

The Relationship of High School Student Motivation and Comments in Online Discussion Forums

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Abstract

Online discussion forums are common features in many educational settings. Whether in face-to-face classrooms, in hybrid settings, or in fully online courses, students typically are required to post discussions about course content and are sometimes instructed to comment or reply to one another's discussion posts. The purpose of this study was to better understand the relationships between students' commenting activities and motivation to learn. Specifically, this study examined the relationship between the quantity and perceived quality of students' online comments and the following motivational factors: sense of relatedness, perceived competence, interest–enjoyment, and value–usefulness. Participants for this study were seventy 12th-grade students enrolled in three intact sections of an AP English and Composition class taught at a private high school in the Western United States. The discussion posts and comments were composed on <http://youthvoices.net>. This study found that while the quantity of comments received was related to two motivational factors, the quality of the comments received was related to all four motivational factors measured. Furthermore, the findings presented here identify the traits of comments that students found most valuable. Results from this study may help inform efforts to guide instructors interested in better structuring discussions in online learning communities that enhance students' motivation to learn.

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Introduction

A common practice in many educational settings is to have students engage in online discussion forums. Researchers have cited numerous benefits to having students participate in online discussions: They create more equitable participation (Harasim, 2000; Zhu, 2006), allow more time for reflective comments (Hiltz, 1986), facilitate knowledge co-construction and higher level thinking skills (Garrison, 1992; Gunawardena, 1998; Henri, 1992; Hull & Saxon, 2009; Newman, Webb, & Cochrane, 1995), and lead to group problem solving (Beckwith, 1987; Levin, Waugh, & Miyake, 1988; Weinberger & Fischer, 2006).

Research has shown that the social context of learning environments can influence motivation, resulting in some students being more energized and integrated into the learning environment more than others. Deci and Ryan's self-determination theory (SDT) concerns itself with the design of learning environments that optimize people's development, performance, and well-being. Deci and Ryan (2000) found that three psychological needs are the basis for students' self-motivation: relatedness, competence, and autonomy. Contextual support from others is also a key concept in SDT; according to Chen and Jang (2010), the notion of contextual support is especially valuable, as "online learners need a variety of support from instructors and peers" (p. 742). In addition to the needs described in SDT, two other needs that influence motivation have also been identified: value (Brophy, 2008; Wigfield & Eccles, 2000) and interest (Hidi, 2006; Pressley, El-Dinary, Marks, Brown, & Stein, 1992; Schraw, Flowerday, & Lehman, 2001; Sweet, Guthrie, & Ng, 1997). These researchers found that students whose motivational needs are well supported have more interest, excitement, and confidence in learning activities, which in turn is manifested as enhanced performance, persistence, and creativity. However, the converse is also true. Deci and Ryan found that failure to provide motivational support can thwart these needs and can contribute to alienation. Juvonen (2006) claimed that learning environments in which students feel disconnected do not motivate them to work hard. Baumeister and DeWall (2005) found that threats to belonging (or relatedness) can impede cognitive performance.

Despite the body of research that has touted the benefits of online discussion and a long tradition of research on motivation, Chen and Jang (2010) found that few studies have explored the relationship of motivation and online learning in

general, and with the exception of Xie, Debacker, and Ferguson (2006), even fewer still have explored how motivational factors like SDT are related to online discussion.

Since the practice of having students participate in online discussions is becoming an increasingly significant part of many learning environments, this study investigates how the quantity and quality of comments in online discussions relate to four motivational perspectives: relatedness, perceived competence, interest–enjoyment, and value–usefulness. The study also explores the traits of effective classroom discussion.

Relatedness

Deci and Ryan (2000) argued that many of the activities students are required to engage in at school are not intrinsically motivating. The reasons students still engage in these activities, however, are because these behaviors are modeled or valued by people whom students feel attached to or related to (e.g., teachers, peers, and parents). This relatedness, or this need to feel connected with others, is of central importance for the internalization of extrinsically motivated behavior. Connell and Wellborn (1990) claimed that relatedness, or the need to experience oneself as worthy and capable of love and respect, is a basic human need. In a construct similar to relatedness, Juvonen (2006) argued that the need for belongingness affects student behaviors in ways that in turn influence their ability to form and maintain relationships in school. The constructs of relatedness and belongingness both reflect the need to form positive associations with significant others.

