

GETTING A RESPONSE TO DISCUSSION THREAD MESSAGES IN AN ONLINE LEARNING ENVIRONMENT

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Abstract

One of the challenges of using discussion forums in a computer-mediated learning environment is getting students to contribute. Some discussion threads develop while others do not. The present study concerns factors affecting response rate. This presentation deals with response patterns and the strategies that teachers and students may consider using in order to increase the chance of getting a response to a message posted in an asynchronous discussion forum.

Introduction and Aims

From a collaborative learning perspective, online discussions are well suited because they involve a kind of interaction similar to face-to-face communication in that many messages are short and there may be responses within a relatively short time. Relatively brief bursts of language is “one of the most noticeable and consistent properties of casual spoken language” (Chafe & Danielewicz, 1987, p. 94). Patterns of usage are similar to speech in some respects but not in others (Yates, 1996). The similarities to speech may give an impression of casualness and this in turn may make participants feel less anxious and more likely to participate in text-based computer-mediated interaction than classroom interaction (Kelm, 1992). Studies also show that students tend to participate more, take more initiatives and interact more with one another in online discussions than in traditional classroom discussion where the teacher often dominates the discourse (Chun, 1994; Kern, 1995; Warschauer, 1996). One of the challenges for teachers is to get students to contribute to discussions and benefit from the practice. The mere existence of a discussion forum is no guarantee interaction will occur, however. Some discussion threads develop extensively while others do not.

The aim of the present study is to determine what factors seem to affect the choices made by students and instructors regarding which messages they respond to. The content of the responses is examined to see if it is possible to determine what it is that prompts a response, that is, what reaction the previous message invokes.

Material and Methods

The material gathered for this study comes from an undergraduate course in English literature at tertiary level in Sweden in 2009. The students studied exclusively online, alternating real time online seminars with asynchronous discussions. Active participation was obligatory for both. Altogether there were four groups, one with instructor A and three with instructor B. There were four online discussion forum topics for each group based on four different literature texts. Instructor B's three groups used the same forum for the first topic, but for the subsequent three topics, instructor B's three groups each had separate forums (see Table 1 for overview). There were a total of 14 separate forum discussions and in each of them there were multiple discussion threads. In this paper, the following terms will be used when describing discussion threads. To be able to talk about the complexity of a thread the terms *breadth* and *depth* are used. Breadth refers to the number of messages posted as a response to a particular message at one level and depth refers to the number of levels of responses. A thread with depth has responses to responses at many levels but may also have breadth at some levels if multiple responses were posted at a certain level. Messages posted as thread-initiating messages are said to be posted at Level 1. Responses to these are posted at Level 2 and responses to the Level 2 messages are at Level 3 and so on.

The learning management system (LMS) in which the online discussions took place was called *Fronter*.¹ The way the forums were set up was that the instructors started by creating a forum for a topic and group and posting initial instructions. The students were required to post at least one thread-initiating message and at least two responses to other messages. This had to be done within four days of the forum opening. The thread-initiating messages were the students' reflections on specific questions about the given text and students were free to decide which messages they responded to and the form and content of their response.

A number of methods were used for the analysis. Initially, a number of non-linguistic features were examined, such as when in the forum and where in the thread the message was posted, how long the message was, who posted the message and how many opened the message to read it. Next, a simplified content analysis of the instructor messages was done based partially on Mazzolini and Maddison (2007). The messages were grouped into four categories depending on whether they contained questions, answers, a combination of both, and finally other. A fifth category was added, namely messages that contained evaluative comments. Initial examination of the student responses revealed that the categories used for examining instructor messages were insufficient to use on student responses. Instead, the categories were devised inductively, and the five

¹ More information on Fronter can be found at <http://uk.fronter.info/>

categories used in this study are personal reactions, agreement, disagreement, both or other. In addition to the messages examined, data used in the present study include a participant questionnaire on response behaviour in the discussion threads.

