

SETTING THE CLIMATE IN AN AUTHENTIC ONLINE COMMUNITY OF LEARNING

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Abstract

The growth of online learning and the demand for quality education has prompted universities to investigate innovative approaches for providing students with a more interactive, engaging and authentic learning experience. Frameworks such as Garrison, Anderson and Archer's (2001) community of inquiry (CoI) model have been widely used in the design of learning tasks and communities of learning to address this challenge. In this paper, the key elements of the CoI model are explained—the cognitive, social and teaching aspects—together with a brief look at the intersecting areas of these elements. Of particular interest in this paper was the intersection of social and teaching presence, because of its capacity to contribute to setting climate in an online learning environment. A systematic analysis of recent studies focusing on key elements of the CoI model is reported, and characteristics for setting the climate in an online environment to assist the development of a community of inquiry are identified, together with guidelines to assist with the implementation. Finally, an authentic online professional development course for higher education professionals is described to illustrate the guidelines in practice.

Keywords: Community of Inquiry model, authentic learning, social presence, teaching presence

Introduction

Changing financial, social and political conditions have increased the demand for more online courses in higher education (Norton & Cherastidham, 2014). As a result of public funding cuts, greater accountability and the impact of technology and globalisation universities around the globe are searching for innovative ways to improve the quality of online learning (Emes & Cleveland-Innes, 2003; OECD, 2015; Rovai & Downey, 2010). More than delivering and testing of information, quality online learning comprises “a complex mix of physical and social technologies, applications, activities, and presentations designed to teach, combined with a suite of services that helps support the entire online learning experience” (Parker, Boase-Jelinek, & Herrington, 2011, p. 1599).

Pedagogical models exist that provide a rationale and framework for the design, development and implementation of quality online learning. For example, Garrison and colleagues have for over a decade explored a community of inquiry model to explain and support quality in learning environments across a range of contexts. Garrison, Cleveland-Innes and Fung (2010) believe the community of inquiry model provides a holistic framework for guiding “the integration of pedagogical ideals and new communication technologies that will advance the evolution of higher education as opposed to reinforcing existing practices” (p. 31). Similarly, Herrington, Reeves and Oliver (2010) propose authentic learning tasks—that require students to use technology as cognitive tools to seek information, construct knowledge, communicate, and collaborate effectively—have the potential to improve student engagement and outcomes.

While many distance courses have embraced communications tools and social media, these shifts in technology have not necessarily been accompanied by pedagogical changes that capitalise on these advances, and lack of student engagement continues to plague such courses (Bonk, 2004; Selwyn, 2011). Distance learners often miss out on the opportunity to connect, communicate and create communities of learning with their fellow learners. An increasing number of educators (Hodges & Repman, 2011; Kim & Reeves, 2007; Levin-Goldberg, 2012; Parker, Maor, & Herrington, 2013; Stewart, Bachman, & Babb, 2009) believe the affordances of new web technologies such as

“connectivity, content creation, and knowledge and information aggregation” (Lee & McLoughlin, 2010, p. 74) have the capacity to transform the teacher-learner relationship. However, many find creating and sustaining online communities of learning very challenging (Anderson, 2008).

A review of the literature and discussions with practitioners (cf. Parker, 2011) revealed some university educators would like to make their courses more interactive and engaging but feel they are not necessarily encouraged to do so by their institutions, and they lack the knowledge, skills, and time to successfully redevelop their own learning environments. Maor (1999) suggests educators need to experience new pedagogical approaches as learners in order to implement changes to their teaching practices. However, many university professional development courses tend to focus on ‘teaching’ how to use various technologies, rather than pedagogical strategies for using technology to support student learning (Awouters & Jans, 2009).

In this paper, we report on a design-based research study exploring the impact of an authentic learning framework for designing and implementing a professional development course for university teachers. The pedagogical framework used to guide the design and implementation of the course was based on *authentic learning* principles (Herrington, Reeves, & Oliver, 2010), *community of inquiry* (CoI) elements (Garrison et al., 2001), and *technologies as cognitive tools* (Jonassen, 1994; Jonassen & Reeves, 2001), together with access to a range of open educational resources (Parker et al., 2013). In particular, this paper focuses on the social and teaching elements of Garrison, Anderson and Archer’s (2001) community of inquiry (CoI) model and the identification of characteristics for setting the learning climate to support deeper and more meaningful co-construction of knowledge.