Relatedness, or belongingness, theories hold that students' motivation to learn increases if students feel that they are valued by their learning community. Support from friends and peers have all been found to promote higher levels of motivation, involvement in the classroom, and academic achievement (Van Ryzin, Gravely, & Roseth, 2009). Baumeister, Campbell, Krueger, and Vohs (2003) found that students need to develop significant and positive relationships with their teachers and peers; if these needs aren't met, students will experience a decrease in motivation for learning and other maladaptive behaviors. According to Juvonen (2006), "the underlying assumption is that environments characterized by caring and supporting relationships facilitate student engagement and other adaptive school behaviors. Consequently, motivation and achievement are presumed to be undermined when students feel unsupported and disconnected from others" (p. 655).

Although Xie et al. (2006) examined self-determination in relation to online discussion, they did not study the construct of relatedness specifically. However, it is possible to deduce from motivation research that students who do not feel a sense of belonging or relatedness to others in online forums may experience the negative outcomes that Deci and Ryan describe.

Perceived Competence

The internalization of extrinsically motivated activities is also a function of perceived competence. “People are more likely to adopt activities that relevant social groups value when they feel efficacious with respect to those activities” (Ryan & Deci, 2000, p. 240). SDT holds that students’ positive beliefs about their capabilities enhance motivation. In a similar construct, Bandura (1982) defines self-efficacy as “belief in one’s capabilities to organize and execute the course of action required to produce given attainments” (p. 3). Students with high academic self-efficacy perception tend to show greater interest in learning tasks, set higher goals, put forth greater effort, and are less vulnerable to setbacks. Following Ryan and Deci (2000), this study defines the terms *perceived competence* and *self-efficacy* as equivalent constructs.

With regard to online discussion, Xie et al. (2006) found no relation between students’ perceived competence and participation in online discussion. However, Chen and Jang (2010) question the conclusions of Xie et al. since the “competency defined in their study seems incomplete. The authors merely used computer or Internet skills as the competency measure; however, for online discussion competency may also include other aspects such as communication and metacognitive skills.” Chen and Jang found that “supports of autonomy and competency positively affected online students perceived autonomy, relatedness, and competency, the satisfaction of the three basic needs [of SDT]” (p. 750).

Value: Usefulness and Interest

An individuals’ choice, persistence, and performance can be explained by their beliefs about how well they will do on the activity and the extent to which they value the activity (Atkinson, 1957; Eccles, 1983; Wigfield & Eccles, 1992). In this study, two constructs of the value aspects of motivation were examined—usefulness and personal interest (Wigfield & Eccles, 2000).

According to Wigfield and Eccles (1992), “the construct of usefulness or utility value” refers to how a task fits into an individual’s future plan. For example, if students plan to become lawyers, then improving their argumentation skills in a high school English class will likely have a high-utility value because they might logically assume that this skill will allow them to do well in law school and in their careers. If students do not perceive the assigned writing as useful either in the present or to their futures, then the value of doing the work necessary to succeed in English classes may be too low to motivate their effort. Deci and Ryan operationalize this concept as value–usefulness in their Intrinsic Motivation Inventory (IMI).

The construct of personal interest holds that promoting interest in the classroom increases students’ intrinsic motivation to learn and the number

of learning strategies they use to do so (Pressley et al., 1992; Sweet et al., 1997). Deci and Ryan operationalize this concept as interest–enjoyment in the IMI. Hidi (1990) identified two types of interest: situational and individual. Situational interest is spontaneous, transitory, and environmentally activated; individual interest is a result of long-term experiences with a topic or domain and is much more permanent. Situational interest often precedes personal interest. Schraw et al. (2001) argue that three general strategies increase situational interest in the classroom: (1) carefully selecting well-organized texts, (2) offering students meaningful choices, and (3) helping students access appropriate background knowledge about the text and task. Additionally, Schraw et al. (2001) argue that there are three text factors that increase situational interest in the classroom: coherence, relevance, and vividness. Coherence refers to the informational and organizational completeness of a text. Relevance refers to text segments that affect the reader’s purposes and goals for reading and is familiar. Means, Jonassen, and Dwyer (1997) believed that relevance was also achieved when the teacher added comments that connected text segments to readers’ lives. Vividness refers to text segments that stand out because they create suspense, surprise, or are otherwise distinctive. Deci and Ryan operationalize these concepts as interest–enjoyment in their IMI.