Background

Some discussion threads never get past the thread-initiating message, and for those that do, previous studies of online interaction have shown that over time, the number of messages posted declines (Herring, 1999). A study by Lamy and Goodfellow (1999) found that some thread-initiating messages developed into complex threads with multiple messages while others did not. They suggest a number of reasons for lack of response. One is the fact that the message may not have been read, depending on where it appears on screen. Other suggestions for postings not getting responses were lack of explicitness or the fact that messages were addressed to no one in particular, even though they contained direct questions (p. 53). Lack of response is difficult to analyse because there is nothing there to analyse. It can be a sign of communication breakdown or reflect a desire not to respond. There can also be practical and technical reasons for lack of response, such as lack of time or problems with the computer or the Internet connection. In face-to-face communication, non-responsiveness or silence has a disruptive effect and Kalman et al. (2006) emphasize the need for more studies on how lack of response affects communication in an online environment, as there is evidence that being ignored has a stressful effect on participants in online communication such as gaming and chat. On the other hand, participants may have different expectations when it comes to online communication, compared to spoken interaction. In asynchronous written computer-mediated communication (CMC), in particular e-mail, there is less obligation for participants to reply within a certain time or even to reply at all, as participants do not feel bound by social constraints (Baron, 2000, p. 235). However, responding quickly can be an important signal of “immediacy, care, and presence” (Kalman et al., 2006). In their study, Kalman et al. observed that responses that were given after a relatively long time had elapsed tended to contain apologies and explanations for the delay. For a discussion forum the average response latency was within 24 hours. This would indicate that in CMC relatively rapid responses are expected to a certain extent. Participants in one study confirmed that they missed feedback such as challenges to their claims and requests for clarification, but also the visual affordances that would be available in a face-to-face context (Hammond, 2000, p. 257). Not getting a response can lead to a sense of not belonging to a group, whereas both negative and positive replies have a positive effect on willingness to participate (Himmelboim, 2008, p. 161).

Influence of Instructor

Instructors in a learning environment might be expected to enjoy a higher status and therefore be read more and get more responses. The volume and frequency of

their participation may also affect the quality and quantity of the student interaction. One study by Gorsky and Blau (2009) on the impact of teaching presence compared two instructors, one held in high esteem by the students and the other not. Gorsky and Blau concluded that teaching presence was important for cognitive presence — that is for the students to feel engaged in the learning. One of the factors they looked at was the response time of the instructor. The instructor that had a median response time of just over three hours to the students' postings was highly regarded while another instructor with a median response time of more than 26 hours was held in low esteem (p. 15). They also looked at social and teaching presence and found that there was a significant relationship between these and the participation of the students (p. 17). Whether or not and in what way the volume and frequency of the instructors' responses is related to student satisfaction is not clear. However, Gorsky and Blau's (2009) study showed that too little activity from the instructor seems to result in dissatisfaction among the students. A positive attitude to frequent responses by the instructor was attained in another study which showed that students rated instructors who posted more frequently as being "more enthusiastic and displaying greater expertise" (Mazzolini & Maddison, 2007, p. 203).

Infrequent posting by an instructor may not necessarily mean the instructor is "dysfunctional", however (Gorsky & Blau, 2009, p. 14). Although students may perceive instructors who post frequently as being expert and enthusiastic, Mazzolini and Maddison (2007) also observed that the more instructors posted, the less often students posted and also that the discussion threads were shorter. They suggest that well thought out postings from the instructor may help learning despite the fact that the rate of student posting is reduced. It may not be just a matter of how many or how often an instructor posts messages, but the kind of messages they post that is relevant. They looked at the types of messages posted and found that 68% of instructors' postings were answers, while only 12% were answers with follow-up questions (Mazzolini & Maddison, 2007, p. 206). A large volume of messages in a forum is not necessarily an indication of how well the discussion is going and conversely, fewer student postings and shorter threads are not necessarily an indication of a deficient learning environment (Mazzolini & Maddison, 2007).

Types of Messages

Whether a direct question prompts a response or not has not been clearly established. With regard to the effect of questions in a message, Lamy and Goodfellow (1999, p. 54) found that messages containing implicit questions did not get replies and they suggest that perhaps more explicit markers are needed in CMC interaction. Similarly, whether the instructor posted questions, answers or a combination of both had little effect on how students experienced the postings (Mazzolini & Maddison, 2007, p. 211). Explicit questions do not necessarily result in responses referring to that message. It may not be the question itself that provokes a response but how that question engages the student. It has been suggested that "self-sustaining threads arise in response to questions deemed

worth asking by the learning community, but these questions may not necessarily coincide with those deemed worth asking by the teacher” (Lamy & Goodfellow, 1999, p. 57).

