The Design and Evaluation of a Peer Ratings System for Online Learning Communities

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Abstract
In this paper we explore the idea that ratings systems, common across successful e-commerce sites, can better engage individuals in online learning networks. To test this we implement a ratings system as a mechanism for influencing social interaction in our university’s online learning community (OLC). Our research measures the impact this system had on five graduate courses over the course of two semesters. Our research also provides insight into how user-driven content can provide input into other systems, such as a recommender system to aid in fostering new online social connections.

1. Introduction
Today’s interactive and increasingly social Web 2.0 environment consists of individuals who are not just consumers of information but creators as well. As a result, web developers continually manipulate online environments to attract more users and stimulate increased online activity. While the motivations to do so may be advertising dollars, the end product has been a more engaging web experience that allows individuals to post and consume all types of data.

One particular online feature that has had a profound impact on e-commerce websites has been the ability for consumers to rate products and services. A 2008 eMarketer survey [1] discovered that this ability to rate products and services ranks first on a list of features Internet users desire most. In this research we attempt to replicate how individuals use ratings systems across e-commerce sites in an academic environment. More specifically, we design, develop and evaluate the integration of a ratings system into our school’s online learning environment in an effort to change attitudes and perceptions towards online learning and interaction. The system provides users with a non-obtrusive way to rate and review the blog posts of their peers.

2. Background
In higher education, information technology (IT) plays a crucial role. IT provides everything from course registration to course facilitation. In fact, 96% of learning institutions use some type of course management systems (CMS) [2]. Additionally, today’s students are more wired than ever, with many participating in multiple online social networking sites [3]. As these numbers continue to rise, students have come to expect IT to play a more innovative role in their education. Yet, only in recent years have learning institutions begun to integrate popular social software into the classroom.

2.1 Social Software Used in Education
Studies in online collaboration have shown that virtual communication patterns correspond in similar fashion to real-life communication [4, 5]. Consequently, online environments can complement face-to-face learning to provide students and instructors with different forms of interaction and new ways to build community [6]. As in face-to-face communication, members of any online learning community (OLC) should be able to state what they think, comment on what others have said, collaborate on common interests, and share information in many forms. Research by Stacey [7] found that higher quality electronic communication helps to engage students and also aids in their learning of course-related material.

Web 2.0 technologies, such as blogs and wikis along with peer-to-peer networking and file sharing, empower individuals to take ownership of their content while also making it easier to pursue social and/or scholastic ties with their peers. In one study, Brescia and Miller [8] found that benefits to using blogging in the classroom included enhanced student reflection, increased student engagement, portfolio building, and better synthesis across multiple activities. And increasingly, more individuals are gaining access and familiarizing themselves with
these technologies, making their introduction into the classroom, more-or-less, seamless.

Since 2006, our action research has provided our school, a graduate-only university in the U.S., with a successful OLC. However, while our software has yielded strong interest across our campus as well as continued adoption by a number of course instructors, we continue to struggle with ways to motivate individuals to participate outside their respective knowledge communities.

2.2 Lurking

To date, blogging has been a critical component of our OLC. Blogging provides students with an important voice, helping to expand in-class discussions to virtual spaces. However, our results have shown minimal interaction occurring outside of the basic blogging requirements. A content analysis of historical OLC data has identified very little feedback across blog posts with less than one comment existing per entry.

This lack of active participation is not new nor is it isolated to our software. Research in online communities categorizes passive participants in online environments as lurkers. Lurkers are individuals who read but do not contribute in online communities. In some online communities, the number of passive participants can be as high as 84% [9]. While research suggests that not all lurking is negative, since it can result in external knowledge sharing [10, 11], greater participation of these silent parties is still largely sought. When users are not fully engaged and/or interacting with peers, levels of social presence, or the degree to which users perceive others in the community, can degrade and with it the quality of the OLC.

