

# Designing a Peer Rating System for Asynchronous Discussion

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## Abstract

*The development of technologies enables us to create online learning environments. As online learning is expanding its role in higher education, it becomes one of fundamental issues how to create online learning environments to facilitate online interaction. One of the methods is using a discussion board where learners can interact with other participants. A peer rating system can help (a) motivate learners to actively participate in discussion, (b) provide learners with opportunities of assessing other discussions believing that assessment is a tool for learning, and (c) assess learners' participation in terms of quality, not quantity, reducing the faculty's workload. This paper will explore a way to facilitate and motivate learners to actively participate in asynchronous discussion by using a peer rating system.*

Although spoon-feeding education used to be considered a good way to instill students with facts and information, it is now regarded as impossible for teachers to feed knowledge to students in the era of information. Rather, searching for the right information, managing information, and making it meaningful knowledge should be the fundamental objectives of current and future education. Accordingly, learning should be considered as a process for constructing knowledge, which is to make information meaningful and relevant, not as a process of the simple transmission of information.

According to Mayer (1992), there are three views of learning and instruction: learning as response acquisition, learning as knowledge acquisition, and learning as knowledge construction. From the perspective of constructivism, the third view, learning as knowledge construction, means highlighting "the interaction of persons and situations in the acquisition and refinement of skills and knowledge" (Schunk, 2004, p. 287). Constructivism regards learning as learners' active construction of knowledge. A lot of constructivists have been focusing on theories and strategies for helping learners construct their own knowledge representations.

Along with that, instructional designers have been studying how to create learning environments in which technology supports the construction of knowledge. More specifically, since it is obvious that online learning environments differ from traditional classroom environments, existing classroom teaching methods are unlikely to be effective in online learning environments. Accordingly, new teaching methods and techniques for online learning environments should be developed to help learners interact with contents and others and to construct knowledge for themselves. The purpose of this paper is to find a way to help learners construct knowledge in online learning environments, motivating them to be actively engaged in online discussion through a peer rating system.

## Online Learning Environments and Interaction

Just as Brown and Duguid (2002) say that "New technologies increasingly complement classroom and campus-based practices (p.XXII)," the development of technologies enables us to create Web-based learning environments. However, it does not mean that we simply transform traditional classrooms to the Web. Rather, "new and better ways are derived from constructivist theories and their related concepts such as knowledge-building, meaning-making, collaboration, and authentic, relevant, and student-centered learning" (Murphy, 2003, p. 1).

Online learning environments can be used as a supplement to face-to-face instruction, in a blended mode with face-to-face instruction, and in web-based instruction without face-to-face instruction (Mishra, 2002). Currently, a number of universities and colleges offer courses and programs through course management systems (CMS) such as Blackboard and WebCT. In 1998, 1.5 million students were estimated to have taken part in online courses (Smith & Winking-Diaz, 2004) and the number of students taking online courses is rapidly increasing.

Online learning environments can provide learners with such advantages as flexibility in time and place, and easy access to learning materials. Bonk (2002) conducted a survey of online training to 201 trainers, instructional designers, training managers, and human resource personnel in 2001. He identified that 86 % of the respondents were primarily interested in Web-based learning because it increased access to

learning. Also, ability to track learner progress, the standardization of content and assessment procedures, greater flexibility in delivery, and learner satisfaction were considered as advantages of online learning.

One of the most important advantages is that online course can “create greater opportunities for instructors and students to interact more frequently, communicate more effectively, and collaborate on learning projects and research” (Smith & Winking-Diaz, 2004, p.1). Even though critics usually argue that interactivity is the missing element in online learning, it is broadly believed that current technologies can support effective interaction through learning experiences (Muirhead, 2001).

However, “interactivity does not simply happen because the materials and tasks are presented to students for their consumption” (Smith & Winking-Diaz, 2004, p.3). There are a number of challenges in online learning environments to both teachers and students. First of all, teachers tend to overlook the amount of time required to create and maintain courses and evaluate students’ performance, but they shortly realize that they do need significant amounts of time to provide effective interaction in online learning environments. In addition, statistics shows that student attrition from online learning is relatively high (Hodges, 2004; Smith & Winking-Diaz, 2004). Usually, in online learning environments, students are likely to feel isolated resulted from the lack of immediate social interaction. Furthermore, learners need to change themselves to more active and self-directed learners, not passive ones (Muirhead, 2001).

### **Asynchronous Discussion**

According to Milheim, “on-line interactivity has the potential of enhancing the quality of distance education, while improving student interactivity to create a climate that supports cooperative learning, critical thinking activities, and meaningful tutor/student academic collaboration” (Muirhead, 2001, Importance of Interactivity Study section, ¶. 1). Then, how can we implement the idea of interaction in online learning environments?

