements.

When social presence is established, collaboration and critical discourse is enhanced and sustained. Studies have found a relationship between social presence and learning outcomes (Swan & Shih, 2005; Caspi & Blau, 2008; Liu, Gomez & Ye, 2009) and social presence and satisfaction (Arbaugh & Benbunan-Fich, 2006; Richardson & Swan, 2003; Akyol, Garrison & Ozden, 2009). Recently, research on the potential relationship between social presence and retention has shown a significant relationship between social presence and retention (Boston, Diaz, Gibson, Ice, Richardson & Swan, 2009). The authors concluded that social interaction remains a crucial factor for retention.

Further research is required to better understand the influence of social presence on learning variables and retention.

Cognitive Presence

The second element in the framework is cognitive presence. We define cognitive presence “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, Anderson & Archer, 2001). The concept of cognitive presence is grounded in the critical thinking literature and derived specifically from Dewey’s (1933) reflective thinking model. According to Dewey, reflective or critical thinking deepens the meaning of our experiences and is therefore a core educational aim. Critical thinking both authenticates existing knowledge and generates new knowledge suggesting an intimate connection with education. Critical thinking is integral to inquiry and viewed as an inclusive process of higher-order reflection and discourse. Cognitive presence is operationalized by the Practical Inquiry (PI) model that, as noted previously, has its genesis in Dewey’s phases of reflective inquiry (Figure 2). One key characteristic of this model is the interplay between the public and private worlds which is particularly relevant to the e-learning experience in an asynchronous and text-based environment. The model has two dimensions that reflect inductive/deductive and divergent/convergent processes of critical thinking. The vertical axis, the deliberation-action dimension, represents constructive and collaborative activities. It reflects the rigorous process of integrating induction (arrival of generalizations) and deduction (employment of generalizations). The horizontal axis is the perception-conception dimension which reflects the point of fusion of the shared and private worlds. At one extreme is the divergent process of perception and analysis of

facts or events; at the other extreme is the convergent process of insights and understanding associated with ideas and concepts.

