Impact and Perceived Value of Peer Feedback in Online Learning Environments

Peggy A. Ertmer
Jennifer C. Richardson
Brian Belland
Denise Camin
Patrick Connolly
Glen Coulthard
Kimfong (Jason) Lei
Christopher Mong

Purdue University
Department of Curriculum and Instruction
Beering Hall of Liberal Arts and Education
100 N. University St.
West Lafayette, IN 47907-2098
Feedback has been demonstrated to play an important role in instruction (Mory, 2004, Topping, 1998) with many learning theorists, from Skinner to Mayer, positing that feedback is essential to students’ learning (Driscoll, 2000). Current views hold that the purpose of instructional feedback is to provide students with information they can use to confirm what they already believe or to change their existing knowledge and beliefs (Mory). Higgins, Hartley, and Skelton (2002) noted that feedback that is meaningful, of high quality, and timely helps students become actively and cognitively engaged in the content under study, as well as in the learning environment in which they are studying.

Compared to a traditional classroom, feedback may play an even more important role in an online environment (Lynch, 2002; Palloff & Pratt, 2001). That is, students in an online course are more likely to disconnect from the material or environment due to a lack of feedback than students attending a lecture-formatted course. Instructor feedback is often cited as the catalyst for student learning in online environments, while lack of feedback is most often cited as the reason for withdrawing from online courses (Ko & Rosen, 2001; Lynch, 2002; Palloff & Pratt, 2001).

Because of the importance of feedback in online environment, a number of recommendations have been made for increasing its effectiveness. Notar, Wilson, and Ross (2002) specifically called for feedback that was “diagnostic and prescriptive, formative and iterative, and involving both peers and group assessment” (p. 646). Thus, according to these authors, feedback should focus on improving the skills needed for the construction of end products, more than on the end products themselves. While students agree that feedback needs to contain a formative aspect, they also desire summative comments. According to Schwartz and White (cited in Mory, 2004), students expect feedback in an online environment to be:

• Prompt, timely, and thorough
• Ongoing formative (about online discussions) and summative (about grades)
• Constructive, supportive, and substantive
• Specific, objective, and individual
• Consistent

Research has shown that the quality of student discussion responses can be increased through the use of constructive feedback that is prompt, consistent, and ongoing (Ertmer & Stepich, 2004). Discussions without guidance or feedback can be ineffective and inefficient, yet significant time is required to provide meaningful feedback on students’ individual postings. Debowski (2002) noted that while learners are often offered the opportunity to view relevant and helpful examples of the content they are studying in an online course, it is a much greater challenge to give learners the opportunity to practice targeted skills and receive relevant and useful feedback.

One possible solution is for students to provide feedback to each other. As noted by Maor (2003), feedback "can no longer be considered the sole responsibility of the instructor because there is a much larger focus on dialogue...[and] the joint construction of knowledge" (p. 128). Depending upon how peer feedback is used, instructors could be spared the task of evaluating large numbers of student postings, yet still include as many instances of formative and summative feedback as deemed necessary. Students, on the other hand, could still receive the feedback they desire in order to assess their progress in the online environment. While “peer feedback might not be of the high quality expected from a professional staff member, its greater immediacy, frequency, and volume compensate for this” (Topping, 1998, p. 255).

In addition to the benefits of receiving adequate feedback, students may also benefit from giving peer feedback. Liu, Lin, Chiu, and Yuan (2001) proposed that, when asked to offer feedback to peers, students progress beyond the cognitive processes required for completing a given task, as they must now “read, compare, or question ideas, suggest modifications, or even reflect on how well one’s own work is compared with others” (p. 248). McConnell (2002) also suggested that collaborative assessment moves students away from dependence on instructors as the only, or major, source of judgment about the quality of learning to a “more autonomous and independent situation where each individual develops the experience, know-how, and skills to assess their own learning” (p. 89). Thus, students are offered the opportunity not only to reflect on the work of their peers, but also on their own work.