The paper is divided into three parts. The first part explains the key elements of the community of inquiry model and reports on our systematic search for recent studies on the various elements. The second part examines the analysis of the literature to determine characteristics for setting climate in a range of different learning contexts, identifies characteristics appropriate for an online community of inquiry learning approach, and proposes guidelines for implementing each of the characteristics. Finally, the paper briefly describes how the characteristics for setting climate were instantiated in an online professional development course for higher education practitioners.

Community of inquiry (CoI) model

The CoI model was originally developed by Garrison, Anderson and Archer during a study conducted from 1997 to 2001. Their seminal paper describing the model, entitled *Critical inquiry in a text-based environment: Computer conferencing in higher education* was published in 2000 and has been cited over 2,800 times (Google Scholar, July, 2015). Over the past decade Garrison, his colleagues, and many other researchers have conducted empirical studies to verify the usefulness of the model for creating meaningful communities of learning to enhance online communication and collaboration. The model has evolved over the years (the latest version is available on the CoI website) but at its core remains the intersection of three key elements: *social presence*, *cognitive presence*, and *teaching presence* (Garrison, Cleveland-Innes, & Vaughan, n.d.).

In the context of this model, *social presence* is defined as “the ability of participants to identify with the community, communicate purposefully in a trusting environment, and develop inter-personal relationships” (Garrison & Akyol, 2009, p. 24). Social presence can be classified into three broad categories: emotional expression, open communication and group cohesion (Garrison, Anderson, & Archer, 2000) and all elements play an important role in creating a community of learning (Garrison, 1997). Sharing personal characteristics assists the development of interpersonal relationships that can support cognitive presence by indirectly contributing to the process of critical thinking or support affective goals to maintain student motivation and engagement (Garrison et al., 2000).

Cognitive presence is the construction of meaning through sustained communication and reflection (Garrison et al., 2000). This element is a major indicator of successful online learning and includes

four phases: definition of a problem or task, exploration of relevant information, making sense of and integrating ideas and finally testing plausible solutions, which occur within “an environment of reflection and discourse, analysis and synthesis” (Garrison et al., 2010, p. 32).

Teaching presence encompasses learning design and course facilitation to support the achievement of learning objectives. Teaching presence includes: curriculum content, learning activities and timelines, managing purposeful collaboration and reflection and assisting the community to achieve the intended outcomes (Garrison et al., 2010).

A systematic review of the literature identified numerous research papers relating to the CoI model, in particular, papers exploring the key elements of social, cognitive, and teaching presence. However, very few articles were found on the three intersecting elements of supporting discourse, setting climate and selecting content in the context of this model. The number of articles found on each of the components of the community of inquiry model is shown below in Figure 1.

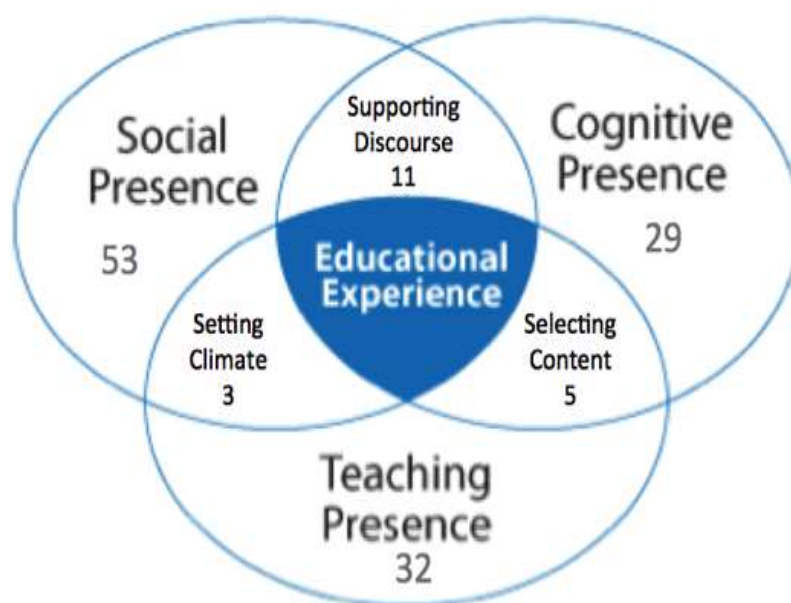


Figure 1 Number of research papers relating to Community of Inquiry components (Garrison, Anderson, & Archer, 2000)