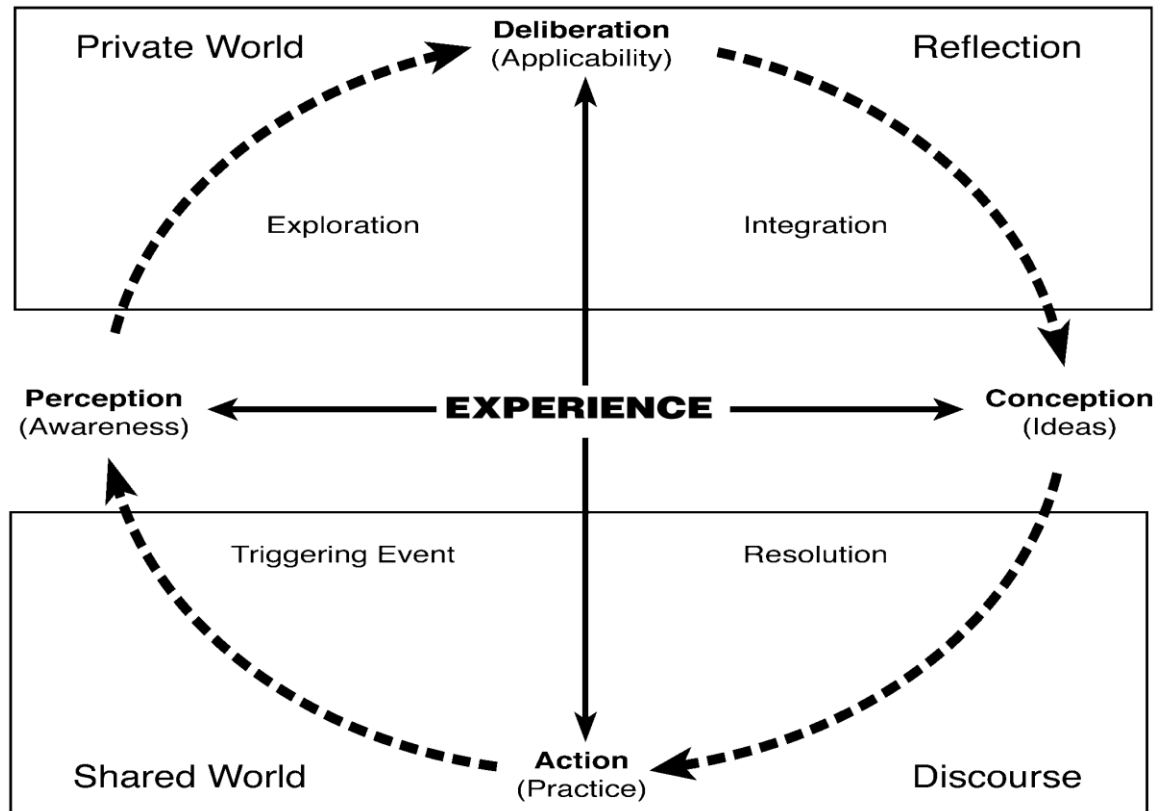


Figure 2: Practical Inquiry model

The PI model is comprised of four phases of critical inquiry which are idealized and, as such, are not sequential or immutable. The four phases are the triggering event, exploration, integration, and resolution. The first phase is the initiation or triggering event associated with conceptualizing a problem or issue. This should be a well-thought through activity that ensures students' engagement and generates curiosity and

questioning. The exploration phase includes understanding the nature of the problem and then searching for the relevant information and possible explanations. At this phase, students iterate between the reflective and shared worlds as ideas are explored collaboratively and individuals try to make sense of complexity and confusion. The third phase, integration, moves into a more focused and structured phase of constructing meaning where students are intimately engaged in critical discourse that will shape the understanding. Here participants begin resolving the dilemma or problem at hand by constructing a meaningful framework or discovering a contextually specific solution to a defined problem. The final phase is settling on a solution and vicariously or in reality testing the solution through implementation.

Although the PI model represents the inquiry *process*, it has been compared to other models such as Bloom's taxonomy in terms of its potential to measure learning outcomes (Buraphadeja & Dawson, 2008; Cotton & Yorke, 2006; Meyer, 2004; Schrire, 2004, 2006). Buraphadeja and Dawson indicate that the PI model has been widely cited as suitable for assessing critical thinking. Moreover, Schrire (2004) found that the PI model is "the most relevant to the analysis of the cognitive dimension and represents a clear picture of the knowledge-building processes occurring in online discussion" compared to Bloom's and SOLO taxonomies (p.491).

Cognitive presence is at the core of a community of inquiry and requires engaging students in all phases of practical inquiry. However, most early studies yielded low level activity on integration and resolution phases (e.g. Garrison, et al., 2001; McKlin, Harmon, Evans & Jone, 2002; Picciano, 2002; Meyer, 2003, 2004; Pawan, Paulus, Yalcin, & Chang, 2003; Vaughan & Garrison, 2005; Kanuka, Rourke & Laflamme, 2007;

Stein, Wanstreet, Glazer, Engle, Harris, Johnston, Simons & Trinko, 2007). Several possible explanations were made. In the review of the CoI framework by Garrison and Arbaugh (2007), it was argued that inquiry becomes more demanding as it moves to the resolution phase. The inability to move students to the latter phases of inquiry was explained as a function of teaching presence in terms of the design of the task, the need to provide crucial information, and moving the discussion forward in a timely manner. Not surprising, therefore, tasks designed to achieve resolution and directed toward that end are more likely to lead to integration and resolution phases (Stein et al., 2007). Perhaps taking into consideration these arguments, recent research have yielded greater activity at the integration and resolution phases (Richardson & Ice, 2010, Shea & Bidjerano, 2009b; Akyol & Garrison, 2008; 2011b). It should also be kept in mind that online discussions seldom provide sufficient time to reach resolution (Richardson & Ice, 2010) and major projects generally reach resolution off-line (Akyol & Garrison, 2008; Archer, 2010; Shea et al., 2010).