Using the number of messages which reference another message as a measure of how “good” the message was Berthold et al. (1997) found a number of features that these messages had in common. Firstly, they concluded that it is much easier to build on an existing thread than try to start a new one (Berthold, et al., 1997, p. 15). They also concluded that a “good” message, that is, one that is referenced a lot, had a medium length of 11–25 words of original text. This means that the messages might be longer but they contained quoting or copying and pasting. The referenced messages also contained a statement of fact, and did not contain questions or requests. The messages that were referenced a lot also had an appropriate subject line and addressed another person (Berthold, et al., 1997, p. 13). Rafaeli and Sudweeks (1997) showed that more than half of the 2269 messages investigated in their study contained references to other messages and one third of them quoted other messages. On the whole they found messages to be mainly factual, conversational, agreeable, and supportive, and many contained attempts at humour. More than a third of the messages also contained personal content.

One reason for threads not developing, as suggested by Lamy & Goodfellow (1999, p. 54), is poor discourse coherence. They also believe the participants need the competence to be able to produce interactive discourse, which means taking into consideration what precedes and what follows (Lamy & Goodfellow, 1999, p. 54). However, expectations of what constitutes coherence online might not coincide with expectations of coherence in traditional face-to-face interaction. One study comparing perceptions of coherence in oral conversation with written online conversation found that participants perceived oral conversation as coherent when turn-taking and immediate feedback functioned. Features such as connecting comments to previous messages or reference to previous knowledge or experience were what the participants felt made written online conversation coherent (Schallert et al., 1996, p. 480). Another researcher also noted that many of the devices used for coherence in online written discussions were actually from written conventions and not from conversation (Lapadat, 2007, p. 75).

Strategic Choices

In forums where there are many messages, participants may feel there is too much information to manage, which forces them to make strategic choices. Participants in such forums are more likely to read and respond to short messages than longer and more complex ones, and they tend to produce simple and short messages themselves (Jones, Ravid, & Rafaeli, 2004, p. 205). Similar findings are reported by Himelboim (2008) who identified two strategies for coping with too many messages. Firstly, it was found that participants were more likely to respond to simple messages, and secondly that participants tended to choose a few popular participants to respond to (Himelboim, 2008, p. 163). Himelboim’s study also

showed that the more one contributed to the group, the more one received replies (p. 168). The topic of the discussion also seemed to influence the number of replies, meaning that some topics were more popular than others (Himmelboim, 2008, p. 172; Zhao & McDougall, 2008, p. 69). Apart from too many messages other factors such as uncertainty or personal time constraints can also affect the number of responses and Zhao and McDougall (2008) found that the students in their study tended to write messages in threads where many others were posting and also to respond to opinions that they disagreed with.

Results and Discussion

The material in the present study consisted of 14 discussion forums, each of which was open for a maximum of three days. A total of 168 messages were posted as thread-initiating messages and of these, 138 received at least one response. Of the 138 messages that received at least one response at Level 2, that is, a response to the thread-initiating message, 63 threads continued to a depth of at least Level 3. This means that many responses in turn received their own responses. A survey of the quantitative part of the study is presented in Table 1.

Table 1: Overview of Discussion Forums and Number of Messages

Group	Forum topic	Instructor	No. of students	No. of messages	Frequency % instructor messages	Volume % instructor words	Average total messages/student	Response / student	Average words/message
L1	1	A	15	57	19.3	10.4	3.1	2.1	228
L1	2	A	16	69	21.7	12.9	3.4	2.4	224
L1	3	A	16	58	25.9	8.5	2.7	1.7	341
L1	4	A	13	44	6.8	3.7	3.2	2.1	328
L2,L3,L4	1	B	27	184	33.0	22.6	4.6	3.9	82
L2	2	B	7	36	36.1	10.2	3.3	2.0	217
L2	3	B	7	31	35.5	8.1	2.9	1.1	243
L2	4	B	4	10	10.0	5.0	2.3	0.8	264
L3	2	B	16	103	34.0	17.5	4.3	3.3	144
L3	3	B	13	76	31.6	10.4	4.0	2.9	166
L3	4	B	13	56	28.6	8.3	3.1	2.2	151
L4	2	B	5	20	25.0	11.4	3.0	1.8	200
L4	3	B	4	17	17.6	6.8	3.5	2.0	185
L4	4	B	5	18	0	0	3.6	2.4	217