Although peer feedback can add value to the instructional process, it is not without its challenges. These challenges relate to a wide range of issues, including implementation, students’ anxiety over giving and receiving feedback (especially negative feedback), and reliability, to name a few. According to Palloff and Pratt (1999), “The ability to give meaningful feedback, which helps others think about the work they have produced, is not a naturally acquired skill” (p. 123). In terms of implementation, Topping (1998) noted that “both assessors and asessees might experience initial anxiety about the process” (p. 256), but suggests that this may be mitigated by asking students to provide positive feedback before providing any negative feedback. Topping also suggested that learners may perceive peer feedback to be invalid, thus causing low-performing students to refuse to accept negative feedback as
accurate. These concerns over accuracy and validity may, in fact, be justified, based on the tendency for students to either inflate or deflate scores (Topping, 1998).

It is unclear whether challenges related to giving and receiving peer feedback in a traditional environment will be exacerbated or mitigated when applied within the online environment. Tunison and Noonan (2001) reported that many students found it difficult to communicate complex ideas in an online environment, and that their ability to express their questions clearly and comprehend detailed explanations was limited by the lack of face-to-face interaction. Arbaugh (2000) reported that while there tends to be a more equal and higher level of student participation in online course discussions than in traditional settings, this interaction may not be as effective as face-to-face interaction, at least not until participants achieve a level of comfort with each other. If peer feedback is to be beneficial to all members of the learning community, these are issues that must be addressed (Preece, 2001).

According to Mory (2004), “Although there has been progress in determining ways in which feedback can best be used under certain conditions, there are still many areas in which the feedback literature is not consistent and yet other areas that have been left unexplored” (p. 771). For example, little work has been done that examines the role or impact of feedback in online learning environments in which learners construct their own knowledge, based on prior experiences and peer interactions. The purpose of this study was to examine the perceived value and impact of peer feedback on students’ postings in an online learning environment. Specifically, the research questions included:

1. What is the impact of peer feedback on the quality of students’ postings in an online environment? Can quality be maintained and/or increased through the use of peer feedback?
2. How do students’ perceptions of the value of receiving peer feedback compare to the perceived value of receiving instructor feedback?
3. What are students’ perceptions of the value of giving peer feedback?
4. What aspects of the peer feedback process do students perceive as being particularly useful or challenging?

Methods

To determine the viability of either supplanting or supplementing formative instructor assessments with peer feedback in an online environment, we examined the use of peer feedback during a semester-long, graduate-level online course in the College of Education at a large Midwestern university. Using a mixed-methods approach, data were collected through participant interviews, scored ratings of students’ weekly discussion postings, and responses to both entry and exit survey questionnaires. Changes in scored postings were used to answer our research question regarding the impact of peer feedback on quality of students’ postings. Survey results captured students’ overall perceptions of giving and receiving feedback, while interviews provided insights into individual perceptions and personal experiences with the feedback process, in general, and the peer feedback process, specifically.

Role of researchers

The researchers in this study included one faculty member and seven graduate students (one female/six male) in the educational technology program at a Research I university in the Midwestern United States. All had experience in online learning environments, and all were familiar with the scoring rubric (based on Bloom’s taxonomy) used by the participants in this study. The faculty member and one student researcher had used this rubric for grading online discussion postings in previous courses, and two student researchers had taken a course that used the rubric for this same purpose.

Participants

The participants in the study were 15 graduate students (10 female, 5 male) enrolled in an online technology integration course during the spring semester of 2005. Eight of the participants were administrators, such as technology directors or principals, and three additional students were former or current teachers. Of those pursuing a graduate degree, five were masters and nine were doctoral students. Seven of the doctoral students were part of a cohort program in educational administration. Two students were international, one from Brazil and one from Sri Lanka. The human subjects review board deemed this study exempt under university guidelines.

Context and procedures
The online, graduate level course was co-taught by a professor and an experienced graduate assistant. Students met face-to-face (or via Internet-based video conferencing) for the first class session; all subsequent interactions occurred electronically, within a WebCT course environment. In addition to other assignments, the students were asked to respond to discussion questions (DQs) each week. In a typical week, when not in the role of discussion leader, students were expected to post at least one response to the discussion question and one response to another student’s post.

