

The first decade of the community of inquiry framework: A retrospective

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ARTICLE INFO

Keywords:

Community of inquiry
Social presence
Cognitive presence
Teaching presence
Transcript analysis

ABSTRACT

This article provides a personal perspective about the development of the seminal papers associated with the Community of Inquiry Framework. The framework and its construction are described. The main part of the paper explores the evolution of the framework and its associated methodology. Finally, research associated with the validation of the framework and new research directions are reviewed.

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1. Introduction

A decade ago, the first of a series of articles describing the Community of Inquiry (CoI) framework and each of its three constituent elements was published (Garrison, Anderson & Archer, 2000). This was followed by three more articles describing and detailing methods for measuring each of the three elements of the CoI framework (Rourke, Anderson, Garrison & Archer, 1999¹; Garrison, Anderson & Archer, 2001; Anderson, Rourke, Garrison & Archer, 2001), as well as an article describing various methodological issues related to the framework itself (Rourke, Anderson, Garrison & Archer, 2001). Subsequently, Garrison and Anderson (2003) summarized the seminal articles in a book which also explored some of the practical implications of the framework and future research directions. The CoI framework has since been adopted and adapted by hundreds of scholars working throughout the world. The original articles and much of the subsequent work are archived at or linked from a website maintained by Randy Garrison at <http://communitiesofinquiry.com/>.

The research group that created the CoI framework worked together in the Faculty of Extension at the University of Alberta for a period of just 5 years (1996–2001). The three of us (the authors of this paper) had known each other for about a decade before that time, as we were all involved, although at different institutions, in distance education in the province of Alberta, Canada. Walter Archer had been

Director of Adult and Distance Education at the Faculty of Extension since 1988. Terry Anderson joined the Faculty of Extension as Director of Academic Technologies for Learning in 1994, the same year he completed his PhD at the University of Calgary as a student of Randy Garrison. In 1996 Randy left his position as Associate Dean and Coordinator of the Master of Continuing Education program at the University of Calgary, where he had formerly served as Director of Distance Education, to take on the post of Dean of Extension at the University of Alberta.

Soon after Randy began his tenure as Dean, the Faculty of Extension committed itself to the creation of a new, partly online graduate program in Communications and Technology. This tended to focus our research interests in a direction complementary to the content, teaching and technology support issues associated with the new program. That is, we needed to connect the human issues around online, text-based communication, the teaching issues associated with the use of this mode of education, and the overall cognitive goals of this (and any) graduate program. This need to conceive and begin to deliver our own new online graduate program was a significant part of the impetus to create a new research framework to investigate educationally important issues around all such programs.

We eventually conceived of these issues as three critical elements in the experience of conducting higher education using online communications media – Social Presence, Cognitive Presence, and Teaching Presence. These elements, and their areas of overlap, appear in the now-iconic diagram of the Community of Inquiry framework (Fig. 1) which has evolved only slightly during the 10 years it has been in use by ourselves and many others. The original version is shown below.

It is important to emphasize that this framework emerged in the specific context of computer conferencing in higher education—i.e., asynchronous, text-based group discussions—rather than from a traditional distance education theoretical perspective assumed that students worked independently from each other. Computer

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¹ Although through an accident of publishing the social presence paper appeared in print before the original paper outlining the framework appeared, it was actually the second to be written and submitted for publication.

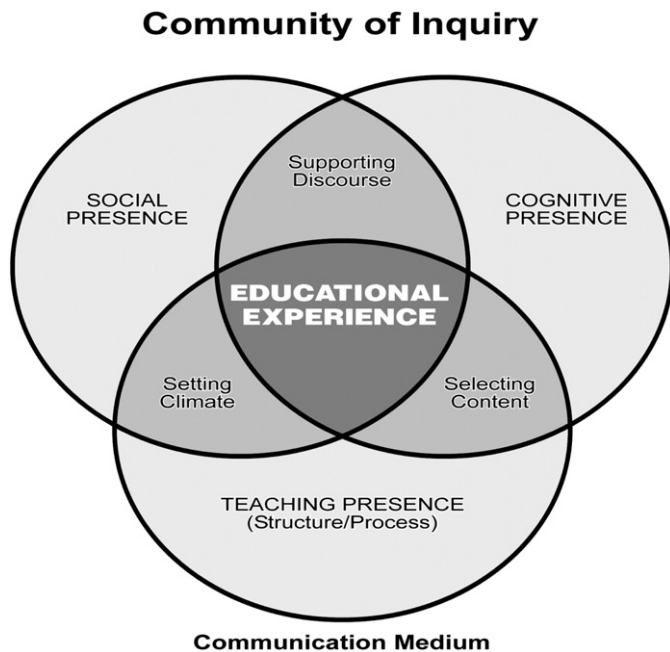


Fig. 1. Community of inquiry framework.