Theoretically, the model indicates that the three presences are interconnected and influence each other. This suggests that the intersecting areas are comprised of elements from the overlapping presences (Garrison et al., 2010). For example, elements of *social presence* and *teaching presence* contribute to *setting the climate* for the learning environment. Components of *social presence* and *cognitive presence* contribute to *supporting discourse*. Features of *cognitive presence* and *teaching presence* assist with *selecting content* (Garrison et al., 2000; Garrison & Arbaugh, 2007).

The very low number of papers found relating to setting climate and selecting content suggested that little research has been undertaken on these intersecting components. Garrison advised that a theoretical analysis of the three intersecting elements had not yet been explored explicitly in the context of the CoI model. However, he and his colleagues had begun to explore the intersection of *regulating learning*—formerly called *selecting content* (2013, April, personal communication). According to Garrison (2014, November, personal communication) the updated version of the CoI model displayed on the COI website (shown in Figure 2), was derived from recent research about shared metacognition, that is, self and co-regulation (cf. Garrison & Akyol, 2013, 2015).

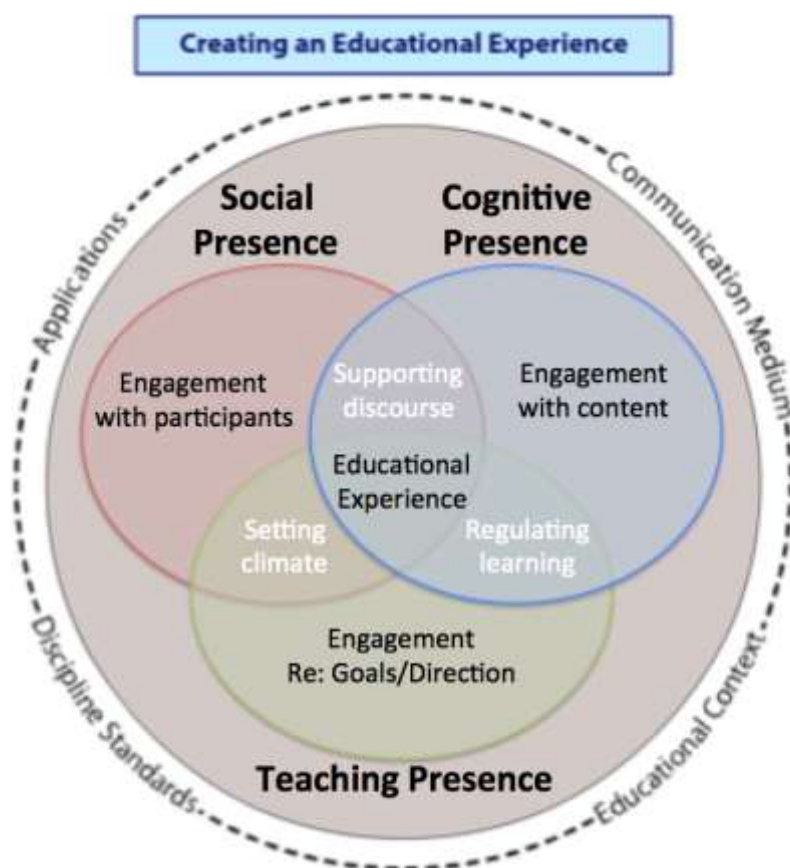


Figure 2 Community of inquiry model (Garrison et al., n.d.)