Additionally, while high levels of social presence are desirable, maybe a more important factor considers the loss of critical feedback that commenting provides. As a blogger, one may wonder how his or her blog is perceived by those viewing it, or if it is even being viewed at all.

One possible reason for a lack of commenting may be the time it takes to construct quality comments, which can be considerable if an individual is worried about publicly displaying their feedback. Or it may be the case that a user only wishes to let a blogger know that they have read their blog and whether or not they thought it was interesting, without being too descriptive or even having to type. With the implementation of a blog ratings system, users of our school’s OLC now have a quick and easy mechanism to do so.

3. Towards a Ratings Systems

The primary objective of this research is to integrate a ratings system with the blogging component of our OLC. A primary goal has been to stimulate learning, social interaction and community. Additionally, a ratings system can provide a rich source of meta-data that can be used to influence the habits of users within a knowledge community.

3.1 Ratings Used in E-commerce

Ratings systems have been successfully used across most e-commerce sites such as Amazon and eBay. Rating systems are quick and easy methods for users to leave an opinion or evaluation about an object, person, place or thing [12]. Figure 1 depicts a typical ratings setup used at Amazon. In e-commerce websites such as eBay and Amazon, products are rated by consumers, thus adding to the collective knowledge-base for that product [13, 14, 15]. Consequently, our goal is that ratings can be used to help OLC participants acquire a personalized reputation as well as help formulate reputations of other members later on [16].

![Figure 1 - Amazon Ratings System](image)

While many different rating systems exist, many function on a simple 1 through X rating-scale, where the number selected indicates how interesting a consumer perceives a product or service. When consumers rate items, they add valuable meta-data that can provide site visitors with a high-level summary of a product or service. Outside of the title or product name, ratings are often the first piece of information a consumer views and can play a pivotal role in consumer and post-consumer transactions.

3.2 Peer ratings in Education

The notion of ratings is not isolated to e-commerce and has been used by other industries as well. Another popular use of ratings has been in restaurant and movie reviews. Similar to how e-commerce sites implement ratings, these types of ratings offer consumers quick insight into the quality
of a restaurant or movie, as voted on by a group of patrons.

Rating systems have also been used in educational settings. In an academic environment instructors may use peer-ratings as a mechanism for feedback across group projects. Additionally, the use of clickers in the classroom can be utilized in a way to rate and rank content presented by course instructors in real-time.

We believe a ratings system can offer a new dimension to learner engagement and social interaction across our school’s OLC. This belief is supported by educational research in the area of peer-assessment. Johnston and Miles [17] found that students took peer-assessment seriously and Pope [18] found that both peer and self assessment, contribute positively to a student’s work performance. Johnston and Miles [17] further discovered that peer-assessment allowed students to learn about their own effectiveness in a group setting and Somervell [19] found that peer-assessment helped promote independent, reflective and more critical learners. Peer assessment has also been found to motivate participations and foster student initiative to learn [20].

3.3 Ratings as Positive Peer Pressure

Whether it is e-commerce, movies or education, ratings offer high-level information that can influence a user’s decision to consume a product or service. The goal of peer ratings in a social learning environment is to provide a quick and easy-to-use mechanism for user feedback, which in turn can contribute to greater levels of learner-engagement, user interaction and overall course satisfaction.

Discussed in detail in the following section, a carefully designed ratings system can create exposure to information across a social learning environment by highlighting and broadcasting top-rated content. Through this exposure, we believe we can positively influence a user’s online habits to foster greater levels of interest in content across the site.

As described in the field of captology, Fogg and Nass [21] state that computing technologies can apply social dynamics to convey social presence and to persuade. In a ratings system, social dynamics can come in the form of reciprocity. Reciprocity or, more specifically, norms of reciprocity considers the idea that if the community provides a user with valuable meta-data, it is a user’s responsibility to give back to the community. In this research we focus our attention on blog ratings. Furthermore, when an individual believes that others are interacting and exchanging information, that individual may be more inclined to engage themselves.