conferencing seemed to represent an entirely new generation of distance education (Garrison, 1985, 1989, 2009a) requiring new theoretical perspectives.

While the Community of Inquiry framework was intended to offer such a new theoretical perspective, it drew upon previous scholarship related to computer conferencing and/or content analysis from the 1980s and 1990s by a number of scholars including Henri (1991), Newman et al. (1996, 1997), Gunawardena (1995), and Hiltz and Turoff (1993). It also drew upon insights from the fields of linguistics and communications (e.g., Chafe & Danielewicz, 1987) regarding relevant features of text-based communication as compared to spoken language.

2. Construction of the framework

The CoI framework is generic in that it is conceptually grounded in theories of teaching and learning in higher education. Philosophically, the CoI framework is consistent with John Dewey's work on community and inquiry. It has been stated that "the two constituting notions of community and inquiry form a pragmatic organizing framework of sustainable principles and processes for the purpose of guiding online educational practice" (Swan, Garrison & Richardson, 2009). The phrase community of inquiry was borrowed from Lipman (1991) whose work was also founded on that of John Dewey. Dewey believed that inquiry was a social activity and went to the essence of an educational experience. Our connection to Dewey was especially important in the development of the concept of cognitive presence in a community of inquiry.

The goal of our work on the CoI framework was to provide a conceptual framework that would provide order, heuristic understanding and a methodology for studying the potential and effectiveness of computer conferencing. The basic premise and goal of this model of formal education, consistent with the potential of computer conferencing, was the creation and sustainability of a community of inquiry. The goal was to define, describe and measure the elements of a collaborative and worthwhile educational experience. In this regard, it must be noted that the CoI framework is a process model. The framework attempted to outline not only the core elements (social,

cognitive and teaching presence), but also the dynamics of an online educational experience. In retrospective, the dynamic relationships among the presences could have been emphasized to a greater extent.

Another core concept addressed in the seminal paper (Garrison, Anderson & Archer, 2000) was the distinction between oral and text-based communication. While much of this is understood and taken for granted today, 10 years ago it was important to point out the enormous differences in engaging in asynchronous online, as opposed to face-to-face or teleconferenced, modes of developing communities of inquiry. The strengths and weaknesses of fast paced, spontaneous and fleeting oral communication and that of a reflective, precise and lean form of text-based communication were argued to be crucial considerations. We believed at the time that the effect of lack of non-verbal cues in online communication was exaggerated and that the strengths of text-based communication often more than compensated for a face-to-face or other model of synchronous presence. Research findings over the subsequent years confirmed this.

We obtained a research grant in 1997, which permitted us to begin the process of validating our conceptual model. At this point our research team was expanded and enhanced by the valuable addition of Liam Rourke, a masters and later doctoral student at the University of Alberta. Liam was instrumental in the development, testing and validation of the methods that evolved during the first years of the development of the CoI model. His contribution was noted in his first authorship of the two methodological papers from this era and his taking the lead on one of the first published effort to validate the content coding schemes by triangulation with student survey opinion (Rourke & Anderson, 2002).

3. The three elements of the framework, and how they have evolved

Considerable effort has been focused on studying each of the three elements or "presences" within the CoI framework. These three constructs have proven to be relatively stable. That does not mean there have not been refinements. Soon after the publication of each of the seminal articles describing the framework, methodology issues, and each of the presences, the focus and terminology shifted to a broader perspective of online learning.