For this study, feedback was defined as 1) comments about the quality of students’ online postings and 2) a corresponding score based on Bloom’s taxonomy. Postings at the knowledge, comprehension, and application levels received 1 point; postings demonstrating analysis, synthesis, or evaluation received 2 points; non-substantive comments received 0 points. The scoring rubric, adapted from Ertmer and Stepich (2004), provided the instructor and students, as well as the researchers, with a concrete tool for determining the quality of online postings. Prior to using the rubric, students were provided with a variety of examples of possible responses, with an explanation of why each response merited a specific score.

Initially, two discussion questions were posted each week, with feedback provided by the two course instructors via e-mail. This constituted instructor feedback for this study. After observing the process modeled by the instructors, students were asked to provide feedback to two of their peers beginning Week 7 and continuing for the following 6 weeks (peer review assignments were rotated each week). Groups were not self-contained: no two students were reviewing and being reviewed by the same students for the same DQ. To accommodate the peer review process, online discussions were limited to one discussion question during those weeks.

All peer feedback was channeled through the instructors prior to being distributed. That is, students reviewed their assigned peers’ postings, scored them using Bloom’s taxonomy, and provided comments to support the scoring. These were then sent to the instructor via e-mail. The instructor reviewed the feedback, compiled the two responses for each student into one document, eliminating peer reviewers’ names, and sent this to students via e-mail. Students were unaware which students had provided the feedback, which helped maintain the anonymity of the process, and which created a buffer in case feedback was problematic. Both instructor and peer feedback scores counted toward students’ grades. Students received participation points for the peer review activity but the act of providing peer feedback was not graded.

Data collection

Researchers’ ratings of discussion postings, pre- and post-surveys, and student interviews comprised the primary data sources. Course documents (e.g., syllabus, assignment descriptions), and students’ peer ratings of discussion postings constituted secondary data sources.

Discussion postings. In order to assure consistency of scoring of students’ online postings, the research team scored all discussion postings, using the same rubric students had used. While these were not the scores that students received during the course, they provide a better indication of the changing quality of their responses. That is, because students’ postings were rated by many different peers (each with their own interpretation of how to apply the rubric), it was important, for research purposes, to use a more consistent measure of quality. Furthermore, the students were not required to score each posting that a peer had made to a DQ but rather, only the two required postings, thus making the data set incomplete.

Two researchers rated all of the student postings. In order to assure that the scoring was not influenced by the timing of the posts (with later scores automatically receiving higher scores), all evidence of DQ numbers, posting dates, and times was removed from these documents. To assure consistency in scoring, the two raters scored a complete set of postings (n = 59) from a single randomly selected discussion question. Working from separate printed copies, the raters scored the first ten postings independently and then verbally discussed their scores. After securing agreement on the first ten postings, the raters independently scored the next ten postings. Upon completion, the raters compared their results, tallied the number of disputed scores, and then discussed their differences. The raters proceeded with this process until all 59 postings were completed. The final results showed 86.44% agreement between the two raters. Following this, the two researchers divided and independently rated the remaining sixteen discussion questions, containing anywhere from 38 to 81 postings each.

Pre- and post-surveys. At the end of Week 5, students completed a survey (13 Likert-style items; 5 open-ended questions) in which they rated their level of agreement (from 1—strongly disagree, to 5—strongly agree) on the importance of various aspects of feedback (e.g., timeliness, quality, quantity) and the extent to which the feedback they had received, from the instructor, met these criteria. Students described their typical responses to receiving positive and negative feedback (e.g., “When I receive feedback that is below my expectations, I tend to ...” and “The feedback in this course, has changed my postings in the following ways ...”) and their ideas regarding the most
effective feedback method in an online course. The initial survey served as a pre-measure of students’ perceptions, as students completed it prior to giving or receiving peer feedback. In week 16, students completed a post-survey in which they rated the importance of peer and instructor feedback and commented on the value of both giving and receiving peer feedback. Additional survey items were used primarily to triangulate results from the student interviews.