4. Theoretical Model

Theory has been an important driver in the creation of our OLC and the addition of new software components. During the course of our research we have developed a working theoretical model to help guide how new sub-components can facilitate learning, social interaction and community within an academic environment [22]. What has emerged is a model based on three fundamental theories of learning and is illustrated by Figure 2.

![Figure 2 - Theoretical Model for Online CoPs in Education](image)

In today’s classroom, activity based learning, represented in our model by **activity theory**, is common where students and faculty combine the use of technology to accomplish course tasks. Activity theory also considers aspects of motivation and engagement. In activity theory activities are goal-directed, where multiple ways exist to achieve those goals, oftentimes through adaptive means [23]. For this research, we use blogging, rating blogs and commenting on blogs as specific activities to measure.

These activities, in turn, accommodate for the unique learning styles of the individual, represented in our model by **constructivism**. Constructivism states that learning can be based on the interaction and experiences of the learner [24, 25]. These interactions and experiences can be directly influenced by a user’s engagement with a ratings system. Some learners may benefit from the community’s assessment of a blog post, while others may be more interested in providing their assessment of blog posts across the OLC. Consequently, the learner is provided with multiple paths to learn and interact.

Activity theory also triggers engagement in an online community, represented in our model by **social presence theory**. Social presence theory looks at the degree to which an individual’s perception of...
the online community, affects his or her participation in that community [26, 27]. As briefly touched upon above, some users may only participate in an OLC if there is an active level of participation. A ratings system provides learners with a quick and easy method of providing feedback into the community.

Together, these three theories provide a well-rounded model that considers the community, the individual and how each can be influenced and enhanced with technology.

5. System Design

5.1 Elgg Online Learning Community

In spring of 2006, we evaluated a variety of proprietary and open source social software. We compared these technologies based on cost, usability, extensibility, customizability and the range of features each offered. We decided on Elgg, a relatively nascent tool at the time, for its range of social features and easy-to-use interface. Available through SourceForge.com, Elgg comes bundled with blogging, file sharing, the ability to create unlimited sub-communities and peer-to-peer (P2P) networking capabilities. Additionally, Elgg provides for the ability to restrict access to data across a number of levels, including individual-level, community-level, logged in user-level and also custom levels of restriction.

The Elgg system has been used across courses at our school for the past two years. The primary use of the software has been for blogging and creating student-centered course portfolios. However, the majority of activity has come from course-based weekly or bi-weekly blogging. Consequently, a major problem we have faced is user retention and sustained engagement outside of courses. Unfortunately, many students perceive the software as ‘yet another required piece of institutional software’.

Our goal as social software researchers was never about producing an institutional resource, but to offer a user-centric and self-sustaining social learning environment for students to interact and share knowledge. To facilitate this idea further, we modified the Elgg homepage design to present users with a randomized summary of top-rated blog content from across the site, driven primarily by a newly added ratings system.

5.2 Elgg Ratings System

Designing a ratings system for the Elgg OLC began with the rule of thumb, “offer a simple way to allow individuals to provide feedback on a blog post.” While there are a number of different design patterns available, we employ the pattern encoded by the Yahoo! Developer Network [12, 13].

Additionally, for the look and feel of the interface, we mirror Amazon’s design. Shown in Figure 1, Amazon provides more than a basic mechanism to rate items, it also provides a breakdown of a product’s ratings, a design we feel will be beneficial for both the blogger and the reader. Further design components are listed as follows:

1. Extend the existing open source software, Unobtrusive AJAX Rating Bars V.1.2.2 [28].
2. Individuals cannot rate their own blogs. Research is clear stating that individuals are unable to provide unbiased opinions about their work [29, 30].
3. Ratings use 1-5 stars, where 1 star is the lowest rating.
4. A breakdown of ratings is available when hovering over the average rating (See Figure 3).
5. Ratings are displayed and editable at the individual blog level and the blog summary but not from the homepage.
6. Ratings are displayed below the blog post title.
7. If a user has not rated a blog, “Rate this blog” text will appear next to the stars.
8. If a user is not logged in, “Log in to rate this blog post” text will appear next to the stars.
9. To avoid ballot-stuffing [31, 32], a user can rate a blog post only once and users who are not logged into the system cannot rate blog posts.
10. If a user has already rated a blog post, that user can change his or her vote by selecting a different rating.
11. A user can delete a blog post subsequently deleting those ratings from his or her profile.
12. However (continued from 11), ratings are not deleted from the database when a blog post is deleted for the purpose of creating user recommendations based on these blog recommendations.