3.1. Cognitive presence

Cognitive presence is operationalized through the Practical Inquiry (PI) model based on the more elaborate phases of Dewey's notion of reflective thought. Dewey believed that a worthwhile educational experience should be based on a process of reflective inquiry (see Swan, Garrison & Richardson, 2009, for further discussion). In this regard, it should be noted that cognitive presence is clearly a developmental model consistent with the CoI framework as describing the dynamics of a worthwhile educational experience. Looking back on the CoI seminal paper, some of the language we used perhaps elevated cognitive presence to a higher status within the CoI than it should have had. This could have been the result of its association with critical thinking – the ultimate goal of higher education. However, this can be misleading, as the CoI framework is dependent upon the interaction of all presences to a greater or lesser degree depending on the subject matter, the learners and the communications technology.

The four phases of the Practical Inquiry model are the triggering event, exploration, integration, and resolution. Early studies using transcript analysis, including our own (Garrison, Anderson & Archer, 2001), indicated that students were not proceeding to the integration and resolution phases. While we speculated on a number of reasons for this, including the validity of the model, the one explanation that seemed most reasonable was that the design and expectations of the educational experience did not require students to move to these

phases. This explanation has largely been supported in subsequent research. In short, it appears that teaching presence in the form of designing learning activities that require solutions and that provide facilitation and direction will ensure students move through the phases of the PI model in a timely manner.²

3.2. Social presence

Early research on computer conferencing made it clear that if we were to establish a community of inquiry, it was essential that some form of social presence would need to be developed. When we began this research, however, there was doubt about establishing social presence in an online environment. The concern we had, and one of the prime motivators for creating the Col framework, was that most of the previous research had been directed at social presence, largely to the exclusion of other presences. Moreover, the research on social presence was a one dimensional construct associated with an emotional sense of belonging. What was missing was a connection to the teaching and learning elements of a community of inquiry.

An important contribution of our work was describing social presence from a multi-dimensional perspective that had overlap with the other presences. Building on the affective expression dimension, we added “open communication” as a category within social presence to reflect the purposeful nature of the community, and “group cohesion” to reflect the collaborative nature of the community and its activities. Subsequently, Garrison (2009b) has tried to provide a stronger link between social presence and the purposeful, academic nature of the inquiry process. In this regard, there is evidence to suggest that the first priority for most students in a formal educational context is shared social identity (i.e., the purpose of the course), and not personal identity (i.e., interpersonal relationships). As a result, it is argued that the three dimensions of social presence may be defined in terms of the participants identifying with the community, communicating purposefully in a trusting environment, and developing interpersonal relationships (Garrison, 2009b). These are fundamentally the same as the previous dimensions but their temporal priority in a formal educational experience has changed. That is, there is a clear developmental and progressive nature to these dimensions that matches those of the other presences. It is this progressive nature of the presences that was never quite made explicit in the original conceptualization.

That said, the relationship between social presence and the other presences requires more study. Swan et al. (2009) note the need to explore the relationship between social and cognitive presence. A recent study explored the causal relationships among the presences (Shea & Bidjerano, 2009). This study was confirmed by another study by Garrison, Cleveland-Innes and Fung in this special issue. Both studies concluded that social presence must be seen as a mediating variable between teaching and cognitive presence. Furthermore, the results indicated that teaching presence causally influenced social and cognitive presence. This finding regarding the importance of teaching presence will be discussed next.

3.3. Teaching presence

The main finding over the last decade with regard to teaching presence is the growing evidence as to the importance of this element. Teaching presence is seen “as a significant determinant of student satisfaction, perceived learning, and sense of community” (Garrison & Arbaugh, 2007, p. 163). Notwithstanding its importance, however, there is a conceptual lack of consensus as to the morphology of its dimensions (design, facilitation and direction) across populations of students. The three dimensional nature of the teaching presence

construct may well be an artifact of the nature of the student sample and educational context. For example, depending on the design and pedagogical approach, students may not differentiate between design and direction or facilitation and direction. However, at this point, it can be said that there remains theoretical and practical merit in continuing to distinguish three dimensions for the teaching presence construct.

4. Methodology used to develop and first validate the Col framework

We opened our methodological issues in computer content analysis paper (Rourke, Anderson, Garrison & Archer, 2001) with a fictional but largely autobiographic story of an innovative professor attempting to find proof of the learning that she stimulated in her online courses. The story illustrated the challenges faced then and now by transcript analysis researchers. These include issues of reliability and validity, epistemological challenges to what forms of learning are exposed in transcripts, issues related to the choice of the best unit of analysis and the inherent challenge of identifying and counting many of the more interesting variables.