With regards to *setting climate*, only three papers were found that specifically addressed this element: *Getting it right the first session [and] setting the climate for successful teaching and learning* (Garrison, 1992), *Using asynchronous audio feedback to enhance teaching presence and students' sense of community* (Ice, Curtis, & Phillips, 2007), and *Setting the climate: The role of instructional design and multimedia to enhance social presence* (Kharana & Boling, 2012). Hence the aim of this paper is to explore this important and somewhat neglected component and to partially address this gap in the literature.

Identifying characteristics for setting climate and articulating guidelines for their implementation may assist other educators to understand how these characteristics might be applied in their own online courses. The characteristics and guidelines are described in the following section.

Researching social and teaching presence: setting climate

According to Garrison et al.'s model (Garrison et al., 2001) setting climate is the overlap of social presence and teaching presence. The characteristics of setting climate would thus include some elements of both social and teaching presence.

While a great deal of literature has been published on the CoI model generally since its first publication, for this paper, an in-depth review was conducted to find those published, peer reviewed papers that related specifically to the setting climate intersection in a range of educational contexts. An analysis of these papers and their findings could then be used to identify critical characteristics of setting climate for an online community of inquiry.

The methodology utilised unobtrusive research methods (Lee, 2000) or more specifically, it comprised a systematic quantitative literature review (Pickering & Byrne, 2013) as described in more detail below:

1. Defining the scope of the search

The topic for investigation was determined as identified above, with particular emphasis on setting climate, the intersection of social and teaching presences. Keywords were identified as initial search parameters to be used consistently in different search engines. Initially these key words were: *setting climate, teaching presence, social presence, Garrison (et al.), and Community of Inquiry model*, and then more generic terms were selected such as, *building rapport, effective teaching strategies, effective teachers, effective online learning, online learning design, and effective online environments*.

2. Identifying and searching databases and other sources

Prior to database searching, a broad search was undertaken using the CoI website, where an extensive list of known papers are grouped by element. The intersections are not specifically covered on the site, so the search was more general in nature, and focused on looking in more depth at those papers listed in the social and teaching presence categories. Using the identified keywords, the following databases were next searched: Google Scholar, and the Murdoch University FindIt search (incorporating key education databases such as ERIC, ProQuest, A+Education, Web of Science and EdItLib). Finally, since many of the primary CoI authors are affiliated with Athabasca University, the publications on the AU Space repository were searched by author.

3. Assessing papers for inclusion

Papers were read and assessed, and either tentatively included or rejected, on their relevance. The reference lists of papers were also checked to determine if key papers were missing in the initial selections. Initially, only published refereed journals were included in the scope of the search, but refereed conference papers were subsequently also accepted because of the specific nature of the search area (perhaps specific topics are more commonly presented at conferences), and the fact that the area is one of much ongoing activity and research (there is more recency in conference papers). At the conclusion of this step, 24 papers were selected and recorded in EndNote for analysis.

4. Analysis of selected papers and development of characteristics

Using a table in a word processing document, categories and then subcategories were developed, with papers assigned accordingly. Revisions and refinements of categories occurred as the analysis proceeded. A summary table was then created to present emerging categories and characteristics of setting climate, as described in the analysis below.

Analysis of characteristics of setting climate

An analysis of the selected literature identified four broad categories for setting climate: (1) physical environment, (2) building rapport, (3) emotional expression, and (4) instructional management. A summary of the characteristics identified for each category, together with the relevant authors, is shown below in Table 1.

Table 1 – Setting climate: categories, characteristics, and authors

Category	Characteristics	Authors
Physical environment	Clarity of design	(Bentz, 2009; Swan, 2002b)
	Organization	(de la Varre, Keane, & Irvin, 2011; Swan, 2002b)
	Pace, interactivity	(de la Varre et al., 2011)
	Usability & satisfaction	(Chapman, 2010; Fontainha & Gannon-Leory, 2008; Kharana & Boling, 2012)

