

The Changing Nature of Online Communities of Inquiry: An Analysis of How Discourse  
and Time Shapes Students' Perceptions of Presence

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## Introduction

The Community of Inquiry (CoI) framework was developed as a theoretical framework to support the practice and research of online learning. Garrison, Anderson, and Archer (2000) theorized that meaningful learning online takes place in a CoI made of teachers and students, through the interaction of three core elements: teaching presence, social presence, and cognitive presence. Over the past 10 years, a great deal has been written on each of these three presences (Anderson, Rourke, Garrison, & Archer, 2001; Dunlap & Lowenthal, 2009; Garrison & Cleveland-Innes, 2005; Lowenthal & Parscal, 2008; Richardson & Swan, 2003;; Shea & Bidjerano, 2009; Shea, Li, Swan, & Pickett, 2003; Shea, Pickett, & Pelz, 2003; Swan, 2002, 2004; Swan & Shih, 2005). During the past few years, researchers have turned from just studying each element separately to studying the three elements simultaneously (Akyol & Garrison, 2008; Arbaugh, 2007, 2008; Arbaugh, Bangert, & Cleveland-Innes, 2009; Garrison, Cleveland-Innes, & Fung, 2004; Swan, Richardson, Ice, Garrison, Cleveland-Innes, & Arbaugh, 2008). However, despite the increased interest in studying the CoI framework, researchers have not investigated how communities of inquiry differ across different discourse communities (Arbaugh, Bangert, & Cleveland-Innes, 2009; Lowenthal & Lowenthal, 2009) nor whether they manifest themselves in accelerated online programs (Lowenthal & Lowenthal, 2009).

The purpose of this study was to investigate how student's perceptions of each of the elements of the CoI framework differ across different discourse communities (specifically, business, education, computer science, and humanities) in accelerated (i.e., eight week long) online courses. The following paper reports the preliminary results of this study.

## Background

Garrison et al. (2000; Garrison & Anderson, 2003) have argued that meaningful learning takes place in a CoI made of teachers and students, through the interaction of three core elements: social presence, teaching presence, and cognitive presence. Social presence, the first element of the model, is the "ability of participants in a Community of Inquiry to project their personal characteristics into the community, thereby presenting themselves to other participants as "real people" (p. 89). Social presence has been conceptualized as having three components: affective expression, open communication, and group cohesion (Rourke, Anderson, Garrison, & Archer, 1999). Research on social presence has a long history dating back to the 1970's (Lowenthal, 2009).

Teaching presence, the second element in the model, is the ability of a teacher or teachers to establish and support social presence and eventually cognitive presence through instructional design and organization, the facilitation of discourse, and direct instruction (Anderson et al., 2001). While the research of Shea (2006) has questioned the direct instruction component of teaching presence, subsequent research by Arbaugh and Hwang (2006) and others (see Arbaugh et al., 2009) continues to support the inclusion of direct instruction as an important component of teaching presence.

Cognitive presence, the third element in the model, is “the extent to which the participants in . . . a community of inquiry are able to construct meaning through sustained communication” (Garrison et al., 2000, p. 89). Garrison, Anderson, and Archer (2001) conceptualized cognitive presence as developing through four cyclical stages—first a triggering event, then exploration, integration, and resolution—which they refer to as the practical inquiry model.

As previously mentioned, a great deal of research has been conducted on each these core elements individually. However, recently researchers and practitioners have begun using the *entire* CoI framework as a guide to the practice and research of online learning. Researchers have used the CoI to evaluate online discussions. For instance, Bartruff and Headley (2009) used the CoI to evaluate online discussions in teacher education courses at a small Christian college. They found that the CoI framework served as a “simple yet effective framework to describe the communication” (p. 800). Other researchers have combined the CoI framework with the Quality Matters framework to enhance curriculum development and program rigor (Bogle, Cook, Day, & Swan, 2009). The CoI framework has also been used to get a better idea of what is missing in online learning courses (Stodel, Thompson, & MacDonald, 2006) as well as to get a better idea of what exemplar online teachers do (Perry & Edwards, 2005). Others like Arbaugh (2008) have found strong empirical support for the CoI to predict perceived learning and satisfaction. Finally, Cleveland-Innes, Garrison, and Kinsel (2009) used the CoI to help better understand the challenges that first-time online learners experience.