In order to create cognitive presence and higher-order learning outcomes consistent with intended goals and expectations of the educational experience, there is a need for a moderator (i.e., teaching presence) who can assess the nature of the discourse continuously and proactively shape it following the critical thinking cycle. Students should be encouraged to relate the ideas and concepts to societal contexts, which increases the likelihood to move the discourse to integration and resolution phases. Moreover, metacognitive understanding of critical thinking and practical inquiry greatly supports the development of cognitive presence. That is, when students understand the inquiry process and what is required at each phase, they can exhibit the skills to ensure

progression through the phases to resolution. Kuhn (1999) reinforces this point when she argues “the development of metacognitive understanding is essential to critical thinking because critical thinking by definition involves reflecting on what is known and how that knowledge is justified” (p. 23). Initial research into metacognition has provided evidence of its role in practical inquiry in an online context (Akyol & Garrison, 2011b). Work is currently focusing on validating a metacognitive instrument consistent with the PI model.

Teaching Presence

We now turn to teaching presence, the third element of the framework. As alluded to previously, teaching presence is crucial for realizing intended learning outcomes. It is the key element in integrating social and cognitive presence during the inquiry process. Simply stated, teaching presence is what the participants (usually the instructor) do to create a purposeful and productive community of inquiry. Teaching presence is formally 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). Main responsibilities of teaching presence are identifying relevant societal knowledge, designing experiences that facilitate reflection and discourse, and diagnosing and assessing learning outcomes. Results from this definition and validation work, the functions of teaching presence are organized into three categories: design and organization, facilitating discourse, and direct instruction. A set of indicators correspond to each of these categories.

Design and organization has to do with macro level structure and process. In an e-learning context, design and organization could be more demanding considering the technology related issues and the need to redesign the approaches to teaching and

learning to maximize the capabilities of the e-learning medium. In a collaborative constructivist e-learning process, students must have influence in what is studied and how it is approached. Therefore, design should not be separated from delivery. This is best accomplished when both design and organization allows for effective responsiveness to developing needs and events. The second category, facilitating reflection and discourse, recognizes the role of the community of inquiry as enabling and encouraging the construction of personal meaning as well as shaping and confirming mutual understanding. Facilitating discourse involves pedagogical, interpersonal and organizational issues. Teaching presence must be as concerned with cognitive development as with a positive learning environment, and it must see content, cognition and context as integral parts of the whole. The third category, direct instruction, is associated with specific content issues, such as diagnosing misconceptions. The need for direct instruction challenges the “guide on the side” concept. While a guide or facilitator is integral to teaching presence, in and of itself, it is limited as an educational approach to e-learning. It suggests an artificial separation of facilitator and content expert and causes the potential distortion of an educational experience due to the exclusion of the influence of a pedagogical and content expert. Teaching presence in an educational context is not possible without the expertise of an experienced and responsible teacher who can identify the ideas and concepts worthy of study, provide the conceptual order, organize learning activities, guide the discourse, offer additional sources of information, diagnose misconceptions and interject when required.

There is growing evidence supporting the crucial role and impact of teaching presence in an educational community of inquiry. Research has shown that teaching

presence is important for perceived learning and satisfaction (Akyol, Garrison & Ozden, 2009; Richardson & Swan, 2003; Swan & Shih, 2005), for the acquisition of knowledge (Paechter, Maier & Macher, 2010), for ensuring participation and quality of responses (An, Shin & Lim, 2009; Bliss & Lawrence, 2009; Gorsky, Caspi, Antonovsky, Blau & Mansur, 2010) and for the development of the community of inquiry (Brook & Oliver, 2007; Shea, Li & Pickett, 2006; Ice, Curtis, Philips & Wells, 2007). Teaching presence provides the structure (design) and leadership (facilitation and direction) required for effective interaction and discourse, which leads to higher-order learning. As stated earlier, metacognition is gaining increasing emphasis in relation to effectively managing and monitoring learning. In this regard, teaching presence must also help students recognize the developmental progression of the inquiry process. For example, activities should be designed and moderated so as to focus on the appropriate phase of critical thinking, ensure that learners progress to the next phase, and that the learners gain a metacognitive understanding of the process they are engaged in (Garrison, 2003).