Brophy (2008) argued that value aspects should also include students’ appreciation for what is taught in school. Brophy took issue with the common assumption that students are motivated to pursue an interest for “its own sake” instead of arguing that students should be encouraged to engage in topics that they find interesting “for our own sake.” In this way, Brophy argued that the motivation to learn needs to be fostered as an enduring disposition.

Xie et al. (2006) contend that students’ participation was related to their intrinsic motivation and “low levels of participation can erode the quality of discussion” (p. 68). They found that most students believed that quality feedback and peer interactions in the online discussion were an important factor that could influence their motivation to participate in the discussion: “with instructor emphasis on the value of online discussion, explicit course requirements, and active participation in the discussion, students perceive the online discussion as valuable and interesting, and will persist in participating” (p. 20). By interacting with peers, students could see many different opinions, especially on controversial topics. According to the researchers, the fact that there were different voices in the discussion raised their interest in the discussion. The student interviews that took place during the Xie et al. study indicated that peer interactions in the online discussions contributed to their positive attitude. However, while the study by Xie et al. focused on students’ motivation to participate in discussions, this study focuses more on students’ motivation to learn, in a broader sense.

Classroom Discussion and Peer Commenting

Research on classroom discussion has shown that certain qualities (whether face to face, hybrid, or online) lead to gains in achievement. For example, in his study of face-to-face classroom discussions, Nystrand and Gamoran (1991) found that achievement on district-administered writing tests increased in classes that used authentic questions, open discussion, and *uptake* (which is defined as when students respond to each other during classroom discussion rather than solely to the teacher's questions). Applebee, Langer, Nystrand, and Gamoran (2003) found that "students whose classroom literacy experiences emphasize discussion-based approaches in the context of high academic demands internalize the knowledge and skills necessary to engage in challenging literacy tasks on their own (p. 685)."

Hara, Bonk, and Angeli (2000) contend that peer feedback in online discussion forums can benefit students cognitively through rich interactions with *peer referencing*, (which is defined as when students make explicit references to points made in other students' discussions). Xie et al. (2006) examined motivation and participation rates. These studies support the view that peer discussions may enhance achievement and student motivation to participate; however, these studies shed little light on how online peer comments influence student motivation specifically. The author found no studies that focused on the traits that students found most valuable in their peers' comments.

Purpose

Online discussion forums are increasingly becoming common features in educational settings. Participants are required to post discussions about course content and are often instructed to comment on one another's discussion posts. Despite this common feature, little research has been done that explores the relationship of comments and students' motivation to learn. The purpose of this study was to examine how the quantity and perceived quality of the comments students received on their Youth Voices discussion posts relate to motivational outcomes (relatedness, perceived competence, interest–enjoyment, and value–usefulness). This study will also attempt to identify the traits, or qualities, that the students value in the comments they receive.

Results of this study have several potential implications for educators. Brophy (2008) argued that teachers need to foster students' appreciation for what they are learning in school. Determining the traits of the comments that students value has implications for educators who have their students participate in online discussion forums. Such findings could provide guidance for participants to be valued members of their learning communities by instructing them to provide the types of comments that students find most valuable. Similarly, exploring the relation of the quantity of comments and student motivation

might help educators consider the amount of comments they should have their students contribute to online discussions.

Research Questions

This study was guided by three overarching research questions that explore the connection between students' motivation and their participation in online discussions at Youth Voices (youthvoices.net).

1. How does the quantity of comments students receive on their online discussion posts relate to students' sense of relatedness, perceived competence, interest–enjoyment, and value–usefulness?
2. How does the quality of the comments students receive on their online discussion posts relate to students' sense of relatedness, perceived competence, interest–enjoyment, and value–usefulness?
3. What traits are valued most by the students in the comments that they receive?

Method

Participants

Students in three sections of an AP English Language and Composition course participated in this study. Seventy-one 12th-grade students were enrolled in the class: 25 males and 46 females. Primarily middle-class, college-bound students were enrolled in a private school in a Western state. One student was unable to complete the survey, but the remaining 70 of the 71 students in the class completed the survey. Students participating on Youth Voices (youthvoices.net) at the time of this study in the 2012–2013 academic year were from the states of New York, Utah, Texas, Michigan, Wisconsin, Colorado, California, New Jersey, Louisiana, and North Dakota.

Context

Youth Voices is a school-based social network that was started in 2003 by the author and a colleague from the National Writing Project. The site is a place where students from local writing projects from across the United States engage in conversations about their online compositions with other young people.