**Interviews.** Participant interviews were conducted in order to obtain more detail about individual issues arising from the peer feedback process (e.g., How easy or hard is it to use Bloom’s taxonomy as a scoring rubric? How do you feel about peers evaluating your postings?) Each member of the research team interviewed two participants via telephone or in person. The interviews lasted 20 to 30 minutes, were recorded electronically, and then transcribed. Once completed, the interview transcriptions were sent to the participants for member-checking to ensure accuracy and completeness.

**Data analysis**

In order to determine the impact of peer feedback on the quality of students’ postings, we compared the average scores obtained on postings prior to the use of peer feedback (weeks 3-5) to those obtained during the peer feedback process (weeks 7-13), using a paired sample t-test. T-tests were also used to compare students’ ratings, on the pre and post survey, of the value of peer and instructor feedback. These were then triangulated with ratings collected during participant interviews, conducted several weeks after the peer feedback process had started. Participants’ perceptions of the value of the process were compared across open-ended survey questions and responses given in the interviews. After standardizing on a set of rating codes, the research team coded their individual interviews to identify recurring themes and patterns in the data.

Validity concerns were addressed through the triangulation of data sources, member-checking of the transcribed interviews, and pattern-matching through coding and discussion with other members in the research team. The use of a standardized interview protocol served to increase reliability, as did having previous experiences with, and training on, Bloom’s taxonomy. The use of multiple interviewers and evaluators helped eliminate interviewer biases.

**Results**

**Perceived value and impact of peer feedback**

At the beginning of the course, students believed that feedback in an online course was “slightly more important” than in a traditional course (M=3.6/5.0) and thought that feedback should be timely (M=3.8) and of high quality (M=3.9). Students considered the quantity of feedback to be less important (M=3.3) than quality. By the end of the course, students’ perceptions of the importance of feedback in an online course had significantly increased (M=4.7; t(11)=2.24; p=.05), as had their expectations that feedback should be timely (M=4.3; t(11)=3.32; p=.007).

A paired t-test indicated no significant difference (t(14)=.29; p=.77) in the quality of students’ postings on discussion questions in which they received instructor feedback (weeks 3-5, M=1.31) compared to those on which they received peer feedback (weeks 7-13; M=1.33). Thus, although the quality of students’ postings did not improve with peer feedback, neither did it decrease, suggesting that peer feedback may be effective in maintaining quality of postings, once a particular level has been reached.

While specific changes in the quality of postings was not evident as a result of peer feedback, interview comments suggested that students (n=8) used information obtained from the feedback process to improve the quality of their postings.

Yes, it has impacted on my own posts. Because I remember the first time I got feedback [it said] "it is important to give an example." And so I try to put more examples in my answers.

Somebody scored me on a 2, and one gave me a 1 because they didn’t think I got to the higher levels of Bloom’s taxonomy; one did, one didn’t. You know, you sit down and you say, “Well maybe there’s something I need to improve in how I write my answers so they could clearly see that I’m hitting that, so I now throw in words like, “In evaluating this concept, I believe…” I tend to use clearer terms to help them identify where I believe my thinking process is.
Instructor vs. peer feedback: Perceptions of value

As expected, at the beginning of the course, feedback from the instructor was perceived as being more important (M=4.3) than peer feedback (M=3.3). In general, students disagreed with the statement that they would rather receive feedback from their peers than from the instructor (M=2.0). They explained that the instructor was more knowledgeable and thus, should oversee scores that peers provide. By the end of the semester, students’ perceptions of the value of instructor feedback (M=4.6) did not significantly change; furthermore, it was still perceived as being more important than peer feedback (M=3.7). A paired t-test \( t(11) = 3.19 \) showed this difference, between the perceived values of instructor and peer feedback, to be significant at the .009 level. Interview comments provided additional insights into reasons why students preferred instructor feedback. For example, students expressed concerns about potential biases in peers’ evaluations due to the fact that it was required (n=3), that not everyone was motivated to provide quality feedback (n=5), or that it took a great deal of time to give quality feedback (n=4). One student noted:

The feedback was kind of superficial. You just kind of go through the motions—at least the stuff I’ve gotten back. There’s not really any real substance to it. If the person did not score at the highest level, [peers should] identify something that would take them to the next level or the highest level.