It was not enough to wait for individuals to click on a blog post to view ratings, therefore it was deemed important to create exposure to blog posts and ratings from the homepage. To accomplish this, we modified the Elgg homepage to showcase top-rated content from across the site. The reason was
two-fold. Unfortunately, many individuals do not explore content created across the OLC and usually remain within the confines of their course community. Therefore a primary goal was to create exposure to content from across the site. A secondary goal centered on showcasing top-rated content from. The objective here was to highlight content that users from across the site deemed as important or interesting.

Figure 3 represents the ratings interface as viewed in the blogging space. After a user enters his and her respective community blogs, that individual is presented with a chronological list of all blog posts across his or her community. Individuals can then drill down to view the complete breakdown of ratings for each blog post by hovering over the hyperlink.

6. Research Design

Our research design is categorized as one-group pretest-posttest quasi-experimental design. Similar to the characteristics of a field experiment [33, 34], we measure the effects of the ratings system on a specific population within an existing organization. While the organization, a graduate school, is not a “naturally” occurring setting, it is pre-existing and baselines exist for which to compare results. In this research we explore the following research questions:

1. Will blog rating impact course learning?
2. Will blog ratings impact social interaction?
3. Will blog ratings impact course motivation?

7. Results

7.1 Pretest Data

A pretest was distributed to 106 students across five courses implementing the OLC and tracked student perceptions before using the online learning environment. Of these courses, 65 usable surveys were collected. A portion of the pretest asked individuals to rate their perceptions that a rating system could foster learning and interaction.

A five-point numeric scale was used. Detailed in Table 1, individuals were not overly optimistic about a ratings system. Very few respondents (36%) indicated that the ability to rate blog posts seemed important. Additionally, less than half of our respondents believed that a rating system would increase learning (29%) and/or interaction (33%). However, it should be noted that the majority of responses were, in fact, neutral.
Table 1 – Ratings System Construct (pretest)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A rating system for blogs will increase interaction with my classmates.</td>
<td>8%</td>
<td>25%</td>
<td>49%</td>
<td>11%</td>
<td>8%</td>
</tr>
<tr>
<td>A rating system for blogs will increase learning for this class.</td>
<td>6%</td>
<td>23%</td>
<td>51%</td>
<td>12%</td>
<td>8%</td>
</tr>
<tr>
<td>The ability to rate the work of my peers is important.</td>
<td>5%</td>
<td>31%</td>
<td>37%</td>
<td>18%</td>
<td>9%</td>
</tr>
<tr>
<td>The ability for my peers to rate my work is important to me.</td>
<td>14%</td>
<td>28%</td>
<td>34%</td>
<td>18%</td>
<td>6%</td>
</tr>
</tbody>
</table>

7.2 Site Usage

From mid-August to mid-December of the fall 2008 academic year, the online environment averaged 170 active users (active users are users who logged into the system at least once during a given month). During this timeframe, and detailed in Figure 5, 695 blog posts were created, generating 802 blog comments and 616 blog ratings.

7.3 Posttest Data

Posttest questionnaires were distributed to students across the same 5 graduate courses receiving the pretest and resulted in 63 usable responses. Unfortunately, we were unable to link posttest data with pretest data. 97% of respondents indicated using the OLC daily or weekly. 85% of individuals indicated blogging daily or weekly and 11% blogged bi-weekly or monthly. Only 5% reported that they did not blog.