### Gaps in the Literature

Despite the growing popularity and increased use of the CoI framework, a number of gaps in the literature remain. We will outline a few of these gaps in the following paragraphs.

#### Discipline and Discourse Differences

Researchers of online learning have not adequately investigated the differences that might exist across academic disciplines (Arbaugh, 2005; Lowenthal & Lowenthal, 2009; Smith, 2005; Smith, Heindel, Torres-Ayala, 2008; White & Liccardi, 2006). This could likely be due to the fact that too many studies on online learning tend to focus on a single course. While Anderson et al. (2001), early on, pointed out that differences might exist across disciplines due to “discipline related conceptions of the education process” (p. 13), we posit that the issue is much more pervasive. That is, we contend that differences exist because faculty and students belong to different communities of practice or what we call discourse communities.

Communities are constructed and maintained in part upon the language its members use (Street, 1984). Participation in a given community requires knowing the specific language and literacy skills of that community (Gee, 1990, 1998, 2000; White & Lowenthal, under review). Thus acceptance within a community requires that one knows and employs the specific linguistic practices (reading, writing, speaking, non-verbal communication and even modes of thinking) of that community (Gee, 2000; Lave & Wenger, 1991; Wenger, 1998).

Just as faculty—and budding scholars—in different content areas engage in their own unique discourse communities, online faculty in certain fields of study (e.g., education) also communicate differently than online faculty in other fields of study (e.g., business). Further, because of these differences, students' expectations regarding appropriate forms of communication and ultimately presence are likely to vary across academic disciplines. While we often like to think of good teaching as a universal concept, in practice, good teaching always happens in a specific context with specific forms of discourse. In fact, part of good teaching, especially at the graduate level, involves indoctrinating students into appropriate forms of discourse for the career of their choice. Therefore, researchers of the CoI framework need to investigate whether each of the CoI framework differs across discourse communities (i.e., academic disciplines).

#### Course Format

In addition to academic discipline, course format can likely influence all three presences. Course format can include not only the way that a course is designed and developed but also how the course is delivered. The design or format of an online course or program can influence how faculty and student’s develop and perceive social presence in general and teaching presence in particular (Anderson et al., 2001). For instance, having an online faculty member meet his/her students face-to-face before a course begins can affect a student’s perception of social and teaching presence. In addition, whether or not a student is part of a cohort also is likely to influence how such

things as teaching presence is developed and perceived (Lowenthal & Lowenthal, 2009). Finally, the context and manner in which online courses are designed and developed is rarely taken into consideration. For instance, the way that a course is designed and developed (e.g., by an individual faculty member vs. by a team of faculty and instructional designers) is likely to influence the types of activities and media used (Lowenthal & White (2009) as well as how presence is established in the course.

## Time

Related to course format is the issue of time. Early research on social presence suggested that things (e.g., task completion and group work) take longer in computer-mediated environments (Thurlow, Lengel, & Tomic, 2004). Researchers have questioned how time affects social presence (Lin & Laffey, 2004; Tu & Corry, 2004) as well as the CoI as a whole (Akyol & Garrison, 2008). However this research has not specifically investigated each of the three presences in accelerated courses. Time, similar to the issue of format, is likely to influence teaching presence, social presence, and cognitive presence. For instance, we contend that whether faculty and students spend five weeks, eight weeks, or 16 weeks communicating online likely influences how each presence is developed, maintained, and perceived by students online. However, often these details are not adequately investigated in the research on each one of the presences individually or the CoI collectively.