Additional comments, while still describing benefits to peer feedback, point to the previous experiences, unbiased approach, and general expertise of the instructor:

… It is good to know everybody else’s opinion. [And] I guess it can help you [move] to some other directions that might lead you to some more questions, but overall, it is not really going to change my perspective on the question.

I like the peer feedback better, in the sense of how it makes me feel. But as far as valuing what they're saying about me, I would value [instructor’s] feedback more. Her grading was a little harder than what my peers has been, but it was probably more on target.

Peers are able to associate with you on a more equal level than the instructor and they often have insights that the instructor doesn't. But the instructor does have the expertise that is often good to receive in terms of the feedback. Peers are unable to provide that level of expertise in their feedback. Their feedback tends to be more opinion.

As noted above, even though students preferred instructor feedback, the majority of them (n=13) still valued the peer feedback process and many described important aspects of the process (e.g., anonymous format; relative weight given to it). As noted by one student:

This experience is more in-depth, and I would have to say, more positive [than in other courses], because if peer feedback is the sole source of feedback that we are getting [it] … has to be more thorough and more comprehensive. Previous peer feedback experiences I’ve had were coupled with feedback from the instructor, and were seen more as a secondary measure. In this instance, as a primary measure, it has been a lot more valuable.

Additional benefits to receiving peer feedback included receiving confirmation that their ideas were meaningful to others as well as having opportunities to profit from the insights of their peers, who could offer a variety of perspectives that the instructor could not provide.

It’s nice to get some validation that what you had to say was important to somebody else, that they got something from it.

My impressions are that it is very beneficial to learning in that peers often have different perspectives than the instructor, and there are significantly more of them, and they can provide a lot of insight and ideas that the instructor might not have noticed. Peers are more often on the same level and may be able to explain things in a manner that makes more sense than the instructor might have.
Perceived value and impact of giving peer feedback

When, on the post-survey, to rate the importance of both giving and receiving peer feedback, students rated them at the same level (M=3.7), that is, as “important” to their learning. The significantly high correlation (r=.78; p=.003) between these ratings suggests that students, on average, did not perceive one aspect as being more important than the other. That is, those who rated the process of giving feedback as important also tended to think that receiving peer feedback was important to their learning. In the interviews, students talked about reflecting on the feedback they had given to peers as they formed their own responses to discussion questions. Moreover, several students (n=6) discussed specifically how the process of providing peer feedback increased their own learning. Comments from three students are illustrative:

I often think that the tutor or the person giving the feedback often learns more than the person receiving the feedback. … The person giving the feedback learns through the suggestions that they come up with in evaluating the response. They learn through the content of the person’s [post] they are evaluating, and they learn from their own thought process. So I think it's very beneficial to do.

I think that I considered more often how others would view what I was about to post and it made me consider alternatives and other ideas that I may have not thought of if I had not been doing peer feedback. It brought Bloom's taxonomy into a greater focus and how I am formulating my responses.

When you teach what you learn, you retain what you learned 300% better. When we present things to people who maybe don’t have [the same experience], we’re actually reinforcing our own learning much more strongly. So we’re gaining.

However, as with receiving peer feedback, students perceived difficulties with the process. The main concerns for giving feedback related to being consistent and fair (n=4). For example, one student commented, “I think peer feedback is good, but in some respects, I don’t know if I’m really qualified to give a grade to anybody.” Particularly worrisome to some students was having to give a 0-score. In fact, some students simply would not do this.

I am not sure if I could give a 0 to anyone because I don't feel that I have the power to say, "That's not a good idea."

Even though I don’t know them, I don’t think I’d give them a 0, no.

This is supported by the peer feedback data; in approximately 160 peer-rated postings, peers gave a 0-score only 7 times (4%). Still, a few students (n = 4) indicated that the issue was not one of assigning a low score but of being a conscientious educator. These students believed that a low score provided a teachable moment, providing the opportunity to offer constructive criticism and suggestions for improvement. Overall, the majority of students (n = 8) felt that the benefits of providing peer feedback outweighed the costs. While specific benefits related to learning how to improve the quality of their own posts as well as their feedback to others, the main cost related to the time needed to do a good job. Still, students described the time commitment as appropriate to a graduate course, as well as relevant to their future careers, as noted by one student: “Skills associated with peer evaluation are going to carry on much longer than the course.”