To this point the Community of Inquiry theoretical framework has been introduced along with a detailed description of each element. The next section focuses on the application of the framework presenting the principles and guidelines in order to develop an effective community of inquiry.

Application of the CoI Theoretical Framework

To date, e-learning has been largely technology driven. Ubiquitous and inexpensive Internet and communications technology has influenced the display, the interaction, the cost and the design of educational transactions. Some of the new technologies, commonly labeled as Web 2.0 tools, are increasing the possibilities to

create fully engaged learning communities in the relativity of space and time. However, an educational technology is innovative only when it improves the effectiveness of an educational experience. Even though emerging instructional technologies have allowed educators to adopt online and blended learning, their motivations for adopting this technology are mixed and are not often based upon sound educational and pedagogical reasoning. The power and potential of the technology may be enormous but realizing this potential will depend on conceptual models and principles, and well founded guidelines and techniques.

The focus and challenge here is to understand pedagogically the use of online and blended learning to achieve higher-order learning objectives. This means going beyond enhancing course packages and using email to contact tutors, or putting videos of lectures online. The premise is that educators must first understand that online and blended learning both have unique properties that make it possible to create a critical community of learners not constrained by time or place. Second, we must be able to develop pedagogical principles and guidelines that will directly facilitate deep and meaningful approaches to teaching and learning. In other words, we must ensure that we encourage critical thinking online and have as the outcome of the educational experience critical thinkers who have learned to learn.

While there are numerous guidelines and suggestions as to how to conduct online learning (e.g., Salmon, 2000; Berge, 1995; Paulsen, 1995), these are generally disparate methods for ensuring participation. However, the use of online learning in pedagogically sound ways that make optimal use of its unique properties means using it for more than merely participating in an optional discussion forum or accessing information more

efficiently. As Fraser (1999) suggests, the extent to which we have not taken advantage of the “expanded horizons for communicating ideas ... is the extent to which you have done nothing of pedagogical value by using the Web” (p. B8). In Fraser’s (1999) words, doing anything with these new media that does not expand our horizons is “pedagogically pointless.”

The challenge facing researchers and teachers in distance education is the development of a more sophisticated understanding of the capabilities of new technologies and how we might harness this potential to enhance critical thinking and higher-order learning. As important as critical thinking is as an educational process and goal, we educators often fall far short of achieving it (Garrison, Anderson & Archer, 2001). Reasons include a lack of metacognitive understanding of the inquiry process and a lack of purposeful and sustained commitment to facilitating and directing critical discourse and reflective thinking. In this regard, there is an absence of systematic empirical research into how to facilitate critical thinking and inquiry (Kuhn, 1999). In terms of fostering critical thinking skills Kuhn states:

... teachers have been offered remarkably little in the way of concrete examples of what these skills are – what forms they take, how they will know when they see them, how they might be measured. (p. 17)

The CoI theoretical framework has been a viable theory in understanding the complexities of technology enhanced learning environments and to address the challenge mentioned above by its emphasis on critical thinking and the inquiry process. The CoI theoretical framework has a high adoption rate and has been quite influential in explaining and prescribing the effective conduct of online and blended learning

experiences (Garrison & Arbaugh, 2007; Arbaugh, Cleveland-Innes, Diaz et al. 2008; Swan, 2010). There is a growing body of evidence on the potential and success of the framework to create a learning environment where deep and meaningful approaches are employed to reach higher order learning outcomes (Vaughan & Garrison, 2005; Conrad, 2005; Garrison & Vaughan, 2008; Akyol & Garrison, 2008, 2009, 2011a; Shea & Bidjerano, 2009a; Stein et al., 2007; Jezegou 2010; Barber, 2011).

In a large scale study, it was reported that the epistemic engagement approach is more fully articulated and extended through the CoI theoretical framework (Shea & Bidjerano, 2009a). Students were able to engage in reflection and dialogue that provided further opportunities to extend their understanding. In a subsequent study, Shea and Bidjerano (2009b) found that a majority of the more than 5000 students surveyed reported that they were able to achieve high levels of cognitive presence in online and blended courses.