<i>Category</i>	<i>Characteristics</i>	<i>Authors</i>
Build rapport	Trust	(Buskist & DSaville, 2001; Fontainha & Gannon-Leory, 2008; Granitz, Koernig, & Harich, 2009; Hall & Herrington, 2010; Kharana & Boling, 2012; Swan, 2002a)
	Tone of communications (e.g. friendly and empathetic)	(Fontainha & Gannon-Leory, 2008; Lowenthal, 2009; E. Murphy & Rodriguez, 2012; K. L. Murphy, Smith, & Stacey, 2002)
	Interactions (e.g. private, public, audio, text, video)	(Ice, Curtis, & Phillips, 2007; Kharana & Boling, 2012; Lowenthal, 2009; K. L. Murphy et al., 2002; Swan, 2002a, 2002b)
	Immediacy (e.g., decreasing psychological distance)	(Bentz, 2009; Bozkaya & Aydin, 2008; Granitz et al., 2009; Hall & Herrington, 2010; Lowenthal, 2009; E. Murphy & Rodriguez, 2012; Swan, 2002a)
	Intimacy/humanness (e.g. connectedness) eye contact, smiling,	(Bentz, 2009; Bozkaya & Aydin, 2008; Granitz et al., 2009; Kharana & Boling, 2012; Lowenthal, 2009; Swan, 2002a)
	Personal greeting (e.g. facilitator welcome)	(Brinthaupt, Fisher, Gardner, Raffo, & Woodard, 2011; Bull, Montgomery, & Baloch, 1995; Buskist & DSaville, 2001; Cox-Davenport, 2010)
	Self-disclosure (e.g. social, leisure activities etc.)	(Brinthaupt et al., 2011; Buskist & DSaville, 2001; Granitz et al., 2009; Hall & Herrington, 2010; Kharana & Boling, 2012; Lowenthal, 2009; E. Murphy & Rodriguez, 2012; Swan, 2002a)
	Expression of personality, humour	(Brinthaupt et al., 2011; Cox-Davenport, 2010; Granitz et al., 2009; Lowenthal, 2009; E. Murphy & Rodriguez, 2012; Swan, 2002a)
	Accessibility (e.g. be available)	(Granitz et al., 2009; E. Murphy & Rodriguez, 2012; Sheridan & Kelly, 2010)
	Responsiveness	(Granitz et al., 2009; E. Murphy & Rodriguez, 2012)
	Active engagement (e.g. be involved)	(Granitz et al., 2009; K. L. Murphy et al., 2002; Penick & Bonnsetter, 1993; Sheridan & Kelly, 2010)
	Non-academic conversations (social)	(Lowenthal, 2009; E. Murphy & Rodriguez, 2012; Swan, 2002a)
Emotional expression	Encouraging, acknowledging, reinforcing	(Granitz et al., 2009; K. L. Murphy et al., 2002; Sheridan & Kelly, 2010)
	Identification with the group (e.g. Sharing stories, shared understanding)	(Fontainha & Gannon-Leory, 2008; Kharana & Boling, 2012; E. Murphy & Rodriguez, 2012)
	Monitoring progress (e.g. showing interest in student success)	(Bozkaya & Aydin, 2008; Granitz et al., 2009; E. Murphy & Rodriguez, 2012; K. L. Murphy et al., 2002)
	Respect (e.g., address by name)	(Bozkaya & Aydin, 2008; Lowenthal, 2009; E. Murphy & Rodriguez, 2012; Swan, 2002a)
	Praise	(Bozkaya & Aydin, 2008; E. Murphy & Rodriguez, 2012)
Instructional management	Relevance (e.g., what & why they are studying)	(Brinthaupt et al., 2011; Fontainha & Gannon-Leory, 2008; Garrison, 1992; K. L. Murphy et al., 2002; Tung, 2007)
	Accountability (e.g. setting goals, student roles & responsibilities, netiquette)	(de la Varre et al., 2011; Fontainha & Gannon-Leory, 2008; Maor, 2008; Winograd & Smith, 1987)
	Timely feedback (e.g. performance, activities & assignments)	(Brinthaupt et al., 2011; Fontainha & Gannon-Leory, 2008; E. Murphy & Rodriguez, 2012; Swan, 2002b)
	Flexibility (e.g. deadlines & due dates)	(Brinthaupt et al., 2011)

Note: Papers for authors listed above are included in the reference list

In order to translate the characteristics into more user-friendly design principles for educators wishing to use the elements to guide the design of their learning environments, the following guidelines for setting climate in an online community of learning were developed:

1. Create a user friendly learning environment (physical environment)

- Develop an easy to follow navigation menu
- Employ an uncluttered design style
- Organise flow of information and materials in a logical manner

2. Build a positive rapport (social presence)

- Decrease psychological distance (isolation): Use open friendly communication (verbal & non-verbal)
- Encourage connectedness: Be an active participant, and offer opportunities for interaction (student/facilitator & student/student)
- Express your personality: Self-disclose some personal information (e.g., hobbies, favourite travel destinations)
- Be approachable: Articulate your availability, advise how students can contact you and respond promptly
- Develop mutual trust: Show respect, courtesy, and patience

3. Engender a sense of belonging (emotional expression)

- Address students by name
- Encourage students to participate
- Recognise and praise progress and achievement

4. Promote a sense of purpose (instructional management)

- Articulate goals
- Monitor performance
- Give helpful advice
- Provide constructive feedback

We envisage these characteristics and guidelines may assist online educators to develop physical, social, emotional and instructional supports to set a positive climate of open communication and friendly interaction to encourage student engagement in an online community of learning.

In the following section, we describe how these characteristics were instantiated by the first author in an online professional development course for higher education practitioners.

Implementation of characteristics for setting climate

The intention of the course was to immerse educators in the pedagogical framework they were learning about to help them become more comfortable using authentic learning principles and technologies as social and cognitive tools, so that they could then develop more interactive and engaging online learning experiences for their students (cf. Parker et al., 2013).

Many participants had already designed and delivered online courses. However, for some, this was their first exposure to online learning and most participants had never experienced online learning from a student's perspective. Even if a teacher is an expert in a content area, a range of pedagogical strategies is required to ensure students learn in web-based environments (Henry & Meadows, 2008). The CoI framework was used as the theoretical lens to guide the development of social, cognitive and teaching strategies for the online professional development course to support student learning. How

each element of the setting climate intersection was instantiated in the learning environment is described in more detail below.

Create a user-friendly learning environment

The primary interface for the learning environment was a Moodle learning management system (LMS). This area provided instructions for getting started in the course, links to readings, support materials and resources and specific instructions for completing each task. The LMS consisted of three columns: navigation within the LMS on the left, the content in the middle and useful information and quick links to external resources on the right. A snapshot of the course interface is shown in Figure 3 below.