As can be seen from Table 1, the two discussion forums with more than 100 messages were the ones that also averaged relatively short messages. This trend is in line with the findings of Himmelboim (2008) and Jones et al. (2004). Interestingly, these same forums also had the highest average number of responses posted per student. However, the relationship between message length

and response rate is not straightforward as can be seen from Table 1. The discussion forum with the shortest average words per message and the most messages per person and highest number of responses per student is forum topic 1 for groups L2, L3 and L4. This forum had 184 messages in total, which is the largest total number of messages. In addition, this forum also had the most complex threads with regard to breadth and depth, that is, multiple responses at different levels and many levels of responses.

Instructor B's messages made up 28 % of the total number of messages in all discussion forums he participated in while instructor A's messages made up around 18% of the total number of messages in the forums where she posted a response. Instructor B often responded to student responses as well as to thread-initiating messages while Instructor A responded almost exclusively to thread-initiating messages. Instructor B's input comprised around eleven percent of the total number of words, while instructor A's input comprised nine percent of the total number of words for group L1. There was a slight tendency for response rate to increase as instructor input decreased for the discussion forums for group L4, whereas the tendency for response patterns in groups L2 and L3 discussions was that response rates decreased as instructor input decreased. Generally, the volume and frequency of instructor input in the fourteen forums does not seem to affect student response rate in the way Mazzolini and Maddison (2007) observed.

Group L1 appeared to compose longer messages for all discussions compared with group L3, despite the fact that the number of students participating was similar (see Table 2). However, the length of responses between all four groups was quite similar, with the average number of words per response ranging between 115 and 147 words. A striking difference between groups was found for the thread-initiating messages; messages posted by members of group L1 tended to be 200 words per message more than for groups L2, L3 and L4. The reason why the latter were shorter may be because Instructor B posted an example of a thread-initiating message and a response at the beginning of the first forum, both of which were relatively short, 119 and 93 words respectively. There does not seem to be any correlation between the topic of the forum and the response rate for students, but the volume of instructor input decreased for each forum discussion, and for the fourth topic for group L4 there was no instructor input.

Table 2: Average Message Length for Groups and Instructors

	Group L1	Group L2	Group L3	Group L4
Average words per thread-initiating message	677	478	437	347
Average words per instructor response	136	83	83	81
Average words per student response	115	145	115	147

It seems that how early in the thread a message was posted had an effect on response rate so that messages posted early in the forum had a better chance of getting a response than those posted towards the end. Of the thread-initiating

messages that did not receive a response, the majority were posted among the last messages in the discussion forum. Conversely, messages posted early in the discussion forum were more likely to be read and more likely to receive multiple responses. All messages were organised chronologically in the discussion forum with the earliest one displayed highest up on the screen when the forum was opened. Half of the respondents to the questionnaire reported that they read the messages at the top of the screen first and then down through list of messages. Some reported using several strategies in combination with reading top down, such as looking specifically for the instructor's response, interesting subject lines or certain student's messages. With regard to coherence and interactive discourse, most response messages connected in some way to other messages either explicitly or implicitly, but it is not possible to say if this connectedness affected response rate.

With regard to the categories of the responses, both instructors tended to give evaluative feedback in the majority of messages. Instructor A used *good* a total of 41 times, often in collocations such as *good analysis* and *good point*. Of the 41 instances of *good*, 21 were pre-modified by *very*. The total number of words used by Instructor B was double that of instructor A and here *good* was used 90 times; 24 of these were pre-modified by *very* and a common collocation was *good job*. For both instructors, the most common response was evaluative feedback in combination with direct questions encouraging the students to develop ideas further. Sometimes these received a response but not always. If they did get a response, it was mostly the student who had written the thread-initiating message and got an instructor response that continued the "dialogue" by responding to the instructor's response in turn. Consequently, these threads developed in depth but not in breadth. Sometimes other students joined in, and the threads could grow in both depth and breadth. It was rare that instructors answered questions but the reason for that is most likely due to the purpose of the forum.