Based on the computer availability at the school, access to the Youth Voices Web site was available only on 12 different class periods in which students created at least 12 discussion posts and at least 12 comments on other students' posts. The Youth Voices activities amounted to roughly 15% of the course's total contact time and accounted for 15% of the students' final grade. Whenever

students created a discussion post, they were also instructed to make a comment on another student's discussion post. Each discussion post activity was designed to be completed in a 90-min block period. The types of writing assigned supported the aims of the AP English Language and Composition curriculum, and writing topics covered a range of topics, for example, open-ended inquiry, argumentative writing about issues surrounding the presidential election in 2012, and blogging about the research they were finding as they went through a 7-week research paper writing assignment.

Materials

Students completed two surveys online via Survey Monkey during class time in May 2013. The survey consisted of two parts: the Quantity and Overall Quality of Comments section (Appendix A) and the Subjective Comment Rating section (Appendix B). The survey asked students about their experiences with discussions and comments that took place on the Youth Voices Web site.

Procedure

At the beginning of a 90-min class period on the day that the survey was administered, students were asked to review all of the comments they had received on their Youth Voices discussion posts, to record the total number of comments received, and then determine the average number of comments on each post. The decision to have the students count the number of comments they received, as opposed to having the instructor collect this data through the online system, was to have students become even more cognizant of the quantity of the comments received; the author double-checked the student tallies and found them to be accurate. As part of the administration of the survey, the teacher demonstrated how to determine the average number of comments per discussion post by illustrating the process with the student who had the most overall total comments in the class. Also as part of the demonstration, the instructor informed the class of the range in the number of comments that the group had received (at the time of the survey, the number of comments ranged from a student who had received only one comment to a high of 59 for the student with the most comments).

After the students tallied the quantity of comments they received, a whole class discussion ensued about the quality of comments. It was emphasized to the students that quantity did not necessarily mean quality. The instructor asked for volunteers to share examples of comments that students found valuable, comments that might actually help them improve their thinking about the particular topic or one that might improve their writing in general. In all three sections of the class, the students who volunteered to discuss their examples were not the students who had the highest quantity of comments. Students remarked that

comments that just said things like “me too” were not as valuable as comments where students appeared to put a lot of thought into their responses. Students were encouraged to think carefully about the traits that they valued most in the comments they received and to identify comments that they valued most.

After the students tallied the number of comments they received and considered the comments that they found valuable, they were instructed to begin the survey and were provided a link to the online survey. The Quantity and Overall Quality of Comments section (Appendix A) measured their sense of relatedness, perceived competence, interest–enjoyment, and value–usefulness in the online discussion forum. These data were used to examine the relationship between these motivational factors and the quantity and perceived quality of comments received. Items 1–3 asked students about the quantity and perceived overall quality of the comments they had received. Items 4–29, which make up the next four subsections of this part of the survey, were adapted from Deci and Ryan’s IMI. These items asked students to consider the comments they had received and their sense of relatedness, perceived competence, interest–enjoyment, and value–usefulness.

After students completed the first section of the survey, they completed the Subjective Comment Rating section (Appendix B), where students identified the qualities of the comments on their discussions that they valued the most. These responses were totaled, and the frequencies were recorded. The data from this section of the survey were used to examine the traits of the comments that students valued most.

Measures

A number of measures were derived from the surveys the students completed: Four motivational subscores were derived from the IMI, and one more from the subjective comment ratings. These measures are described in the sections that follow.

Quantity of comments. The quantity of comments measure was computed by counting up the total number of comments the students received on all of their discussion posts; this number was used to examine the relationship between quantity of comments and students’ sense of relatedness, perceived competence, interest–enjoyment, and value–usefulness (Research Question 1).

Quality of comments. The quality of comments measure was computed by having students rate the perceived quality of the comments they received. Item 3 instructed students to read through all the comments they received and then rate their perception of the overall quality of the comments on a 7-point Likert scale. The number from this item was used to examine the relationship between the perceived quality of comments received and students’ sense of relatedness,

perceived competence, interest–enjoyment, and value–usefulness (Research Question 2).