Perceived benefits and challenges to the peer feedback process

An important aspect of the feedback provided in this course was the use of Bloom’s taxonomy as the basis for scoring. In general, the students (n = 8) responded favorably to this approach, describing how it provided more structure and guidance for achieving and acknowledging quality postings. For example, two students commented:

… The grading was done more consistently than in other courses I have taken, and there were specific things that were mentioned on every score that we received in terms of the evaluation level that the instructor believed the (post) merited, and the exact characteristics of that level that were characterized by the response. … In previous courses, points were based on more subjective measures in terms of what the professor thought was an appropriate response.
It leveled the playing field for everyone and it did make it easier to respond. As I formulated my responses [it was useful] to know what the person would be looking for.

However, the use of Bloom’s taxonomy added a layer of difficulty to the course for which not all students were prepared. While two students explained that they just needed time to adjust to using the rubric, two other students noted that it was difficult to apply: “I think it’s hard. [The taxonomy] is vague; the rubrics are pretty wide open.” One of these students described his/her confusion while trying to decide which level of Bloom’s was most applicable to a response and often just ended up using the top level (evaluation).

In addition, one student felt constrained by the use of the rubric, noting that it was kind of “undergraduate-ish” to rate each other’s postings using Bloom’s taxonomy, especially since many of the students in the class were high-level administrators. Furthermore, because students’ participation grades were based on scores provided by their peers, there was some concern on both sides (givers and receivers), about the potential impact of their evaluations. While some students (n=3) were worried that their peers were being too nice to them (thus not providing any valuable suggestions for improvement), others (n=3) worried that their grades would suffer because their scores were too low. As one student noted, “I see the importance. But I also think that the instructor should have the overall decision on how many [points] you get.”

Summary

Though participants’ perceptions of the importance of feedback in an online course significantly increased from the beginning to the end of the course, students continued to believe that instructor feedback was more important than peer feedback. Furthermore, despite seeing no quantitative improvement in the quality of students’ postings during the peer feedback process, interview data suggested that participants valued the peer feedback process and benefited from having to give and having received peer feedback.

Discussion

Value and impact of feedback in an online environment

Results from this study highlight the importance of feedback in an online environment and support the assumption that students’ postings can reach, and be sustained at, a high level of quality through a combination of instructor and peer feedback. In general, students’ postings, across 11 discussion questions, averaged 1.32 on a 2-point “quality” scale. While we expected that the quality of students’ postings might gradually improve over the semester, as was demonstrated in a similar study by Ertmer and Stepich (2004), our results showed no significant improvement in students’ postings from the beginning to the end of the course. We suspect that a number of factors may have mediated students’ efforts to achieve high quality postings. First, the online course was structured such that students were required to submit two postings (for grading) each week: an “initial” post to the weekly discussion question, as well as one response to another student. Additional postings were not required, nor did students expect them to be scored for quality. Therefore, once the initial and follow-up postings were made in a specific forum, students had little motivation to strive for high quality with any additional postings. Furthermore, scoring postings with a grading rubric that allowed for only two meaningful levels of quality may not have provided enough room for growth, thus causing a ceiling effect to occur. Since students started out with relatively high scores on their two required posts, there was little opportunity to demonstrate improvement in these scores during the semester. In the future, it might be important to include a scoring rubric that allowed for more variation among scores. The disadvantage to this, however, is that as the scale becomes more finely gradated, it becomes increasingly difficult to differentiate among the various levels of quality.

Second, many of the discussion starters, especially those developed by student discussion leaders, were not particularly conducive to high-level responses. For example, student leaders tended to ask their peers to provide examples of current issues they faced in their classrooms or schools (e.g. how to integrate technology, how to cope with security issues, how to apply distance learning opportunities in the classroom). While these types of discussions might be expected to stimulate responses related to the application level on Bloom’s taxonomy (score = 1 point), they would not readily engender responses related to analysis, synthesis, or evaluation (score = 2 points). As Black (2005) noted, “most online discussion consists of sharing and comparing information, with little evidence of critical analysis or higher order thinking. Such findings serve to remind us that it is not the technology itself but the manner in which it is applied that is most critical” (p. 19). Thus, it is important for instructors to not only facilitate
meaningful online discussions but also to be cognizant of the development of discussion questions in such a way that allows students to attain higher-order thinking.

