Moving Online Chats from Painful to Productive: The Role of E-coaching and Feedback

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This study examined the effect of an electronic coaching and feedback intervention in teaching presence and social presence on higher order thinking in an online community of inquiry. Coaching occurred before each chat, and feedback was provided immediately afterwards. The findings suggest that over time, the frequency of higher order thinking will increase more in a group that receives coaching and feedback than in a group that does not receive coaching and feedback. In addition, the findings suggest that the Community of Inquiry framework has benefits beyond its use in course design, facilitation, and assessment to include serving as a guide to coaching.

Introduction

Our last [chat] session online was just painful . . . We were two hours into it and we couldn’t get one question answered. I mean, it hurt . . . I mean, it’s like what a waste of two hours of my life. Let’s just try to answer the question. And part of it was because I think the questions were designed to be very in depth, and the discussions just remained shallow and we couldn’t get it resolved.—Vince

Discussion is a natural part of inquiry-based learning environments. Educators of adults in particular often use discussion to help learners become critically informed about a topic or issue, take responsibility for their learning, question their assumptions, and gain more insight into themselves as learners (Brookfield & Preskill, 2005). Moving learner-moderated discussions from painful to productive in online environments involves awareness on the part of the instructor about how learners demonstrate teaching presence (i.e., setting norms and facilitating discussion among all group members), social presence (particularly, coalescing as a group) and cognitive presence, specifically synthesizing and integrating comments to move the group toward shared understanding (Garrison, Anderson, & Archer, 2000). Learners who are coached in teaching and social presence may improve the ability of the group to achieve increased cognitive presence; i.e., integration and resolution of the issues under discussion.

Coaching is a tool that many universities use to help students handle course content more efficiently or set goals for their education (Murphy, Mahoney, Chen, Mendoza-Diaz, & Yang, 2005; Robinson & Gaahagan, 2010). However, coaching students to improve their higher order thinking skills online is less prevalent (Schroeder & Spannagel, 2006). In addition, feedback is perceived as a key strategy in formative assessment (Fluckiger, Tixier, Pasco, & Danielson, 2010). However, literature about electronic feedback in educational environments is sparse (Denton, Madden, Roberts, & Rowe, 2008; Tuzi, 2004). Given the importance of coaching and feedback in promoting higher order thinking and the lack of attention in the literature to those topics in online environments, this study explored the effect of electronic coaching and feedback in an online community of inquiry.

Because the course under study involved inquiry-based discussion, the Community of Inquiry model was chosen to provide the conceptual framework (Garrison et al., 2000).
model assumes that learning through discussion involves the interaction of three overlapping elements: teaching presence, social presence, and cognitive presence (Garrison et al., 2000). Teaching presence involves course design and administration, discourse facilitation, and direct instruction. Social presence is the ability of learners to project their personal characteristics to others, and cognitive presence involves meaning-making through sustained communication.

Regarding coaching within the Community of Inquiry framework, Shea, Li, and Pickett (2006) note that students may need to be coached in teaching presence to reduce reliance on directed facilitation from the instructor. This is particularly appropriate in courses that feature learner-led discussions, such as the one under study. However, the literature is sparse regarding coaching learner-led discussions within the Community of Inquiry framework.

A number of studies are emerging that address feedback (Akyol & Garrison, 2011a; Díaz, Swan, Ice, & Kupeczynski, 2010). Most of those studies involve administering the Community of Inquiry questionnaire (Arbaugh et al., 2008; Swan et al., 2008), which devotes the following two questions to feedback as an element of teaching presence: (1) The instructor provided feedback that helped me understand my strengths and weaknesses, and (2) The instructor provided feedback in a timely fashion.

Although research into feedback is aided by the CoI questionnaire, further research is needed to assess the effect of electronic feedback based on coaching in particular categories of teaching presence and social presence. Therefore, this project was designed to answer the following research question: What effect did an electronic coaching and feedback intervention have on cognitive presence in online synchronous discussions?

**Method and Procedures**

This study assessed how teaching presence and social presence help groups move to higher levels of learning. The groups were part of a graduate/undergraduate-level course at a large Midwestern university in the history and philosophy of adult education in America. Online learner-led chats that empower learners toward greater self-direction are a feature of the course.

Learners were randomly assigned to groups. One group was randomly selected for continuous coaching and feedback interventions by the co-investigator. A second randomly selected group served as the control. All groups received feedback on the content of their chats from the instructor. The treatment group had five members: three men and two women. The control group also had five members: three men and two women. Each group was comprised of four graduate students and one undergraduate student.

Of particular interest to this study is the effectiveness of a teaching presence and social presence coaching and feedback intervention in increasing cognitive presence. The intervention was outside the course expectations, and participation was voluntary. The coaching intervention occurred shortly before each chat, and feedback occurred within one hour after each chat, for a total of five sessions.