We began this paper by reaffirming quantitative content analysis as “...a research technique for the objective, systematic, quantitative description of the manifest content of communication” (Berelson, 1952, p. 519). We then presented the results of an examination of 16 studies published in the 1990s that had applied the technique of content analysis to the transcripts of online discussions. We tabulated the variables examined in each study, the method (if any) of calculating and reporting the reliability of measures used, the unit of analysis, and if either descriptive or inferential or both types of analysis were presented in the study. Reliability issues were central to our discussion in this paper. If results could not be obtained independently by different coders or if methods used could not be replicated on other data sets, then it was unlikely that the reported results were methodologically valid. Of the 16 studies, only three reported reliability figures that involved independent judgments. Further, many studies used simple calculations of inter-rater reliability without considering the effect of random agreement – an effect that is especially problematic when the number of coding choices is limited. We presented a means–i.e., use of Cohen's kappa–to compensate for such chance agreement.

We also discussed the challenges of choosing an appropriate unit of analysis. Many of the early studies followed Henri's suggestion to use the “unit of meaning” as the most useful unit to code. We noted then and continued to stress, throughout the project, the challenges of deciding just what is a unit of meaning and how many fit into a sentence, a paragraph or a posting, and, thus, the near impossibility of reliably identifying “units of meaning”. This was particularly problematic when coding for latent variables. In our work we tested using various “units of meaning”. We used grammatical units such as sentences and paragraphs, and structural units such as full postings and threads. We eventually used different units depending on which of the “presences” we were measuring, but always were left slightly dissatisfied with all of the units. In some cases this was because they were easily defined (e.g., a fixed number of words) but educationally of little value. Other units were or educationally useful (e.g., a single topic) but unreliable and, therefore, lacking in validity.

We also discussed the types of variables that can be coded using content analysis. Manifest variables such as number of emoticons used are easy counted, but latent variables such as phases of a critical thinking cycle which have much more educational importance are much harder to code reliably. Finally, projective latent variables such as humor depend upon the coders themselves being able to project their own interpretations of the variable into the example which they identify in the transcript. Needless to say, coding projective latent variables reliably among multiple coders is difficult. It takes a great

² Regarding this point, see also the “From the Trenches” piece by Walter Archer in this issue.

deal of time and work to align the coders' internal representations of such variables before they can even begin to work on transcripts.

These methodological challenges motivated a second paper on validity in quantitative content analysis (Rourke & Anderson, 2004) in which we continued to wrestle with methodological issues and began arguing for multi-methodological studies that augmented the shortcomings of quantitative analysis with qualitative content analysis and other methods to triangulate results. In partial response to the Rourke and Anderson paper, Garrison, Cleveland-Innes, Koole, and Kappelman (2006) wrote a paper addressing qualitative and quantitative issues as well as the issue of negotiated coding.

Despite these methodological issues, after 10 years we are still seeing published work using the variables, reliability calculation methods, and units of analysis we developed during the early years of the Col project. But we now see transcript analysis as just one of many lenses through which researchers can investigate and measure the development of a community of inquiry – in online, face-to-face or blended models of learning. Transcript analysis provides a concrete instantiation of certain components of the educational transaction. But like any uni-modal view of the elephant, it does not reveal all the complex variables of context, personality, discipline and timing that make up a unique educational transaction.

5. Validation of the framework

It is satisfying to us to know that a number of studies have provided validation of the Col framework (Arbaugh et al., 2008; Garrison & Arbaugh, 2007). While work remains in validating the composition of the presences across various populations (e.g., colleges, professional development, high schools) and disciplines, the framework has been shown to be reasonably robust, as discussed in the sections below. Like all important scholarship, the Col model has recently been subject to a critical review. Rourke and Kanuka (2009) argued that the Col framework has not been clearly linked to learning outcomes. Akyol et al. (2009) responded, noting that the original intent and value of the model is in its description of process elements and identified other mis-representations. The authors of the response noted that while “the seminal Col work does not exclude the consideration of intended learning outcomes, the focus has been consistently on the nature of the educational transaction.” In any case, such discussions provide clarity and direction for research using the Col framework.