Communication in online courses serves many functions, only some of which are specifically content-focused (Ko & Rosen, 2001; Palloff & Pratt, 1999, 2001). However, in this study, we rated every response posted in 17 different discussion forums, including responses that were intended solely for interpersonal or motivational purposes. While these types of postings serve important roles, they would not be likely to receive a high-quality score, based on Bloom’s taxonomy. Given this, we considered scoring only the required posts in each forum; however, it was difficult to determine, post-hoc, which postings students intended to “count” as their required two postings. Additionally, this would have reduced the total number of analyzed postings from 778 to 160, which would have greatly limited our ability to measure changes in posting quality. In the future, it will be important to clarify exactly how many postings will be scored in a discussion forum while also leaving room for students to make additional postings that serve to build a sense of community and trust.

Perceptions of value: Peer vs. instructor feedback

Despite the fact that the quality of students’ postings was maintained with the use of peer feedback, students still tended to favor instructor feedback over that received from peers. Furthermore, despite participating in what they, themselves, described as a “valuable process,” students began and ended the course believing that instructor feedback was more important to their learning. This perception is similar to that reported by a number of researchers (Ko & Rosen, 2001; McKenchie, 2002; Topping, 1998) who have noted that students often believe that their peers are lax in their assessment approaches or that they lack required skills to provide valuable feedback. As Topping noted, if learners perceive peer feedback to be invalid, they may end up de-valuing the entire peer feedback process. This suggests the importance of explicitly addressing students’ perceptions, up front, and taking steps to counter their strong preconceived ideas of the relatively weaker value of peer feedback.

Specifically, in this study, students expressed concerns about being qualified to give feedback to each other. This may have led, on the one hand, to the perception that they were receiving superficial or low-quality feedback to, on the other hand, feeling apprehensive about being consistent and fair while evaluating their peers’ postings. As noted earlier, “The ability to give meaningful feedback, which helps others think about the work they have produced, is not a naturally acquired skill” (Palloff & Pratt, 1999, p. 123) and students might experience initial anxiety about the process (Topping, 1998). In this study, these concerns appeared related to a more fundamental concern about how peer scores would impact grades, their own and others. To help the peer feedback process work most effectively, students need to be assured that postings will be fairly and consistently evaluated and to appreciate the additional benefits made possible through the peer feedback process.

One of the potential advantages of using peer feedback, as noted by Topping (1998), is the increased timeliness in receiving feedback. However, in this study, students’ feedback was channeled through the instructor, thus causing a delay in delivery time. In this study, this process could take as long as two weeks. The significantly higher rating, at the end of the course, of the importance of timeliness of feedback may have been in reaction to the perceived delay in receiving peer feedback. This dramatic lag time, then, may have cancelled out one of the proposed benefits of peer feedback, that is, increasing the timeliness of receiving feedback.

Still, despite these logistical problems, the majority of students indicated that peer feedback positively impacted the quality of their discussion postings. They described a number of specific benefits from receiving peer feedback including recognition of their ideas, access to multiple perspectives, and receiving a greater quantity of feedback than would have been received from the instructor alone. Students also noted positive aspects of the peer feedback process, including the ability to provide anonymous feedback and the ability to receive a grade that reflected the average score given by two different peers.

In addition to impacting the quality of their discussion postings, students also described how peer feedback helped them improve the quality of the feedback they, in turn, provided to others. In other words, after receiving initial peer feedback, some students realized they had not been as in-depth or constructive as they could have been in providing feedback to others and thus improved the quality of their own feedback. Ko and Rosen (2001) noted that the ability to “cross-check” one’s understanding is an essential step in the learning process.