With regards to blog ratings, 29 indicated using the rating system periodically throughout the semester. Since only 5% of respondents indicated that they did not blog, 95% of respondents would have been exposed to the blog ratings system in some fashion.

From our 29 ratings system adopters (to be identified as ‘raters’ going forward), 82% rated items weekly or biweekly and 18% rated items on a monthly basis. 34 respondents indicated that they did not rate blog posts (to be identified as non-raters going forward). Table 2 provides a complete breakdown of posttest responses related to the ratings system.

While it is difficult to assess the shift from pretest to posttest since they could not be linked, interesting findings did arise between raters and non-raters. In terms of overall usefulness, 49% agreed or strongly agreed that the ratings system was useful, compared to only 9% of non-raters. When asked if ratings increased interaction 39% of raters agreed or strongly agreed compared to only 9% of non-raters. Additionally, 35% of raters responded that the ratings system enhanced learning compared to only 3% of non-raters. Overall the ratings system provided little, if any, motivation for non-raters to post blogs (6%), while 41% of raters agreed or strongly agreed with this statement.

Although 9% of non-raters believed blog ratings to be excellent input for discovering peer-recommendations, 24% agreed or strongly agreed that the ability to rate other content should exist. These numbers were considerably higher for raters with 59% agreeing or strongly agreeing that blog ratings provided excellent input and 65% agreeing or strongly agreeing that ratings across different content should exist.

Surprisingly, 42% of non-raters disagreed or strongly disagreed that they were comfortable rating the blog posts of their peers compared to only 7% of raters. More surprisingly, however, was the large percentage of non-raters disagreeing or strongly disagreeing that ratings were an excellent mechanism for feedback (61%), compared to 28% of raters, which we also felt was high. Lastly, 30% of non-raters agreed or strongly agreed that they were comfortable having their blog posts rated, while this number was an impressive 76% across raters.
### Table 2 – Ratings System Construct (posttest)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ability to rate blogs was useful</td>
<td>14%</td>
<td>-</td>
<td>35%</td>
<td>9%</td>
<td>35%</td>
</tr>
<tr>
<td>Ratings increased interaction</td>
<td>4%</td>
<td>-</td>
<td>35%</td>
<td>6%</td>
<td>28%</td>
</tr>
<tr>
<td>Ratings increased learning</td>
<td>7%</td>
<td>-</td>
<td>28%</td>
<td>3%</td>
<td>28%</td>
</tr>
<tr>
<td>Ratings helped me to think more critically while writing blog posts</td>
<td>7%</td>
<td>-</td>
<td>38%</td>
<td>15%</td>
<td>17%</td>
</tr>
<tr>
<td>Ratings helped me to think critically while reading blogs posts</td>
<td>10%</td>
<td>-</td>
<td>45%</td>
<td>15%</td>
<td>24%</td>
</tr>
<tr>
<td>Ratings increased my motivation to post blogs</td>
<td>17%</td>
<td>-</td>
<td>24%</td>
<td>3%</td>
<td>17%</td>
</tr>
<tr>
<td>Ratings were an excellent mechanism for feedback</td>
<td>7%</td>
<td>-</td>
<td>31%</td>
<td>12%</td>
<td>21%</td>
</tr>
<tr>
<td>I was comfortable having my blog posts rated by my peers.</td>
<td>24%</td>
<td>6%</td>
<td>52%</td>
<td>24%</td>
<td>14%</td>
</tr>
<tr>
<td>I was comfortable rating the blog posts of my peers.</td>
<td>10%</td>
<td>-</td>
<td>52%</td>
<td>12%</td>
<td>31%</td>
</tr>
<tr>
<td>Ratings were an excellent addition for this class</td>
<td>21%</td>
<td>-</td>
<td>28%</td>
<td>12%</td>
<td>24%</td>
</tr>
<tr>
<td>The ability to rate other content should exist</td>
<td>17%</td>
<td>-</td>
<td>48%</td>
<td>24%</td>
<td>24%</td>
</tr>
<tr>
<td>Blog ratings provide an excellent way to recommend connections.</td>
<td>9%</td>
<td>-</td>
<td>50%</td>
<td>9%</td>
<td>50%</td>
</tr>
<tr>
<td>I plan to continue to use the ratings system to rate</td>
<td>14%</td>
<td>-</td>
<td>31%</td>
<td>6%</td>
<td>28%</td>
</tr>
<tr>
<td>My experience rating blogs was positive</td>
<td>14%</td>
<td>3%</td>
<td>35%</td>
<td>18%</td>
<td>41%</td>
</tr>
</tbody>
</table>