5.1. Instrument development

Considering the lack of comprehensive theoretical models of online learning at the time this research began, the Col framework and its associated methodology was designed for exploratory and descriptive studies. Early work relied on the laborious transcript analysis of online discussion forums. More recently, the need for quantitative approaches to study the dynamic relationships among the presences as well as the need to conduct cross disciplinary and institutional studies was identified (Garrison & Arbaugh, 2007). To this end, there has been a concerted effort to develop a psychometrically sound Col instrument to study larger samples over time. This work has turned the focus of Col research more toward the perceptions of learners and their experience of the three presences as revealed in online or paper survey results.

Arbaugh et al. (2008) reported on a multi-institutional effort to develop and test an instrument developed for this purpose. While there is still work to do in refining the Col instrument, the current form is reliable and provides support for the validity of the Col framework. It provides an efficient means of studying large student samples.

5.2. Col dynamics

In a review of the Col research several years ago the need to understand the interdependence of the presences was highlighted (Garrison & Arbaugh, 2007). As a result of the work of Zehra Akyol and the availability of the Col survey instrument (Akyol & Garrison, 2008), there have been some preliminary but revealing findings with regard to the internal dynamics of the presences as well as the inter-relationships among the presences in a community of inquiry over time. The inter-relationships among the presences are explored more fully in other articles in this special issue.

The Col survey instrument opens up this very important area of study that will have an enormous impact on the theoretical and practical development of the Col framework. This innovative study provides a very good example of how to study the educational dynamics of a community of inquiry.

6. Conclusion

As noted in the introduction, the research group that developed the Col framework model was originally together in the Faculty of Extension of the University of Alberta during the period 1996–2001. However, in the summer of 2001, as the last of the five foundational papers were still in press, the research group broke up when all three of the present authors left the University of Alberta to take up positions at other universities. As our responsibilities diverged, so did our particular interests in applying the Col framework.

Randy Garrison took on the role of Director of the Learning Commons (a teaching/learning support centre) at the University of Calgary. In line with his new responsibilities, he began to extend the Col model to contexts of blended learning. He was also the centre of a growing number of scholars at other institutions who adopted and adapted the Col model and began to coalesce into something like an international community of practice.

Terry Anderson took up a Canada Research Chair in Distance Education at Athabasca University, an institution devoted to distance learning. There he was freer to follow his many interests related to the use of technologies for distance learning support, including the use of social networking tools.

Walter Archer began a term as Dean of Extension at the University of Saskatchewan, where he also served for 2 years as Acting Director of the Teaching and Learning Centre. Partly as the result of this broader area of responsibility he began to experiment with extending the Col framework to apply to higher education generally, rather than only online and blended learning, with a particular focus on the integration of experiential learning (CSL, practica, etc.) into university programs.

Thus we have, to a certain extent, gone our separate ways and look back on the development of the Col framework through 10 years of differing personal history and academic responsibilities. Yet we look back at our close collaboration during the period 1996–2001 with considerable fondness. When we started this research during that period we had modest expectations. It was the opinion of at least one of us that our first joint publication outlining the Col framework would very likely vanish into the academic ether, as do most academic publications. We have been pleasantly surprised that this has not been the case: the first keynote article, in fact, has been cited by over 600 times in scholarly publications (Google Scholar as of July, 2009). Perhaps we underestimated the growing interest in and adoption of online learning in mainstream higher education. In any case, the Col framework addressed an apparent need to provide order and a methodology to study the growing phenomena of online and blended learning.

As a result of uptake of the framework to date, our expectations for the next decade are high. One important reason for this is the development of the Col survey instrument and the studies in online and blended learning that will be made possible with this tool. In

particular, the CoI instrument provides a means to study the dynamics of online communities of inquiry, both among and within the presences. We also look forward to seeing the framework used as a predictor of learning processes and learning outcomes both from the perspective of individual courses/programs of studies and lifelong learning attitudes and participation. This is an enormous challenge that may well take the next decade to explore and understand. In any event, the future looks bright and we hope that this special edition will be a catalyst in initiating new lines of research and practice employing the CoI framework.

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