Relatedness. The relatedness measure was computed by averaging items 4–11 in the Comments survey (Appendix A). These items were adapted from the IMI to ask students specifically about their thoughts on the comments they received on their Youth Voices discussion posts with regard to relatedness issues. For example, an item from the IMI read, “I felt like I could really trust this person”; for this study, this item was revised to read, “I felt like I could really trust the people who commented on my discussion posts.” The IMI also contains reverse-scaled items that are phrased in the semantically opposite direction; these items were denoted with an “(R)” in Appendix A—for example, Item 5, “I felt really distant from the people who commented on my discussion posts.” As per the instructions for scoring that accompany the IMI, items 4–11 in the Comments survey were averaged to find the Relatedness measure (reliability [Cronbach’s alpha] for relatedness, .78).

Perceived competence. The perceived competence measure was computed by averaging items 12–17 in the Comments survey (Appendix A). These items were also adapted from the IMI. For example, an item in the IMI that read “I was pretty skilled at this activity,” was reworded to “Based on the comments I received, I think I was pretty skilled at writing discussion posts.” Items in the perceived competence subsection were summed and were examined to see if the correlation coefficient and p value indicated a relationship between perceived competence, and the quantity and perceived quality of the comments received (reliability [Cronbach’s alpha] for perceived competence, .86).

Interest–enjoyment. The interest–enjoyment measure was computed by averaging items 18–24 in the Comments survey (Appendix A) and were adapted from the IMI. For example, an item like “I enjoyed doing this activity very much” was reworded for this survey as “I enjoyed reading comments on my discussion posts very much.” Items in this subsection were summed and examined to see if the correlation coefficient and p value indicated a relationship between interest–enjoyment and the quantity and perceived quality of the comments received (reliability [Cronbach’s alpha] for interest–enjoyment, .89).

Value–interest. The value–interest measure was computed by averaging items 25–29 in the Comments survey (Appendix A) and was adapted from the IMI. For example, an item like “I think this is an important activity” was reworded to “I think getting comments on my discussion posts is an important activity.” Items in this subsection were summed and examined to see if the correlation coefficient and p value indicated a relationship between value–usefulness and the

quantity and perceived quality of the comments received (reliability [Cronbach's alpha] for value–usefulness, .84).

Subjective comment rating. Item 3 in the Quantity and Overall Quality of Comments section of the survey asked students to rate their overall opinion of the quality of the comments they received on their discussion posts. The Subjective Comment Rating section of the survey (Appendix B) attempted to discover what specific comment traits were valued most by students (Research Question 3). This part of the survey asked students to think about the comment that they found most valuable and was derived from the value research of Brophy (2008). Items 2–24 were in large part generated based on the findings of the research cited in the literature review. Some of the items come from relatedness research: for example, Items 2, 3, and 14 (which was phrased, “The commenter seemed like someone I could trust”). Item 7 asked students about peer referencing or uptake (Hara et al., 2000; Nystrand & Gamoran, 1991). Item 17 came from interest research, and more specifically, Items 21–23 on the survey were derived from the findings from Schraw et al. (2001) regarding the three text factors that increase students' situational interest: coherence, relevance, and vividness. Items 15 and 16 referred to the perceived competence of the comment writer, “The commenter didn't have any spelling or grammatical errors” and “The commenter knew what they were talking about.” The other items in the Subjective Comment survey came from the author's observations derived from deconstructing exemplar Youth Voices comments. The comment traits that came from this process of deconstruction were published in a resource the author created for the Youth Voices Web site, called “Comment as Genre: Considerations for online conversations.” The percent of students who identified each trait is reported in Table 4.

Results

The mean and standard deviations for all measures in the study are presented in Table 1.

The Spearman correlations of the motivational factors of relatedness, perceived competency, interest–enjoyment, and value–usefulness for the quantity of comments are presented in Table 2.

To answer the first research question (“How does the quantity of comments students receive on their online discussion posts correlate with students' sense of relatedness, perceived competence, interest–enjoyment, and value–usefulness?”), a correlational analysis was performed to examine the relationship between the number of comments received (Question 2 on the Comment survey) and students' sense of relatedness, perceived competence, interest–enjoyment, and value–usefulness. The data were examined to see if the correlation coefficient and p value indicated a relationship between the quantity of comments and the

Table 1. Means and Standard Deviations.

Variable	<i>M</i>	<i>SD</i>
Quantity of comments	13.00	8.94
Quality of comments	4.96	1.51
Relatedness	4.74	0.90
Perceived competence	4.99	1.12
Interest–enjoyment	5.36	0.99
Value–usefulness	5.49	0.97

Table 2. Correlation of Motivational Factors and Quantity of Comments.