From another perspective, a series of studies have provided insights into blended learning regarding the development of a community of inquiry. The study of Akyol, Garrison and Ozden (2009), which compared online and blended communities of inquiry, yielded higher perceptions of all three presences, and an increased frequency of cognitive presence at the integration phase, in the blended course compared to the online course. In another study, students expressed that they preferred the face-to-face environment to initiate discussions and the online environment to expand and sustain discussions (Vaughan & Garrison, 2005). Having the strength of both media, blended learning would appear to better serve teaching and learning needs and provides an easy transition to distance education for educators (Garrison & Kanuka, 2004; Garrison & Vaughan, 2008;

Palloff & Pratt, 2007). That said, more research is needed to further explore the dynamics of a blended learning approach.

While each element is essential, teaching presence is the unifying force in developing a community of inquiry. There is always a need for an instructor to structure, shape and assess the learning experience, whether it is online, blended or face-to-face learning. Moreover, the literature suggests that a stronger teaching presence is required, especially in online learning (Garrison & Cleveland-Innes, 2005; Meyer, 2003; Shea et al., 2006; Swan & Shih, 2005). Unfortunately, the simple adoption of technology does not resolve issues related to the teaching of critical thinking and inherent metacognitive understanding. Moreover, it does not fundamentally change approaches to teaching and learning for the better. It has been argued elsewhere that technology can have both a strong and weak influence on the educational transaction (Garrison & Anderson, 2000). The weak approach is to enhance and, thereby, reinforce existing teaching practices. On the other hand, the

stronger influence of technology on teaching would fundamentally change our outcome expectations, and thereby, how we approach the teaching and learning transaction. ... Here the focus is on the quality of learning outcomes (i.e., developing critical thinkers) and adopting approaches to teaching and learning that are congruent with such outcomes. (Garrison & Anderson, 2000, p. 25)

Here, the guidelines are approached from the perspective of teaching presence and its three sub-elements or categories: design and organization, facilitating of discourse and direct instruction. The first challenge to develop an effective community of inquiry is to develop a comprehensive understanding of the properties of online and blended learning,

and the implications for supporting an educational community of inquiry using these media. To help identify the process, Garrison (2011) presents seven principles that reflect the pedagogical approach for creating and sustaining a community of inquiry:

- Plan for the creation of open communication and trust
- Plan for the critical reflection and discourse
- Establish community and cohesion
- Establish purposeful inquiry dynamics
- Sustain respect and responsibility
- Sustain inquiry that moves to resolution
- Ensure assessment is congruent with intended processes and outcomes.

The second challenge is that the transition to an e-learning context requires a significant adjustment for both instructors and students. It can be even more challenging for first time online students who need to adjust to both communicating online and participating in a community of inquiry. Some general design considerations to ease the adjustment are to make explicit adjustment challenges, provide technological support, and ensure greater instructor involvement at the beginning (Cleveland-Innes, Garrison & Kinsell, 2007). Other specific guidelines and suggestions for practice associated with design and organization include establishing curriculum, indentifying resources, defining clear expectations and goals, addressing technological concerns, structuring collaborative and individual activities, setting the time frames and devising assessment processes and instruments. At this stage, the activities to develop social presence should focus on creating trust and respect that will not discourage skepticism and constructive criticism. Instructors' modeling is crucial to depict the appropriate communication. Specific

activities to establish social presence could be to send introductory email to students, develop students web pages with their bios, discuss and negotiate expectations in small groups, create an informal coffee discussion board and make explicit the netiquette and code of conduct. From a cognitive presence perspective, two issues stand out: content and assessment. The PI model (i.e., cognitive presence) could be utilized both to design learning and assessment activities that are congruent with content and to ensure the discourse move to integration and resolution phases. It should be made clear that greater cognitive presence is expected as the course progresses. Students should be encouraged to consider their cognitive level during the discussions and assignments. Some of the specific activities suggested are designing question driven or problem based learning activities, using small breakout groups, and creating a web platform to collaboratively search, analyze and synthesize information.