A common method to increase interaction in online learning is asynchronous discussion where learners can exchange ideas and interact with other participants. There are a number of reasons that online discussion is a critical part of distance learning. The processes and activities of exposing to opposing or multiple viewpoints, sharing and negotiating interpretations, group reflection, and collaboration with others result from “many-to-many patterns of interaction such as what might be promoted through opportunities for dialogue, conversation or discussion” (Murphy, 2003, p. 2). Wiley (2002) mentions the following:

From pragmatic matters such as the degree to which social interaction lowers student drop out rates, to pedagogical considerations around the depth of understanding students gain by negotiating the collaborative solution of problems to simple increases in student satisfaction with online courses due to opportunities for socialization, encouraging dialogue among our students increases learning in a variety of domains and meta-domains. (p. 1)

However, it is much harder to facilitate online discussion and measure learners’ contribution to the discussion than it appears. Often, “groups of learners on online courses, in common with other online communities, are generally found to comprise both highly participative individuals and those who appear to contribute little to group discussions” (Williams, 2004, ¶ 1). In addition, Dennen (2002) states the following:

All aspects of a course discussion — initiation, facilitation, conclusion, and feedback — require different approaches when an asynchronous medium is used....There is no traditional instruction analog to asynchronous discussion, and thus this new medium needs to be examined closely in order to generate knowledge that will help online instructors learn and make informed decisions about how to design and facilitate asynchronous course interactions. (p. 1)

### **A Peer Rating System**

Several studies shows that online discussion often fails to adequately engage students in learning (Smith & Winking-Diaz, 2004). Even though student interaction is a key for fostering learning by integrating personal experiences into class discussions and gaining insights from other students, it is often found that many students are not actively engaged in online discussion, providing and receiving online feedback (Muirhead, 2001). Furthermore, as the number of students taking an online course increases, teachers do not have enough time to read and evaluate all the postings. Then, how can we design asynchronous discussion in which learners actively participate? And how can we assess their participation without increasing the faculty’s workload?

For these issues, a peer rating system on online discussion can be applied, where learners post their ideas, questions, and reflections, read others' postings, and rate them according to provided assessment rubrics. Peer rating is one form of peer assessment. Peer nomination and peer ranking are other forms of peer assessment. The peer assessment has been observed as a method to make students learn more and think more (Falchikov, 1986; Boud, 1989; Fry, 1990; Williams, 1992). Also, peer rating can improve students' writing skills through writing their own works and reading others' works (Pope, 2001).

The peer rating system in online discussion is a way to facilitate asynchronous discussion which provides learners with opportunities of collaboration, sharing, exploring multiple viewpoints and perspectives. This process can help learners reconstruct their own knowledge at the same time that they provide a valuable assessment service. Some activities that learners are expected to do for the online discussion with the peer rating system include:

1. Preparation: Learners are expected to read materials or listen to lectures for discussion.
2. Posting: Learners are expected to actively post their ideas, questions, and reflections based on readings and lectures as well as respond to the messages of others.
3. Reading others' postings: Learners are expected to read others' postings.
4. Rating: Learners are expected to rate others' postings according to provided assessment rubrics.
5. Management of their own learning: Learners are expected to enhance their postings to attain higher rating scores.

According to McLoughlin and Luca (2000), "There is a new wave of pedagogy advocating 'alternative assessment' in which assessment is integrated with learning and learning processes with real-life performance as opposed to display of inert knowledge" (Alternative assessment using technology section,

¶. 1). They argue that the authentic assessment is based on constructivism and the learners are regarded as the chief architect of knowledge building. They designed a course unit called "Interactive Multimedia Development Methodologies" and created peer-supported learning tasks which consisted of four processes: Criteria used by students for peer assessment, Student reflections on problem solving strategies, Student opinions of the assessment methods used, and finally Student perceptions of peer feedback as support for learning. From the study, they found that the integration of technology into an innovative assessment approach resulted in deep learning and students were engaged in active and reflective learning. Finally, they concluded that "the technology helped to foster the processes of learning by exposing learners to multiple views, achieved by assessment design and online discussion" (Discussion section, ¶. 3).

The peer rating system is expected to help (a) motivate learners to actively participate in online discussion, (b) provide learners with opportunities of assessing other discussions believing that assessment is a tool for learning, and (c) assess learners' participation in terms of quality, not quantity, without increasing the faculty's workload.

### **Motivation in Online Learning**

Motivation is a key element for successful learning and teaching. According to Schunk (2004), motivation can be determined as "the process of instigating and sustaining goal-directed behavior" (p. 329). That is, highly motivated students are more likely to be engaged in activities that facilitate learning. However, motivation students in online learning environments can be challenges to instructors because of technology, isolation, poor communication skills, English as a second language, and lack of connection between content and *students'* needs (Beffa-Negrini, Cohen, & Miller, 2002).

Many researchers have been searching for strategies or techniques to motivate learners in learning. However, it is believed that motivational strategies and methods in online settings are different from those in face-to-face classrooms. According to Bonk (2002), relevant and meaningful materials, timely and responsive feedback, goal-driven and product-oriented activities, personal growth, interactive and collaborative activities, engaging in discussion that involves multiple participants and a supportive community of learners are regarded as some of motivational principles.

The peer rating approach can help motivate learners to actively participate in asynchronous discussion. When learners have more control to their learning, intrinsic motivation is likely to be increased (White & Weight, 2000). Also, the rating scores for final grades can play a role to increase extrinsic motivation. Since being expected to control and manage their rating scores within online discussion and compare their own postings with others, learners are likely to be motivated to increase their scores by interacting with others with better postings.