	Quantity of comments	Relatedness	Perceived competence	Interest–enjoyment	Value–usefulness
Quantity of comments	–	.056	.326**	.386**	.229
Relatedness	.056	–	.339**	.488**	.471**
Competence	.326**	.339**	–	.548**	.563**
Interest–enjoyment	.386**	.488**	.548**	–	.848**
Value–usefulness	.229	.471**	.563**	.848**	–

Note. * $p < .05$. ** $p < .01$.

four motivational factors. Table 2 presents the Spearman correlations for the quantity of comments and the four subscales. This table shows a significant correlation between two of the variables at the .01 level: perceived self-competence, with $r = .326$, ($p = .009$) and interest–enjoyment, with $r = .386$, ($p = .000$).

The Spearman correlations of the motivational factors of relatedness, perceived competency, interest–enjoyment, and value–usefulness for the quality of comments are presented in Table 3.

To answer the second research question (“How does the perceived quality of the comments students receive on their online discussion posts correlate with students’ sense of relatedness, perceived competence, interest–enjoyment, and value–usefulness?”), a correlational analysis was performed to examine the relationship between students’ responses to the quality of the comments they received (Question 3 on the Comment survey) and the four motivational factors. Table 3 shows a significant correlation between the quality of comments received and all four subscales. The perceived competence variable was significant at the .05 level, with $r = .274$, ($p = .022$). The other three variables were significant at the .01 level: relatedness, with $r = .316$, ($p = .008$); interest–enjoyment, with $r = .527$, ($p = .000$); and value–usefulness, with $r = .491$, ($p = .000$).

Table 3. Correlation of Motivational Factors and the Quality of Comments.

	Quality of comments	Relatedness	Perceived competence	Interest–enjoyment	Value–usefulness
Quality of comments	–	.316**	.274*	.527**	.491**
Relatedness	.316**	–	.339**	.488**	.471**
Competence	.274*	.339**	–	.548**	.563**
Interest–enjoyment	.527**	.488**	.548**	–	.848**
Value–usefulness	.491**	.471**	.563**	.848**	–

Note. * $p < .05$. ** $p < .01$.

To answer the third research question (“What traits are valued most by the students in the comments that they receive?”), the responses to the Subjective Comment Rating survey were tallied. Table 4 lists in descending order the traits that the highest percentage of students found valuable.

Discussion

It is a common practice for educators to require students to respond to a prompt in an online discussion forum that relates to the course content, but students are not always required to reply to other students’ comments or are not always given specific guidelines for writing comments. The purpose of this study was to determine whether the quantity and quality of comments students receive on their online discussion posts is related to their motivation to learn. Additionally, the study aimed to discover the traits that students find most valuable in the comments they receive on those discussion posts.

With regard to the first research question (“Did the number of comments students receive on their discussion posts influence their motivation?”), the findings of this study indicate that there was a relationship between students’ motivation (i.e., perceived competence and interest–enjoyment) and the number of comments they received on their discussion posts. Therefore, if promoting interest in the classroom activities increases students’ intrinsic motivation to learn, then it is worth bearing in mind that interest and enjoyment were positively correlated with a higher number of comments received. Likewise, since students’ self-efficacy has been linked to higher interest in learning tasks and the putting forth of greater effort, it is of note that students’ perception of their own competence was also related to the number of comments they received.

However, the results from Table 2 also show that there was no correlation between the number of comments students received and two motivational factors: relatedness and value–usefulness. A possible explanation for this might be that, according to Pettit, Erath, Lansford, Dodge, and Bates (2011), the number of relationships (or breadth) is not as important as depth of relationships.

Table 4. Subjective Comment Ratings. Comment Traits and Percentage of Students Who Found the Trait Valuable.

Percent	Trait
69	The commenter seemed interested in what I had to say
67	The commenter agreed with me
66	The commenter understood what I was trying to say
63	The comment was coherent
53	The commenter is a friend of mine
46	The commenter seemed like someone I could trust
46	The commenter complimented me
46	The commenter didn't have any spelling or grammatical errors
44	The commenter specifically referenced things I wrote (e.g., directly quoted me)
44	The commenter knew what they were talking about
41	The commenter added information that I hadn't thought of
40	The commenter provided a new perspective on the topic
39	The commenter thanked me
37	The commenter related to me on a personal level
33	The commenter made connections to something they had read, observed, or experienced
30	The comment was relevant to me personally
30	The commenter empathized with me
27	The commenter expressed an interest in continuing the conversation further
21	The comment was written in a vivid way
13	The commenter respectfully disagreed with me
11	The commenter justified their position when disagreeing with me
9	The commenter provided evidence when they disagreed
1	The commenter disagreed with me, even though they were disrespectful