Facilitating discourse is a key responsibility in creating and managing educationally worthwhile discourse. The activities for facilitation include both social and cognitive presence issues as personal communication and critical discourse are not separable. The focus here is managing the process and monitoring the depth of understanding. Through open communication, instructors can reveal thought processes, provide appropriate insights and information when needed, seek common understanding and encourage students to participate actively. In order to move the discourse to the latter phases of inquiry, instructors again should be aware of the PI model to use as a guide in progressing through the phases. Students should also be given an opportunity to moderate the discussions which can shift the authoritative influence of an instructor and encourage freer discussion.

Direct instruction is the responsibility of the instructor to provide intellectual and pedagogic leadership. Students need feedback and direction throughout the process but they also must feel comfortable respectfully challenging instruction. Enabling this requires particular care. Some suggestions for social presence are to shape the discussion without dominating, to provide feedback with respect, to be open to negotiation and providing reasons, and to deal with conflict quickly and privately. Cognitive presence issues associated with direct instruction should be approached with the intent of taking the students to higher levels of cognitive development. Some suggested instructional behaviors are to offer alternative ideas and perspectives for analysis and discussion, respond directly to and elaborate on inquiries for all to absorb, and acknowledge uncertainty where it exist.

Finally, it should be kept in mind that in a collaborative constructivist approach, design must be inherently flexible and adaptable to unpredictable and individual learning needs as they arise. Design and redesign continues throughout the educational experience enabling students' input through shared teaching presence. The guidelines and practical suggestions are discussed here briefly and described more extensively elsewhere (Garrison, 2011; Garrison & Vaughan, 2008). More research is needed regarding the application of the CoI theoretical framework to different contexts. As suggested by Akyol and Garrison (2008), the development and progression of the CoI elements may vary according to the context. Some of the roles and responsibilities mentioned above may not be needed to the same degree, or additional roles and responsibilities may be required as a result of the particular context.

Conclusion

During the past decade of e-learning, there was an extensive focus on technology which hindered educators and researchers from giving enough consideration to the pedagogical practices. However, without adequate pedagogical transformation, these technological innovations have created more uncertainty and dissonance. We are now in a post-industrial era of distance education in which contextual and structural constraints are greatly diminished (Garrison, 2009a). The emerging internet and communications technologies have made communities of inquiry possible allowing students to interact where and when they choose and collaboratively engage in a purposeful and cohesive group environment (Garrison & Cleveland-Innes, 2011). As a result, there is a growing awareness and responsibility in terms of applying technology with greater understanding and purpose.

The community of inquiry theoretical framework introduced and discussed here has important theoretical and practical implications for online and blended learning – and distance education in general. Over a decade of research has confirmed that the CoI theoretical framework has enormous potential to design, guide and assess e-learning approaches, strategies and techniques – notwithstanding that much work remains to validate the dimensionality of the elements and the dynamics of the CoI theoretical framework. As a comprehensive guideline, the framework has been a successful catalyst to understand the complexities of online and blended learning. The paramount implication is that the CoI framework has guided the extensive study of how we can use online learning to support and facilitate critical thinking and higher-order learning outcomes. For example, most recently the Community of Inquiry theoretical framework

has been used to provide a model of metacognitive awareness and regulation of discourse and reflection online (Akyol & Garrison, 2011b). Without such awareness there is a serious question as to whether researchers will have the means to systematically study the complexities of communities of inquiry and whether students will have the cognitive map within which to learn how to learn and become self-directed, cognitively autonomous learners.

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Key words:

1. Community of inquiry
2. Social presence
3. Cognitive presence
4. Teaching presence
5. Critical thinking
6. Collaboration
7. Metacognition
8. Discourse
9. Interpersonal communication
10. Open communication
11. Group Cohesion
12. Triggering event
13. Exploration
14. Integration
15. Resolution
16. Design and Organization
17. Facilitating discourse
18. Direct instruction
19. Deep learning
20. Meaningful learning
21. Online learning
22. Blended learning

23. Practical inquiry

Key Authors

1. Zehra Akyol
2. Ben J. Arbaugh
3. John Dewey
4. D. Randy Garrison
5. Phil Ice
6. Matthew Lipman
7. Jennifer Richarson
8. Peter Shea
9. Karen Swan
10. Norm Vaughan