Chapter 11

Relationship between Types of Question Prompts and Critical Thinking in Online Discussions

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ABSTRACT

This chapter addresses the relationship between types of initial question prompts and the levels of critical thinking demonstrated by students’ responses in online discussions. The chapter is framed around a research study involving discussion prompts that were coded and classified using Andrews’ typology (1980). Students’ responses (n=1132), taken from 27 discussion forums, were coded using the four-stage Practical Inquiry Model (PIM) (Garrison, Anderson & Archer, 2001). Among the nine question types explored, Critical Incident questions were most effective in generating high levels of student thinking. This was followed by Lower Divergent, Shotgun, and Analytical Convergent question responses that mainly resulted in students achieving the Integration phase of the PIM. Moreover, validation of the discussion prompts provides an updated typology that categorizes question prompts based on the verbal structure of online discussions. This chapter provides important implications for instructors who teach online, especially those looking for general guidelines regarding how to structure discussion prompts to elicit high quality student responses.

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INTRODUCTION

Given the recent rapid growth of online education (Allen & Seaman, 2011), identifying “best practices” for facilitating critical thinking skills and deep learning in online environments has gained considerable interest among researchers and educators (Maurino, 2007; Richardson & Ice, 2010). Although a wide variety of instructional strategies can be used to encourage student learning online, discussion is one of the most commonly used pedagogical methods used in online courses since it has the potential for promoting critical thinking skills (Akyol & Garrison, 2011; Ertmer & Stepich, 2004; Richardson & Ice, 2010; Rourke, Anderson, Garrison, & Archer, 1999; Pena-Shaff & Nicholls, 2004). This chapter examines the relationship of online discussion question prompts and students’ critical thinking achieved using different questioning strategies.

While online discussions may potentially be an effective platform for developing critical thinking, researchers believe that posing the right question is crucial to actual knowledge construction (Kanuka & Garrison, 2004; McLoughlin & Mynard, 2009; Richardson & Ice, 2010). According to Wang (2005) questions are the most vital tool for stimulating students’ critical thinking and facilitating knowledge construction in online discussions. Yet despite the importance of initial questions, only a handful of studies have explored the role of questions in online discussions, specifically, the role of initial question prompts.

Although the relationship between teachers’ questions and the level of students’ responses has been established in face-to-face settings (Bloom, 1956; Dillon, 1994; Vogler, 2008), little is known about how this relationship plays out in online settings. With the increasing use of online instruction, it is important to examine the nature and extent of this relationship in the online environment. Andrews (1980) suggested that by helping educators understand how different types of questions can be used to promote different types of student responses, they can more readily target specific learning outcomes, such as higher-order thinking.

BACKGROUND

The importance of questions as an instructional strategy to facilitate critical thinking is widely acknowledged in the literature, especially advocating the view that higher level questions can support and raise levels of students’ thinking (Bloom, 1956; Blanchette, 2010; Chin & Langsford, 2004; Dillon, 1994; Ertmer, Sadaf, & Ertmer 2011). Paul and Elder (2001) defined critical thinking as “the intellectually disciplined process of actively conceptualizing, applying, analyzing, synthesizing, and evaluating information gathered from observation, experience, reflection, reasoning or communication as a guide to belief and action” (p. 371). Encouraging students’ critical thinking skills is a common goal of higher education (Arrend, 2009). Recent research suggested that online discussions assist students in the development of cognitive skills such as self-reflection, elaboration, and in-depth analysis of learning content (Shaff & Nicholas, 2004). Haavind (2006) emphasized the importance of online discussions for enabling students to explore multiple viewpoints, negotiate meaning, and recognize their own knowledge gaps. Furthermore, online discussions allow students to participate at any time and at their own pace to reflect on issues being discussed. As a result, online discussions can be thoughtful and reflective since students have the time to read others’ posts and synthesize their ideas (Maurino, 2007).

Although providing convenience for participation, some studies showed that critical thinking and deep learning are not easily achieved in an online discussion (Garrison, Anderson & Archer, 2001; Hara, Bonk, & Angeli, 1998; Kanuka, 2005). For example, Garrison et al. (2001) found that more than 80% of the 96 posts made in two graduate level courses reflected lower levels of thinking. Similarly, Ertmer et al. (2011) reported very few
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