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Research Notes

Investigating Triggers in CMC Text Transcripts

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Background

Computer Mediated Conferencing (CMC) provides the opportunity for interaction in distance education courses. Successful asynchronous text-based conferencing overcomes *transactional distance* (Moore, 1991), permitting student-student as well as instructor-student communication. This interaction is thought to foster the development of an on-line learning *community*.

Strategic initial messages, *triggers,* in asynchronous text conferencing can lead to rich cognitive discussions. Such initiating messages or triggers have been reported in previous literature, defined either in relation to their effects (number of actual responses received), or their intentions (the writer's evident purpose of evoking responses by being in some way provocative). In Zhu's (1996) study, a good student *starter* usually pointed to a few major discussion themes for a weekly discussion. Fahy (2001) defined "response triggers" as messages that generated large numbers of subsequent postings. *Triggers* in the *Community of Inquiry* model are defined more in the latter sense, as messages that are intended by the writer to evoke discussion, *whether or not they actually succeed in doing so* (Garrison, 2002; Garrison, Anderson, and Archer, 2000; Garrison, Anderson, and Archer, 2001). The characteristics of postings which succeed in triggering responses, as compared with those which fail to do so, was the focus of this inquiry.

Purpose

This report briefly summarizes the findings from the thesis *Trigger Analysis in Computer Mediated Conferencing* (Poscente, 2003). This study explored the frequencies and characteristics of *trigger postings* in asynchronous CMC conferences in a moderated, graduate-level, online course environment. The study focused on observing, identifying, and describing patterns in *true triggers* and *true duds*.

True triggers and *true duds* were identified by a combination of two assessments: 1) responses to the posting by other CMC participants (the number of replies received; and 2) the apparent intentions of the writer (revealed by internal evidence, such as the presence in the post of questions, new issues, or provocative statements). True triggers were defined as postings which included both internal evidence of intending to trigger interaction (by asking questions or attempting to take the discussion in a new direction), and of actually doing so (receiving 4 or more responses). True duds, on the other hand, were postings which, though apparently intended to trigger interaction (as above), failed to do so (received no responses). Once identified, *true triggers* and *true duds* were scrutinized for any *structural* or *communication patterns* that might distinguish them.

Method

The study analysed the redacted (identifying personal information removed) text transcripts of the complete CMC conferences from two Athabasca University (AU) 13-week Master's of Distance Education courses (AU 1 and AU 2), and one three-week professional training course from a non-degree granting Alberta post-secondary institution (the "non-AU" group). The non-AU course was part of a professional development program for online instructors. Conferences in the Non-AU course were three weeks in length and all were open concurrently. The moderator and students of the non-AU course had little prior experience with CMC.

The Athabasca University courses were both from the Masters of Distance Education (MDE) program, and were beyond introductory level. Conferences in the AU courses ran sequentially over the 13 week course, both AU moderators were experienced CMC facilitators, and the students had prior CMC experience. Students in both courses were mature learners, and were employed as teaching or training professionals. The average age of the Athabasca MDE students involved was 44 years (this information was not available for the non-AU group).

The *TAT* model (see below) was used to code each of the three course transcripts at the sentence level (Fahy, 2001; Fahy, 2002a; Fahy 2002b), while *cognitive presence* criteria were used to code each message as a trigger, reflection, integration, or resolution event (Garrison et al., 2000; Garrison et al., 2001). The number of responses received by each message was also recorded. *ATLAS.ti* software was used for recording, categorizing, and statistical analysis of the coding.