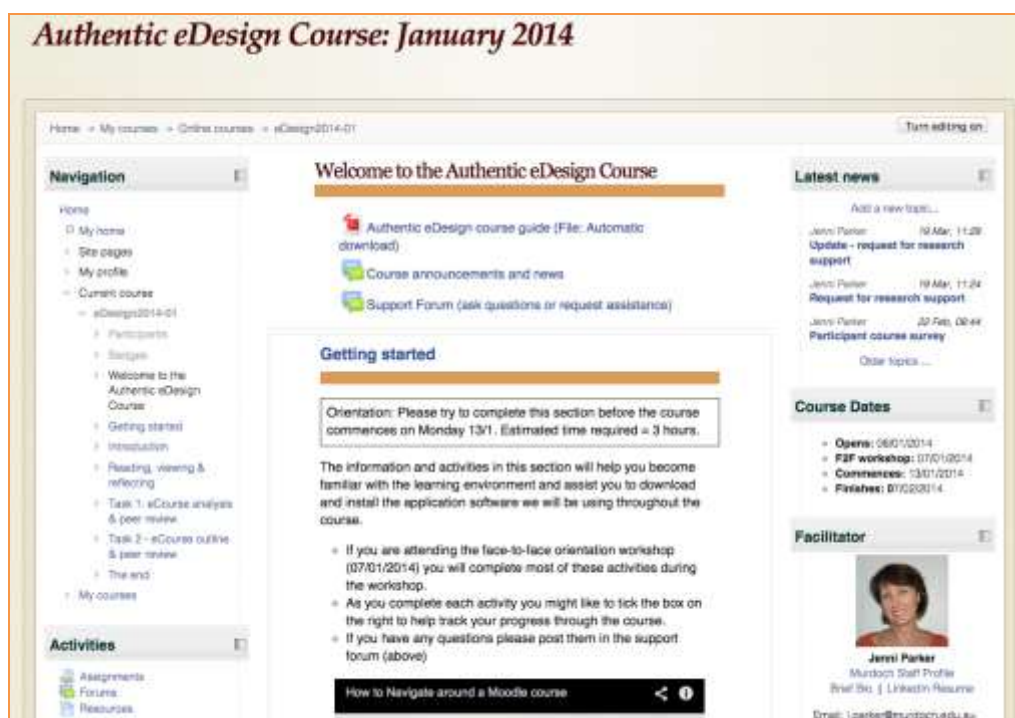


Figure 3 Authentic eDesign course: Moodle interface

Build a positive rapport and engender a sense of belonging

Rapport is defined as harmonious interactions between people that results in good communication and a mutual understanding of each other's feelings or ideas (Murphy & Rodriguez, 2012; Oxford Dictionaries, 2014). Murphy and Rodriguez (2008) state the absence of "body language and visual presence as mediators requires e-teachers to find new ways of interacting and building rapport" (p. 1061). They suggest teachers can easily build rapport in "the spontaneous, informal, daily interactions in the physical classroom" (2012, p. 167) but argue that for online environments it involves more work and must be consciously premeditated (2008).

Building rapport in an online environment is important as it can help students feel more socially connected and trusting of their fellow learners, and encourages open communication, which can lead to more meaningful learning and better achievement of outcomes (Maor, 2008). Granitz, Koernig and Harich (2009, p. 52) believe "one of the key traits of master teachers is the ability to foster student rapport". Methods used to build rapport included: a personalized welcome email, an introduction forum, a variety of communication tools, and a number of social spaces.

A choice of communication tools and social spaces enabled learners to communicate and collaborate in different ways. For example: email (private interaction), discussion forums (group interaction in protected LMS environment), Skype group chat (real-time communication, individual or group

interaction in a protected environment), blog comments (public interaction), a Diigo social bookmarking group (public sharing of resources and commenting) and a shared Google Drive folder (public or private online file sharing and collaboration). Participants were encouraged to respond to each other's questions wherever possible to capitalise on negotiated responsibility of both teachers and students to construct and share knowledge (Nandi, Hamilton, & Harland, 2012).

Promote a sense of purpose

A clear explanation of the relevance of the course (Garrison, 1992) and how it relates to meaningful real life activities (Herrington, Parker, & Boase-Jelinek, 2014) can help promote a sense of purpose. Course goals were articulated in the course outline, which was emailed to all participants before the commencement of the course. The introduction section on the LMS included information about the course aims and objectives. The tasks participants were required to complete were authentic activities that enabled them to create polished products that they could use in their workplace. Participants were also asked to review each other's work using rubrics and to provide constructive feedback to their peers.

Conclusion

Setting the climate is a combination of teaching and social presence that Hall and Herrington advise "should be developed first, as a catalyst to enable the development of the community" (2010, p. 1014). In this paper, we have presented an analysis that shows that setting the climate is not a static task—it is a dynamic process that must be nurtured and maintained throughout the course, growing "naturally and progressively through the purposeful and collaborative inquiry process" (Garrison, 2011, p. 34). While many educators are aware of the need for students to introduce themselves and engage in conversation early in an online course, in his book, *E-learning in the 21st century*, Garrison distinguished between personal and group identity:

Setting climate may be more about a feeling of belonging to the group and less about affectively connecting with others on a personal basis. The question is whether there should be so much focus on the interpersonal (personal identity) at the beginning of the course (Garrison, 2011, pp. 33-34).

In this paper, we have proposed that characteristics and descriptions derived from the research literature on Garrison et al.'s community of inquiry model, can help educators set the climate of an online learning experience in a much more meaningful way than simply by encouraging students to connect on a personal basis in the early weeks of the course. The characteristics described here can provide guidance that goes beyond affective communication elements, and that instead attends to four key elements: (1) designing a friendly learning environment, (2) building rapport, (3) engendering a sense of belonging, and (4) developing a sense of purpose to assist student learning. Consideration of all elements draws on the synthesized research of many scholars in the field, to provide sound guidelines for the design of quality online learning experiences.

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