“Individuals do not possess a limitless capacity to engage in close relationships due to the time and energy that relationships demand. As such breadth or number of relationships may reach a point of diminishing returns and even contribute to tension within a relationship.” Furthermore, Pettit et al. found that depth of relationships was more significant than breadth because “individuals seek and derive support from those with whom they have a close relationship” (p. 485). Another reason for this lack of relationship can be explained by the fact that the sheer number of comments does not meet the needs of contextual support identified by Chen and Jang (2010). As to the finding that there was no relationship between the number of comments received and value–usefulness, at least one explanation seems plausible. Wigfield and Eccles’s (1992) concept of

usefulness refers to how a task fits into an individual's future plan. Perhaps, the students saw no connection between the number of comments they received in this discussion forum with their strength as a writer or as an indication of success in the future.

While quantity of comments was related to the two motivational factors, relationships were also found between the quality of comments and all four motivational factors (relatedness, perceived competence, interest–enjoyment, and value–usefulness). In fact, some students who did not receive many comments at all felt as if the few comments they did receive were quality comments and reported above-average scores for the motivational subscales. One student received only five total comments ($M = 13$, as can be seen in Table 1 above), yet this student rated the quality of those comments as 6.00 ($M = 4.96$). This student had a relatedness score of 5.63 ($M = 4.74$), perceived competence was 6.33 ($M = 4.99$), interest–enjoyment was 6.57 ($M = 5.36$), and value–usefulness was 6.40 ($M = 5.49$). This could be attributed to this student's more enduring dispositions and personal interest toward learning and writing rather than a result of a situational interest in this particular activity, but it was apparent from the data that some students highly valued the comments they received, even though they did not receive many. Individual differences aside, the perceived quality of comments was related to all four motivational factors. Perhaps, not surprisingly, this would indicate that students desire high-quality feedback as Hara et al. (2000) and Xie et al. (2006) also found. The implication for educators is to consider explicitly addressing what makes quality comments in online discussions in their particular educational setting before actually having the students engage in the activity.

While it was found that the quality of comments was related to motivational factors, this study was also concerned with what specific traits in the comments were most valued by students. One reason this research question focuses on value is because that in the expectancy \times value model of motivation (Wigfield & Eccles, 2000) value is half of what motivates students. The most common responses to the Subjective Comment subsection of the survey were (1) the commenter seemed interested in what I had to say, (2) the commenter agreed with me, (3) the commenter understood what I was trying to say, (4) the comment itself was coherent, and (5) the commenter is a friend of mine. More than half of all the students valued these top five traits. Two motivational factors—interest and relatedness—were well represented in the top responses. The most popular and the fourth most popular trait identified (the text factor of coherence) were indicators of interest. Three traits out of the top eight were indicators of relatedness (“the commenter understood what I was trying to say,” “the commenter is a friend of mine,” and “the commenter seemed like someone I could trust”). Finally, two traits among the most popular choices were indicators of competence (“the commenter didn't have any spelling or grammatical errors” and “the commenter knew what they were talking about”). Bandura argued that

the self-efficacy beliefs of students come not only from a student's own experience but also through the social persuasions of their peers. The comments these students received on their discussion posts qualify as social persuasions.

It seems apparent from the most popular responses in Subjective Comment Rating section that students valued discussions which supported existing peer relationships while also placing a premium on coherent responses from capable responders. However, what was also noticeable about the results of this part of the survey was the low frequency of responses involving any kind of disagreement. In this course, two of the 12 required discussion posts were argumentative in nature: In one assignment, students wrote about controversial issues; another discussion post had students take a stand on an issue in the 2012 presidential election. While there was a wide range of opinions from the students in the class in face-to-face discussions, either there was not much disagreement in the comments on these discussion posts, or any disagreements that did happen were not valued very highly.

Limitations

One limitation of this study may be that the emphasis placed on the number of comments the students received during the teacher demonstration immediately before the survey administration could have potentially strengthened the relationship of the quantity of comments and motivational factors. It could be argued that this emphasis may have resulted in higher motivation scores simply because students felt good about receiving more comments and other students felt bad about receiving few. However, two reasons can be offered to counter this argument. The first is the fact that there was only a significant relationship between quantity and two of the motivational factors; the second reason is that equal amount of time was devoted to discussing the issue of quality of comments, emphasizing that quantity does not necessarily equal quality. Another limitation is that this study did not link motivation to achievement. This study did not examine whether increased motivation led to better writing, knowledge co-construction, or higher level thinking skills.