### **Online Peer Feedback**

According to McLoughlin and Luca (2000), many socio-cultural theorists highlight “the importance of reciprocal understanding and transactional dialogue where knowledge is exchanged and modified in the light of peer feedback” (Alternative assessment using technology section, 2). Peer rating can help learners in online learning environments have “feelings of group cohesion, loyalty and belonging” (Pope, 2001, p.242).

The peer rating system can provide learners with opportunities of interaction among other participants. As stated by Mayer (1999), “Many of the popular instructional methods for promoting constructivist learning depend on interpersonal learning environments that enable discussion, modeling, guided discovery, and scaffolding” (p.152). Even though “the absence of face-to-face, peer, or teacher interaction possibly leads to negative educational experiences because of social isolation and working in an apparently impersonal environment” (Muirhead, 2001, Importance of Interactivity Study section, ¶. 2), the peer rating system can improve interactivity between students and teachers and among students by providing opportunities of giving and receiving online feedback.

### **Assessment on Learners’ Participation**

The peer rating (assessment) approach regards a learner as an active person. Students are expected to take responsibility for their learning through online discussion. As stated by Sluijsmans, Brand-Gruwel, Merriënboer, and Bastiaens (2003), “Assessment approaches promote integration of assessment and instruction, seeing the students as an active person who shares responsibility, reflects, collaborates and conducts a continuous dialogue with the teacher....The emphasis shifts to a representation of assessment as a tool for learning” (p. 23).

Furthermore, the peer rating system can reduce the faculty workload of grading learners’ participation. Rockwell, Schauer, Fritz, and Marx (1999) identify obstacles that discourage faculty from developing online education. From the study, they found “faculty tend to see distance education as a time demanding activity” (Obstacles To Teaching Via Distance section, ¶. 1). According to Dennen (2003), “some of the major complaints of online instructors in higher education are that the workload is high, particularly with regard to communicating with students, providing grades and feedback, and making sure students feel like they are connected” (p. 1). However, the peer rating system can automatically grade learners’ participation in online discussion in terms of scores. The scores can be directly used for a part of the final grades or as an incentive.

This approach cares about the quality of postings, not how many postings learners contribute. Currently, many instructors grade online discussion based on each participant's overall number of postings and responses. To measure quality of learners’ participation, significant time and effort would be required because human raters have to review the contents of individual messages (Wiley, 2002). However, in the peer rating system, all participants can be human raters for reviews of other messages. In addition, they will also gain credit by participating in rating comments.

### **Conclusion**

We live in the era of information. It will become increasingly important to search for right information, to manage information, and to make it meaningful knowledge. Because of the development of technology, we can take online courses without commuting to campus. Thus, the number of students taking online courses is rapidly increasing.

In online learning, interaction has been a pivotal component for success. Accordingly, instructional designers should discover strategies and techniques by which learners are able to be actively engaged in courses. Relevant and meaningful materials, timely and responsive feedback, and interactive and collaborative activities are good examples.

The peer rating approach introduced in this paper is expected to motivate learners to actively participate in asynchronous discussion by giving them opportunities to interact with other participants, providing others feedback and rating them according to provided rubrics. In addition, this approach also can reduce the faculty’s workload of grading learners’ participation.

## References

- Beffa-Negrini, P. A., Cohen, N. L., & Miller, B. (2002). Strategies to motivate students in online learning environments. *Journal of Nutrition Education & Behavior*, 34(6), 334-340.
- Bonk, C. J. (2002, March). Online training in an online world. *Education at a Distance*, 16(3). Retrieved April 6, 2004, from [http://www.usdla.org/html/journal/MAR02\\_Issue/article02.html](http://www.usdla.org/html/journal/MAR02_Issue/article02.html)
- Boud, D. J. (1989). The role of self-assessment in student grading. *Assessment & Evaluation in Higher Education*, 14(1), 20-30.
- Brown, J. S. & Duguid, P. (2002). *The social life of information*. Boston, MA: Harvard Business School Press.
- Dennen, V. P. (2002, April). *Learning online through asynchronous discussion: Instructional design and facilitation issues*. Presented at AERA 2002, New Orleans, LA. Retrieved January 20, 2004, from <http://www.vanessadennen.com/aera02.pdf>
- Dennen, V. P. (2003, August). *Designing peer feedback opportunities into online learning experiences*. Presented at the meeting of Distance Teaching and Learning Conference, Madison, WI. Retrieved January 5, 2004, from [http://www.uwex.edu/disted/conference/Resource\\_library/proceedings/03\\_02.pdf](http://www.uwex.edu/disted/conference/Resource_library/proceedings/03_02.pdf)
- Falchikov, N. (1986). Product comparison and process benefits of collaborative peer group assessment. *Assessment and Evaluation in Higher Education*, 11(2), 146-166.
- Fry, S. A. (1990). Implementation and evaluation of peer marking in higher education. *Assessment & Evaluation in Higher Education*, 15(3), 177-189.