The students' task was to answer specific questions about the text and respond to each other. Instructor A did explain difficult literary concepts when a student was having difficulty understanding them even if the student did not request help explicitly. For group L1 it was noted that thread-initiating messages posted toward the end of the forum tended to get feedback from the instructor that was encouraging, but which also pointed out weaknesses in their analyses or interpretations, suggesting that perhaps weaker students postpone their input.

Aside from messages that were posted early, it was messages that aroused some personal emotion which received the most responses. These emotions could be negative or positive, that is, the person responding would agree or disagree with what had been written. In total, only 17 messages generated at least four responses at the next level and these responses were overwhelmingly positive and enthusiastic. It was common for students to give each other evaluative feedback and describe what others had written as *interesting* and *good* and refer to how it made them think about something or reflect on something in a new way. They

also used mental verbs such as *like* and *enjoy* when referring to how they felt about the content of another person's message. These verbs are typically used to express such things as emotion and cognition according to Biber et al. (1999, p. 362). Even if students disagreed with another's opinion, they usually began the message with positive feedback on some aspect of the message and then continued with a contrastive device such as *however* to introduce an opposing opinion. Sometimes they ended the response with another positive comment.

The combination of agreement and disagreement in the same message may have to do with the fact that students did not want to be unkind to one another. More than half of the students who answered the questionnaire reported that they thought "it was important to be kind and friendly to other students." The students who completed the questionnaire reported writing responses to messages that were "provocative" or "thought provoking," "interesting ones" and ones that they agreed with or did not agree with and ones that they got excited about. They would also respond to messages that made them see things from a different perspective, made them think or explained things for them, and the majority reported "learning a lot from what other students wrote." Some also reported that they responded to a message if there was a question that they could answer. The questionnaire results seem to be in line with the observations made about the content of the messages, that is, there are indications of cognition and emotion involved in the process of writing a response. Nearly all respondents reported that the asynchronous nature of the discussion gave them time to think before posting their response.

Two individuals received more responses than other students, one in group L1 and one in group L3. They had three thread-initiating messages each which resulted in at least four responses at the next level. However, these two students also had a tendency to post their messages within the initial three messages in the forum which may have been the most influential factor. Student messages often contained question marks which initially appeared to indicate questions. However, on closer reading, they were tentative statements often begun with a hedge such as *couldn't it be*, *I wonder if*, *perhaps* or *maybe*. The question mark was used to denote tentativeness about their opinions or interpretations.

Conclusions

The trends observed in the present study are in line with the findings of Jones et al. (2004) in that when discussions involve many participants and messages, the messages tend to be shorter. The relationship between instructor input and student input appears to be a complex one and more research is needed on participants' expectations and group dynamics as well as message content and purpose of the discussion forum. Mazzolini and Maddison's (2007) study showed that the more the instructor posted, the less frequently the students posted, but other factors may also have influenced response rate. Even if we can see that arousing emotions

makes students respond, it may be difficult to predict what kinds of content will cause a reaction. In a number of instances in the present study, the response was related to personal experience, memories or beliefs and it is difficult to know the personal backgrounds of all students if we want to use this. The present study indicates that posting early in the forum increases the chance that the message will be opened and read and receive a response. It also appears that clear instructions and demands on the students as well as examples of messages may influence the way students use the forums to a certain extent. It also seems that emotions need to be aroused to get students to respond, so choosing topics for discussions that people feel strongly about is one possible way of prompting others to respond. Groups made up of those likely to have different opinions on a topic may also increase activity. Discussion forums, although asynchronous, are conversation-like and interactive in nature and therefore shorter messages may be more likely to be read and get responses if interaction is the goal of the discussion forum. However, little interaction in a forum should not necessarily be interpreted as an unsuccessful learning environment. More research is needed on the ways in which learning benefits from asynchronous online discussions

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