Conclusion

This study raises some possibilities for future research. What motivates students to co-construct knowledge in online spaces is certainly worthy of more attention. How students negotiate disagreements in online spaces also seems to be a topic worth exploring as well. This study also did not address how many comments might be an optimal amount. For example, should students be required to post as many comments as discussions, or should more be required—for example, might they be required to comment twice as many times as they respond?

The question of how many comments should be required of students is a practical matter for educators.

Overall, this study found a relationship between the quantity and quality of comments and motivational factors in online discussion. Since having students participate in online discussions is increasingly becoming a significant part of education, more attention needs to be paid to students' motivation to learn in these activities.

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Appendix A—Comments Survey

1. On average, how many comments did you receive on your discussion posts?
 2. How many total comments did you receive on all of your discussion posts?
- Unless otherwise stated, all questions are rated on a 7-point scale of the type:

1	2	3	4	5	6	7
not at all		somewhat		very much so		

3. In general, the quality of comments I received on my discussion posts was high.

Relatedness

4. It is likely that the people who commented on my discussion posts and I could become friends if we interacted a lot.

5. I felt really distant from the people who commented on my discussion posts. (R)
6. I really doubt that the people who commented on my discussion posts and I would ever be friends. (R)
7. I felt like I could really trust the people who commented on my discussion posts.
8. I'd like a chance to interact with the people who commented on my discussion posts more often.
9. I'd really prefer not to interact with the people who commented on my discussion posts in the future. (R)
10. I don't feel like I could really trust the people who commented on my discussion posts. (R)
11. I feel close to the people who commented on my discussion posts.

Perceived Self-Competence

12. Based on the comments I received, I think I am pretty good at writing discussion posts.
13. Based on the comments I received, I think I did pretty well at this activity, compared with other students.
14. After reading the comments on my discussion posts, I felt pretty competent.
15. I am satisfied with my performance because of the comments I received.
16. Based on the comments I received on my discussion posts, I think that I was pretty skilled at this activity.
17. Based on the comments I received, creating discussion posts was an activity that I couldn't do very well. (R)

Interest-Enjoyment

18. I enjoyed reading comments on my discussion posts very much.
19. Reading the comments on my discussion posts was fun to do.
20. I thought getting comments from others was a boring activity. (R)
21. The comments I received did not hold my attention at all. (R)
22. I would describe getting comments as very interesting.
23. I thought getting comments was quite enjoyable.
24. While I was reading the comments on my discussion posts, I was thinking about how much I enjoyed it.

Value–Usefulness

25. Based on the comments I received, I would be willing to continue doing this activity because it has some value to me.
26. I believe getting comments could be of some value to me.
27. I believe getting comments on my discussion posts could be beneficial to me.
28. I think getting comments on my discussion posts is an important activity.
29. I believe getting comments on my discussion posts is useful.

Appendix B—Subjective Comment Rating

For this section of the survey, read through all the comments that other students have made on your discussion posts. Once you've read through them all carefully, complete the following.

- Locate a comment that was valuable to you. What qualities made it something you valued? Explain: _____

Here are some possibilities to help you answer the above questions.

1. The commenter agreed with me
2. The commenter is a friend of mine
3. The commenter complimented me
4. The commenter empathized with me
5. The commenter added information that I hadn't thought of
6. The commenter related to me on a personal level
7. The commenter specifically referenced things that I wrote (e.g., directly quoted me)
8. The commenter disagreed with me, even though they were disrespectful
9. The commenter respectfully disagreed with me
10. The commenter justified their position when disagreeing with me
11. The commenter provided evidence when they disagreed
12. The commenter provided a new perspective on the topic
13. The commenter understood what I was trying to say
14. The commenter seemed like someone I could trust
15. The commenter knew what they were talking about
16. The commenter didn't have any spelling or grammatical errors
17. The commenter seemed interested in what I had to say
18. The commenter made connections to something they have read, observed, or experienced

19. The commenter thanked me
20. The commenter expressed an interest in continuing the conversation further
21. The comment was coherent
22. The comment was relevant to me personally
23. The comment was written in a vivid way
24. Other (please explain): _____