The "Transcript Analysis Tool" (TAT) is a means of categorizing interaction in an online conference transcript by designating each sentence as one (or, as required, more than one) of the following (Fahy, Crawford, and Ally, 2001):

1. Questions (type 1A, *vertical*; type 1B, *horizontal*)
2. Statements (type 2A, *non-referential*; type 2B, *referential*)
3. Reflections
4. Scaffolding/ engaging
5. Quotations/ citations (type 5A, *quotations* and *paraphrases*; type 5B, *citations*)

Reliability of the TAT tool was addressed by a code-recode process: each conference was coded by two individuals; coding disagreements were identified, discussed, and resolved to obtain a joint coding, which became the final TAT result. The percent agreement between *TAT* coders ranged from 75 percent to 99 percent and kappa values (Cohen, 1960) were 0.62 to 0.93. A similar code-recode process was used to test the reliability of the coding using the *cognitive*

presence model. Cognitive presence agreement between coders ranged from 84 percent and 95 percent (kappas were 0.65 and 0.72).

Results

The results of the analysis consisted of three key findings about true triggers: 1) triggers were associated with open-ended questions; 2) experience and maturity of the Community of Inquiry appeared to influence student responses to triggers; and, 3) moderator behaviour appeared in one circumstance to be mirrored by the students.

The presence of open-ended or horizontal questions (T1b) was the only TAT indicator that distinguished true triggers from other messages. Horizontal questions (T1b) occurred almost four times more often in true triggers than in other types of messages. In horizontal questions, "there may not be a correct answer of solution; thus, others are invited to help provide a plausible or alternate answer, or to help shed light on the question" (Fahy, 2002a).

There was some evidence that the frequency and occurrence of true triggers could be related to the level of CMC experience and, thus, the maturity of the online community. This observation was based on the variation in the frequency of true triggers amongst the courses. Even considering the shorter course length, the transcript of the non-AU course contained far fewer true triggers than did the AU courses. (The occurrence of true duds was rare in all courses, and there was no significant difference amongst the courses.) While the effect of experience in online interaction clearly requires further exploration, the finding that less experienced CMC users generated fewer true triggers in their postings is noteworthy.

Other differences included the nature and duration of the AU and non-AU programs. While the education levels of the students were similar, the AU courses were more academic, in that AU courses were part of a graduate program, whereas the non-AU course was a professional development program. The durations of the individual conferences were comparable, but, as noted above, the non-AU course was much shorter than the AU courses (3 weeks, versus 13 weeks).

The moderator behaviour, which may have been reflected by the students, was incidentally observed when moderator and student messages were examined separately. The AU 2 instructor was the only moderator to use citations (T5a) and quotations (T5b) in his true triggers. The AU 2 moderator's use of references (TAT type 5 sentences) coincided with a higher frequency of citations (T5b) in his students' postings. Further research is needed to determine the interaction of online moderator modelling and subsequent student behaviour.

Discussion

The nature of initial messages, which trigger cognitive discussions in CMC, was investigated with two different text analysis approaches: the TAT (at the sentence level), and the Community of Inquiry model (at the message level). This study confirmed the importance of open-ended questions for initiating discussion: asking questions that invite discussion was found in this study to result in more responses from other participants.

Open-ended questions, however, may not be the only factor contributing to triggers. Observed differences in frequency of true triggers amongst the courses suggest that the maturity of the

community may play an important role in how or whether participants respond to triggers. Students and moderators need time to familiarize themselves with the potentially intimidating text-only medium. Absence of non-verbal cues slows development of the interpersonal component of online interaction (Walther, 1996). Social presence is essential to the Community of Inquiry, but requires time to develop and mature (Anderson, Rourke, Garrison, and Archer, 2001; Archer et al., 2001; Garrison et al., 2001; Garrison et al., 2000; Garrison et al., 2001; Rourke, Anderson, Garrison, and Archer, 2001). In online communities, the interpersonal component will develop eventually, but it will take longer and require more diligence from participants. Triggers are the means by which the participants build this component of their online community.

The moderator's role in modelling appropriate behaviour may have been seen in the study, and deserves further investigation. If it can be shown that moderators are able to model the behaviour they hope to see reflected in student interaction, both cognitive and social presence objectives may be effectively promoted with CMC.

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