Coaching and feedback was informed by the CoI teaching presence template (Anderson, Rourke, Archer, & Garrison, 2001) and the CoI social presence template (Rourke, Anderson, Garrison, & Archer; 1999; Garrison & Arbaugh, 2007). In the teaching presence category of instructional design and organization, coaching focused on naming a moderator and summarizer for the following week so that undue time was not spent organizing the group each week. In terms of direct instruction, members were coached to summarize the discussion before moving on to the next part of the question. Regarding facilitating discourse, the group was coached to
gain agreement that the response reflects the input of all group members. Social presence coaching promoted the use of cohesive language, such as “we, our, and us” to show the learners working together and coalescing as a group. Feedback assessed how well the group achieved the goals of the coaching.

A quantitative content analysis of transcripts from group chats was used to determine frequencies of cognitive presence indicators. Transcripts from each group were analyzed to track changes over time. Three coders working independently determined the units of meaning (in this study statements and paralanguage) that represented cognitive presence according to the template developed by Garrison, Anderson, & Archer (2001). Reliability testing was conducted on the transcripts using Krippendorff’s (2004) alpha because this chance-corrected measure accommodates ratio data and multiple coders. Interrater reliability on the entire chat transcripts (α = .96, .97, and .99) surpassed the theoretical minimum of 80% (Riffe, Lacy, & Fico, 2005).

### Results

A mixed ANOVA was conducted to assess differences between learners who received the coaching and feedback intervention and those in the control group in the frequency of cognitive presence at the beginning and end of the term. Table 1 shows that the interaction between group and time is significant for cognitive presence, and the effect size is medium ($\eta^2 = .38$). Results also indicated no significant main effects of group (coached or un-coached) or time (beginning or end of term).

<table>
<thead>
<tr>
<th>Effect</th>
<th>Test</th>
<th>F</th>
<th>Sig.</th>
<th>Partial eta squared</th>
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<td>.42</td>
<td>.07</td>
</tr>
<tr>
<td>Time</td>
<td>Pillai’s Trace</td>
<td>2.8</td>
<td>.12</td>
<td>.22</td>
</tr>
<tr>
<td>Group x Time</td>
<td>Pillai’s Trace</td>
<td>6.2</td>
<td>.03</td>
<td>.38</td>
</tr>
</tbody>
</table>

*Note: Alpha = .05*

Examination of the means suggests that there was a change over time for cognitive presence between the coached group ($M = 150$) and the control group ($M = 111$). The coached group produced a statistically significant higher frequency of cognitive presence than the control group. In addition, the coached group produced more integrative statements (27) than the control group (8), and more resolution statements (3) than the control group (0) during the final chat. Thus, the coached group demonstrated more evidence of higher order thinking during chat discussions at the end of the term.

### Discussion and Conclusion

These results suggest that time by itself is not going to bring about a change in the frequency of cognitive presence. Nor will a coaching and feedback intervention by itself influence the frequency of cognitive presence. However, if a group is continuously coached and provided with feedback in teaching presence and social presence over time, group members can increase the frequency of higher-order cognitive presence compared to members of an un-coached group. The notion of coaching in teaching and social presence reflects the assertion by

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Garrison et al. (2000) that those presences support cognitive presence. The results lead to the following assertions:

1. Coaching that occurs shortly before a chat and feedback that is provided immediately afterwards can increase the level of cognitive presence. The results suggest that coaching and feedback will help learners increase their knowledge of the inquiry process, ask questions to confirm their understanding, and facilitate inquiry, among other metacognitive activities (Akyol & Garrison, 2011b).

2. Continuous coaching and feedback is more effective in increasing the level of cognitive presence than intermittent coaching and feedback. The results support Etkina et al. (2010) and Stein, Wanstreet, and Simons (2008) regarding the importance of continuous coaching and formative assessment. Coaching in discussion processes and feedback about the gap in those processes need to occur continuously throughout the course.

3. Coaching and feedback related to the discussion process is simple, directive, functional, and task-based. Feedback complements the coaching in that it identifies gaps between the coaching tasks that were encouraged and the performance. Therefore, coaching and feedback are iterative and build on each other.

Learner-led discussions can promote critical thinking, responsibility for learning, and insight into assumptions adults hold about themselves as learners (Brookfield & Preskill, 2005; Vella, 2002). Continuous coaching and feedback can reinforce the power of learner-led discussions to foster more interdependent learners so they can conduct inquiries together and model collaborative learning. In addition to teaching, social, and cognitive presence, continuous coaching and feedback contribute to a successful course. Groups benefiting from coaching and feedback will have the tools to move chat discussions deliberately from painful to productive.

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