1=Strongly Agree, 2= Agree, 3=Neither Agree nor Disagree, 4=Disagree, 5= Strongly Disagree

Detailed in Table 3, we also collected user’s perceptions of blogging. It was interesting to discover large disparities from raters compared with non-raters. We discovered that 69% and 75% of raters agreed or strongly agreed that blogging increased interaction and learning. Across our population of non-raters, this number was significantly lower at 35% and 56% respectively. Additionally, with regards to building community, 65% of raters agreed or strongly agreed that blogging fostered higher levels of community, versus only 15% of non-raters.

A surprising discovery was that raters were only slightly more positive about their blogging experience (48%) when compared against non-raters (44%). Although, it should be stated, that fewer raters disagreed or strongly disagreed (6% versus 18%). Planned continued blogging was exceptionally low for both populations, with only 12% of non-raters and 35% of raters indicating that they would continue to blog after the semester.
Table 3 – Blogging Construct (posttest)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>n =29 n=34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blogging increased interaction with my classmates</td>
<td>31%</td>
<td>6%</td>
<td>38%</td>
<td>29%</td>
<td>24%</td>
</tr>
<tr>
<td>Blogging increased learning for this class</td>
<td>34%</td>
<td>12%</td>
<td>41%</td>
<td>44%</td>
<td>24%</td>
</tr>
<tr>
<td>Blogging was an excellent tool for building community</td>
<td>24%</td>
<td>6%</td>
<td>41%</td>
<td>9%</td>
<td>31%</td>
</tr>
<tr>
<td>I plan to continue using the OLC to blog</td>
<td>14%</td>
<td>6%</td>
<td>21%</td>
<td>6%</td>
<td>28%</td>
</tr>
<tr>
<td>My experience blogging was positive</td>
<td>14%</td>
<td>6%</td>
<td>34%</td>
<td>38%</td>
<td>41%</td>
</tr>
</tbody>
</table>

7.4 Qualitative Data

Qualitative feedback from individuals was also collected. Not surprisingly, open-ended responses were mixed. One individual stated, “Ratings are very arbitrary, though the rating system is incredibly easy to use.” Another stated, “I think the ratings system is pointless. I cannot conceive of a why that it would inspire community or communication.” Some responses were optimistic about the ratings system, but would have liked to see it incorporated more into course objectives, “The rating system function worked very well, but it was rarely used.” Another stated, “The star rating system is very easy to understand and should definitely be kept in the user interface. Additionally, some responses reflected the general low adoption of the system, “Since it was optional, not many people used it.”

8. Discussion and Implications

Today’s World Wide Web is a dynamic environment fueled largely by user-driven sites that support peer networking, blogging and multimedia. During the past two years we have discovered the positive impact an OLC has had on graduate courses at our university [22]. In this research, we incorporated a blog ratings system to support learning, interaction and community building across our school’s OLC. Although user adoption was mixed, a number of interesting findings emerged.

8.1 Learning, Social Interaction and Community

It was encouraging to discover that raters perceived higher levels of both social interaction and community than non-raters. This outcome is in line with our perceptions that more engaged users will experience greater value form that community. However, it was interesting to discover that perceived learning was not higher than non-raters. This outcome can possibly be attributed to the fact that ratings, alone, do not add to learning. Going forward we have adapted our instruments to assess whether or not individuals learned more from high-rated versus low-rated blogs and whether or not they were more inclined to read high-rated versus low-rated blog posts.