Learning by doing: Benefits to giving peer feedback

Perhaps the greatest potential benefit of the peer feedback process lies in the constructive aspect of forming and justifying peer feedback. For example, in this study many students described how they benefited from providing peer feedback. Through this process, they reflected more critically on the discussion postings for which they were
providing feedback as well as on their own postings and how they could be improved in a similar manner (Juwah, 2003). Many authors have suggested that this type of reflection contributes to the assessor’s comprehension of the topic by forcing him/her to reflectively analyze postings and to think about what constitutes high-quality work (Henderson, Rada, & Chen, 1997; Topping, 1998). According to Dunlap and Grabinger (cited in Dunlap, 2005), “The process of reviewing someone else’s work can help learners reflect on and articulate their own views and ideas, ultimately improving their own work” (p. 20). Furthermore, requiring students to justify their peer ratings by specifying which level of Bloom’s taxonomy was demonstrated in the peer response forced them to engage in activities at a higher level of cognitive skill: providing explanations, making justifications, and drawing conclusions (King, Staffieri, & Adelgais, 1998). Finally, Garrison, Anderson, and Archer (2000) argued that an essential element of online learning rests with what they referred to as “cognitive presence,” which allows learners to construct meaning through sustained reflection and discourse, which is after all, the focal point of the peer feedback process.

Limitations and suggestions for future work

The results of this study are limited by the small sample size, the relatively short duration of the study, as well as the fairly limited scale used to judge the quality of student postings. Conducting the study over a longer period of time, with a rating scale that allows for greater improvement, could result in a measurable difference in the quality of student postings. Furthermore, providing more time, up front, to discuss the benefits of the peer feedback process and to train students to use the rating scale more effectively might impact students’ perceptions of the value of receiving feedback, particularly in relationship to the perceived value of instructor feedback. Given that feedback is likely to become an increasingly complex and important part of the online learning process (Mory, 2003), it is important that educational practitioners have access to relevant information regarding how to effectively use peer feedback to increase student learning. While the results of this study suggest that peer feedback is a viable alternative to instructor feedback, specifically related to maintaining the quality of student postings, additional research is needed to determine the most effective means for facilitating the process in an online learning context.

Implications and conclusion

Discussions play a key role in online learning environments, providing the primary means for students to exchange ideas, offer explanations, share multiple perspectives, clarify understandings, and engage in other types of high-level discourse (Dunlap, 2005; King et al., 1998). However, “facilitating discussions is the single most time-consuming and effort-intensive component of an online course” (Dunlap, p. 21). In order to decrease instructors’ workload, without jeopardizing students’ learning, instructors need to implement strategies that enable them to share the responsibility for feedback with their students.

Results from this study highlight students’ perceptions of the importance of feedback in an online environment and specifically point to the expectation that feedback consist of quality rather than quantity of feedback, and that it be delivered in a timely manner. Although the survey results indicated that student ideas about the value of peer and instructor feedback did not change over the course of the semester, interview comments helped us determine where the specific strengths and weaknesses of the feedback process occurred. While many of the strengths seemed to be related to the inherent value of participating in the feedback process (e.g., reflection during the feedback process, improving posts and feedback), weaknesses seemed to be associated, at least to some extent, with the logistics of the process (e.g., time delay from providing feedback to receiving feedback). Perhaps if instructors can simplify the logistics involved in giving and receiving peer feedback, and can somehow assure the importance and validity of peers’ responses, students will be able to appreciate and accrue the potential benefits. Furthermore, if the use of peer feedback can decrease an instructor’s workload in an online course while continuing to maintain a high quality of postings, this may offer a viable alternative, or at least a reasonable supplement, to facilitating learning in an online course. That is, by addressing these logistical issues, it may be possible to increase both the efficiency and effectiveness of the process, as well as the perceived value for the participants. As summarized by one student:

I think that if it were developed a little more, I think it would be really effective. It seemed kind of OK I think right now it’s of value to the person evaluating, but I don’t really think it’s much of a value to the person receiving it. It’s kind of like, “Ok great.” But I think that maybe if it wasn’t every week, and maybe in a different format than these discussion postings, the peer evaluation would work great. … That’s my opinion. I think it’s a good beginning, but I think it could be built much more.
References