In their recent review, Rourke and Kanuka (2009) criticized the CoI framework as a whole—essentially because of the general lack of research conducted on the CoI framework and student learning. While we agree that more research needs to be conducted on how a CoI results (or does not result) in student learning, we also think it is important to get a better understanding how the previously mentioned issues—specifically, discipline and discourse differences, course format, and time—influence student perceptions of a CoI.

## Focus of the Study

This study was specifically designed to investigate these gaps. More specifically, the overarching goal of this study was to investigate whether a difference exists in each of the three elements of the CoI across discourse communities (specifically, business, education, computer science, and humanities) in accelerated (i.e., eight week long) online courses.

## Methods

This study was conducted at a private Catholic university. For the purpose of this paper, we will refer to this university as Catholic Western University (CWU). In the following sections, we will outline the methods used for this study. CWU consists of three colleges; the students for this study came from the College for Professional Studies (CPS) which consists of adult learners—in fact, a student must be 21 years or older to enroll in (CPS). Adult students at CWU complete undergraduate or graduate accelerated degree programs—which consist of five week and eight week courses. CPS has an estimated 12,000 students; 40% of the credits each semester are completed online. Participants of the study came from four different schools and disciplines—education, business, humanities, and computer science—within CPS. CPS divides a normal academic year into three semesters. Each semester then consists of three five-week and two eight-week terms. However, completely online courses at CWU are only offered during eight-week terms. Students completing fully online courses in the first eight-week spring term (i.e., Spring 8 week 1, 2009) were invited to participate in this study. An email was sent out to 2303 students. The survey was completed 406 times (i.e., n=406). We are unable to compute a specific response rate because some of the 2303 students took more than one online course during the given term and were asked to complete the survey once for each course they took. However, as a follow up to a study Lowenthal and Lowenthal (2009) conducted on differences in teaching presence across discourse communities, we decided to focus only solely on the responses from graduate students (n=191) because there is reason to believe that graduate students are more entrenched in specific discourse communities than undergraduates who might be new to a field of study and practice (Lowenthal & Lowenthal, 2009).

A survey developed by Arbaugh and colleagues (2008)—to measure the three presences that make up the CoI Framework—was used to collect data from students. Both Arbaugh et al. (2008) and Swan et al. (2008) have published information about the development and validation of the survey. After seeking permission from Arbaugh

to use the survey, an electronic version of the survey was created. The survey was then administered to all students taking an online course in CPS during spring 8 week 1 2009. We closed the survey and stopped accepting responses a month after we administered it.

Once the survey was closed, the data was downloaded and entered into SPSS. We coded any blanks as 99 and any unknowns as 98. New variables were created for teaching presence, social presence, and cognitive presence by averaging the responses. Descriptive statistics as well as an Analysis of Variance (ANOVA) was conducted to investigate whether a difference exists in each of the three elements of the CoI across discourse communities (specifically, business, education, computer science, and humanities) in accelerated (i.e., 8 week long) online courses.

## Results

The demographics (see Table 1) illustrate that the sample for this study was roughly half males and females. Despite being an adult program, 56% of the respondents were between the ages of 21-30. Finally, over half of the respondents came from the school of business. At the same time, while the sample overall considers itself technology adept—with 76.7% rating itself as either a 7, 8, or 9 on a 1-10 scale with 10 being an expert—35.5% of the students were taking their first course online.