8.2 Ratings System and Course Integration

The initial response to the ratings system was low, with adoption levels around 50%. However, survey responses did reveal positive correlations between ratings and value-added blogging. Consequently, a critical next step involves working closer with course instructors to implement the technologies within the classroom. While the software was demonstrated at the start of each semester, there are too many system features to provide in-depth training. As a result many course instructors did not require students to rate blog posts, only that they post blogs.

In an ongoing study, blog ratings have been directly applied to course learning objectives and students have been required to rate the posts of their peers on a weekly basis for course credit. While data analysis is ongoing, results already show a 90% system adoption, with over 4,500 blog ratings made across 1,200 blog posts.

8.3 Social Dynamics

49% of raters agreed or strongly agreed that the ratings system was useful, with 18% disagreeing or strongly disagreeing. This resulted in 36% neither agreeing nor disagreeing. An important question we must ask ourselves is how to better engage these neutral parties. More
specifically, what design changes can we make to improve user’s OLC experience.

Norms of reciprocity play a critical role in social networking software. As mentioned in our qualitative responses, when users do not perceive other members to be participating, they are less likely to participate themselves. Survey responses reflect this. Even across our population of raters, the perception that ratings were useful was low at only 49%. It may be the case that although individuals themselves were rating blogs, others were not, thereby reducing the utility of the ratings system as a whole.

We believe that as individuals continue to use the tool more frequently (possibly as a result of section 8.1) and as the number of people rating content reaches a critical mass, where meta-data provides useful information for site users, the ratings system will yield more positive outcomes.

8.4 Blog Ratings versus Blog Comments

One advantage a quick ratings system provides over other types of user feedback mechanisms such as commenting is the ability for users to leave feedback quickly and easily. Yet surprisingly, the number of user blog comments trumped the total number of user blog ratings (800 comments versus 616 ratings). While, this number is inherently skewed because one course used comments as a means to respond to conduct weekly assignments, we took it as a sign to modify the design of the ratings system. As a redesign, we enhanced the system to prompt users for additional feedback upon making a rating.

8.5 Ratings System Expansion

The rating system was primarily constructed as a mechanism to generate input for a user recommender system, which is a system specifically designed to foster new social connections based on some matching algorithm. While still in beta mode, the system measures two aspects:

1) how interested individuals are in formulating new social connections across the site and 2) how viable ratings are for fostering these connections.

The recommender system calculates user-generated ratings to determine possible social connections based on a similarity index. This system was less used than the rating system, primarily due to the fact that most individuals were unaware that the system even existed (even from those users who were displayed recommendations when they logged in). However, it was encouraging to find 59% of raters agreeing or strongly agreeing that blog ratings were an excellent way to recommend new peer connections.

Finally, this research marks the initial stages for a ratings system across our school’s OLC. Overall 64% of respondents indicated that ratings for other types of content should also exist. Consequently, this model can be developed further to include the ability to rate file uploads, wiki pages, status updates, etc. In turn, more rated content means more data that can be fed into the recommender system, possibly making for more accurate and more trusted social matches.

9. Conclusion

In this research we design, develop and evaluate a ratings system for the Elgg online learning environment. The system provides users with the opportunity to rate blog posts using 1 to 5 stars. The ratings system was incorporated into five courses at our university. After six months we measured the impact ratings had on course learning, social interaction and community building. Our findings indicate that compared against users who chose not to rate blog posts, raters experienced considerably higher levels of social interaction and community although levels of learning were not shown to be higher.

As we continue to build and extend our OLC design, we remain hopeful that with design modifications and better alignment with course instructors, we can foster higher levels of system adoption, in turn, fostering greater levels of learning and interaction across our school’s OLC.

10. References


