Chapter 10

An Online Resource to Foster Cognitive Presence

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ABSTRACT
This chapter extends the body of research surrounding the Community of Inquiry (CoI) framework and the literature on developing critical thinking in online environments. The findings from a recent multiple site study are discussed. The purpose of the study was to explore the extent to which teaching and social presence and other factors contributed to the development of cognitive presence. The project involved 189 participants in two higher education institutions, enrolled in 10 research methods and educational research courses. The participants used an innovative online resource and participated in online discussion forums to assist them in learning about educational research and developing research proposals. By exploring how participants used this resource, the researcher was able to gain insight into what strategies contributed to improving cognitive presence. Future directions for critical thinking in online environments and strategies for cognitive presence development are discussed.

INTRODUCTION
The impact of Internet technology on critical thinking is of growing interest among researchers. However, there still remains much to explore in terms of how critical thinking can be fostered through online environments for higher education and workplace training groups. This chapter summarizes a recent multiple site study which extends the body of research surrounding the Community of Inquiry (CoI) framework (Garrison, Anderson, & Archer, 2000) and the literature on developing critical thinking in online environments. The purpose of the study was to explore the extent to which teaching and social presence and other factors contributed to the development of cognitive presence. The intention was to foster opportunities for critical thinking through the design, development, and application of an online learning resource.

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Essential to this goal was the creation of a learning environment that would enable an online learning community to progressively move to higher levels of critical thinking. There is evidence in the online learning literature that critical thinking skills can be enhanced through the use of a variety of online formats (Duphorne & Gunawardena, 2005; Moore & Marra, 2005). However, other researchers have found that moving an online community of learners to the highest levels of critical thinking is difficult (Garrison, Anderson, & Archer, 2001; Kanuka & Anderson, 1998; Meyer, 2004; Vaughan & Garrison, 2005). The highest levels of critical thinking involve connecting, integrating, and applying new ideas (Garrison, et al., 2000).

The study involved 189 participants from two higher education institutions, enrolled in 10 research methods and educational research courses. The participants used an innovative online resource (Research Design Learning Resource – RDLR; Archibald, 2010) and participated in online discussion forums to assist them in learning about educational research and developing research proposals. By exploring how participants used this resource, the researcher was able to gain insight into what factors fostered the development of cognitive presence.

The body of this chapter unfolds with a brief introduction to the CoI framework and cognitive presence. Included is an outline of the literature on critical thinking in educational contexts. This exploration of the literature incorporates a brief discussion on the importance of collaborative learning as an approach to develop cognitive presence. Then, through the lens of teaching presence details of the design principles and strategies the researcher used to design and implement the RDLR will be discussed.

Finally, the conclusion of this chapter will include findings from prior studies that support the findings of the study and strategies for developing cognitive presence. The future research directions section will include recommendations for promoting cognitive presence in course design and facilitation, as well as some thoughts on the future directions for critical thinking in online environments. By the end of this chapter readers should be able to:

1. Understand why social presence and teaching presence contribute to the development of cognitive presence and critical thinking.
2. Identify strategies to promote critical thinking in online learning environments.

BACKGROUND

Cognitive Presence

Through examination of the relationships between three elements in an online CoI (i.e., teaching, social, and cognitive presence), the researcher was able to gain further insight into whether higher levels of cognitive presence could be reached in an online environment. Specifically, the researcher explored the effects of the design of the online learning resource, direct instruction and facilitation of the discussions (teaching presence) and the extent of the development of the interpersonal relationships among users (social presence) on predicting critical thinking among users (cognitive presence). Furthermore, with regard to the examination of the CoI, the researcher was able to determine the ability of social and teaching presence to predict cognitive presence after controlling for several additional variables (i.e., self-directed learning readiness, prior online learning experience, and prior collaborative learning experience).

When designing this study the researcher made an important assumption and that is the concept of cognitive presence in the CoI framework represents the process of critical thinking. The phases of Garrison et al.’s (2000) Practical Inquiry Model were used to assess the critical thinking processes of participants in this research. The model is a four stage cognitive processing model
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