Table 1  
*Demographics*

		Frequency	Percent
Gender	Female	92	48.2
	Male	99	51.8
Age	21-30	107	56
	31-40	55	28.8
	41-60	26	13.6
	62-older	3	1.6
Discipline	Management / Business	94	49.2
	Computer / Info Science	39	20.4
	Humanities / Social Science	16	8.4
	Education / Counseling	38	19.9

Table 2  
*Technology Skills and Prior Experience Learning Online*

		Frequency	Percent
Technology Skills	7	25	13.2
	8	63	33.3
	9	57	30.2
	Total	145	76.7
Previous Experience	0	65	35.5
	1	24	13.1
	2	17	9.3
	3	15	8.2
	Total	121	66.1

To investigate whether there was a difference in average score of student perceptions of teaching presence, social presence, and cognitive presence across different disciplines a one-way ANOVA was calculated. No statistically significant difference was found (see Table 3). However, while not statistically significant, there are some observable differences. For instance, Humanities / Social Science students had a mean teaching presence score of 3.63 whereas Education / Counseling had a mean teaching presence score of 2.97. At the same time, Management

/ Business students had a mean social presence score of 3.47 whereas all three other disciplines had sub 3.0 mean social presence scores with Computer / Information Science with 2.82, Education / Counseling with 2.90, and Humanities / Social Science with 2.94. Finally regarding cognitive presence, Management / Business students rated had a mean cognitive presence score of 3.96 whereas Computer / Information Science had a mean cognitive presence score of 2.99.

Table 3  
*Descriptive Statistics*

	Teaching Presence	Social Presence	Cognitive Presence
	Mean	Mean	Mean
Management / Business	3.35	3.47	3.96
Computer / Information Science	3.19	2.82	2.99
Humanities / Social Science	3.63	2.94	3.60
Education / Counseling	2.97	2.90	3.15

### Discussion

Researchers struggle with finding the significance of results that reveal little or no statistical significance. The lack of statistical significance can quickly lead one to conclude that a study was unsuccessful. However, if for no other reason, the mean presence scores across the disciplines suggest more than anything else that students can and do perceive relatively respectable levels of presence in accelerated online adult programs that utilize enterprise models of course development (when compared to the results of Swan et al., 2008). Further, while the results of this study were not statistically significant, this alone does not unequivocally prove that differences do not exist across discourse communities or that subject matter differences are not important variables.

The College for Professional Studies at CWU has an atypical population of students in that as an adult accelerated college within a Catholic University, it attracts older—one could argue more mature—students than traditional colleges and universities. Not only does the average student work and pay for his or her own education but most students have experience working in the “real” world while managing multiple commitments that often include a family and children. Therefore, even though the sample for this study consists of a younger population than the typical student at CWU, it is likely that even these younger students had a full time job and responsibilities during the day.

Further, and perhaps even more importantly, the College for Professional Studies at CWU employs an “Enterprise Model” of course development, which is essentially a centralized-standardized approach to the design, development, and management of online programs (Lowenthal & White, 2008). This means among other things that all online courses in CPS at CWU are designed and developed in a systematic process that involves using faculty as subject matter experts coupled with instructional designers and a host of other instructional technology professionals to develop high quality and standardized courses. Faculty then, once completing a three week long online training and assessment, end up teaching courses that are designed and developed by others and courses that they often do not have the ability to author (i.e., change). It is unclear, and impossible to ascertain from this study alone, the degree to which the enterprise environment influenced the results of this study. Further research is needed to compare student’s perceptions of presence in both enterprise like environments and traditional university environments.

Finally, while the overall presence scores seem respectable, the social presence scores are comparatively very low. Given the fact that these courses are taught in an accelerated eight-week term, it is likely that the accelerated nature of the courses are affecting students ability to establish social presence in the first few weeks of a course. Future research should look at specifically comparing the results from a study and sample like this to more traditional samples that employ more decentralized models of online education to see if the accelerated and/or enterprise characteristics of this study and sample are affecting students overall perceptions of presence.

### Conclusion

At some abstract level, “good teaching is good teaching.” However, in practice, good teaching is always situated in a specific context that gives it meaning and helps define it. The research on online teaching and learning can be strengthened by explicitly documenting how teaching and learning online change (or does not change) depending on its context. One important component of any learning context is the academic discipline and its related ways of being and knowing. This study was one example of investigating the role that academic disciplines play in the online teaching and learning process. Even though the results were not statistically significant, they serve as a foundation for future studies.

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