The Recommend Button: An Experimental Support for the Identification of Valuable Ideas in a Knowledge Building Community

by Jim Hewitt and Clare Brett
Ontario Institute for Studies in Education, University of Toronto.

Abstract

People in a knowledge building community are often faced with the problem of drawing communal attention to notes that contain promising ideas. To facilitate this process, we added a new software feature: a "Recommend" button. Clicking on this button suggests that the note's subject matter is worthy of deeper analysis by the community. The more people that "recommend" a particular note, the brighter its associated icon becomes. This new facility was first tested in two graduate-level distance courses. Our analyses suggest that "Recommend" is effective as a device for drawing attention to particular notes. We also found evidence that the button offers certain community-building advantages; the authors of recommended notes feel their ideas are appreciated and valued by their peers. However, we also discovered that some students were wary about recommending notes, fearing that it would hurt their own course grade by elevating other students in the eyes of the teacher.

Introduction and statement of the problem

One of the problems faced by a knowledge building community is that of identifying, within an online discussion, the promising ideas that experts are so good at identifying (Bereiter & Scardamalia, 1993). For every note that contains the germ of a useful idea, there may be dozens of notes of limited value. Consequently, emergent knowledge builders are constantly faced with the challenge of separating the wheat from the chaff; valuable new contributions can be easily lost or overlooked in the complex web of online messages. This can be a frustrating and time-consuming process. Moreover, once a promising idea is found, it can be difficult to convey its importance to other members of the community.

To support learners in their efforts to identify useful ideas, we have recently experimented with the design of a new software feature called the "Recommend" facility. The Recommend facility is an on-screen button associated with every note in a knowledge building database. When people feel that a note contains an idea of value, they can click on "Recommend" to recommend it to their peers. This causes a small icon to be displayed beside the note's title, signifying that the note is worthy of further attention. As additional

people recommend a particular note, the icon becomes brighter. This provides learners with a visual means of emphasizing the value of these notes.

To explore the utility of the "Recommend" button, our research focused on the following questions:

1. *What is the students' experience of using this new facility? What do they like, and not like, about the process of recommending notes?*
2. *How do graduate distance education students make use of the Recommend button?*
3. *Is there evidence that Recommended notes receive more community attention than non-Recommended notes?*

Background

A knowledge building community is a group of people who are dedicated to sharing and advancing their collective knowledge. The focus is on the community's ideas and the testing and improvement of those ideas (Bereiter & Scardamalia, 2003, Scardamalia & Bereiter, 2003) with the goal of making intellectual progress on challenging problems of understanding. Their objective is not to produce a final product – e.g., an essay or a report – but rather to work together to create new knowledge. From an educational point of view, engagement in knowledge building activity necessarily drives personal growth in the form of deeper understandings and engagement in higher order thinking processes.

Knowledge Forum is a collaborative online environment that Scardamalia and Bereiter (2007) have developed to support knowledge building. Knowledge Forum is a communal space where learners write "notes" that contain questions, theories, elaborations, evidence, and so forth. The software permits these notes to be linked together in flexible ways and organized in different configurations. Over time, the growth of the notes in Knowledge Forum mirrors, to some extent, the growth in collective knowledge as learners continue to improve and reorganize their online artifacts. Different forms of epistemological scaffolds are used in Knowledge Forum to support higher-order thinking skills, such as thinking types and "rise-above" functionality. Such scaffolds encourage metacognitive processes and support the mutual understandings so necessary to maintain communication and connection within these constantly changing collaborative environments (Hakkarainen, Palonen, Paavola & Lehtinen, 2004).

Although Knowledge Forum is usually successful in terms of facilitating learner engagement, the rapid proliferation of learner notes can also be a problem. Engagement in knowledge building necessarily involves the sharing of one's initial naïve ideas – ideas that may or may not prove useful in the long run. Often Knowledge Forum fills up quickly with such notes, creating a sense of information overload (Hewitt & Brett, 2007) and making it difficult for the community to know where to best focus their attention. In an effort to address this problem, we recently tested the efficacy of a new online scaffold called the "Recommend Utility". This new tool allows community members to use a

special tag to help identify notes that seem promising and worthy of further analysis. This study reports on our initial in-class trials of "Recommend".

The Recommend Utility

The Recommend utility was inspired by the "Like" facility in Facebook, and it operates in much the same fashion. People can click on a small "Recommend" link on the bottom, right-hand corner of a note to indicate that they wish to recommend the note to their peers (see Figure 1.). Clicking on the button causes a "thumbs-up" icon to be displayed adjacent to the note's title (see Figure 2). In addition, the number of recommendations is displayed at the bottom of the note (see Figure 3). As more people recommend a particular note, the thumbs-up icon turns an increasingly bright shade of blue, thus making it easier to identify notes that are widely recommended.

In our initial implementation, we imposed several restrictions on the use of the "Recommend" feature:

1. *An individual can only recommend a particular note once.*
2. *People cannot recommend their own notes.*
3. *Notes written by an instructor cannot be recommended.*

The intent of these restrictions was to avoid the undue promotion of certain notes. Specifically, we wanted to prevent "ballot-stuffing" (Restriction #1) and self-promotion (Restriction #2) and we wanted to maintain a focus on student notes (Restriction #3).

It was also decided that recommending would be a public process rather than an anonymous process. For example, in Figure 3, clicking on the words, "You and 3 others have recommended this note" generates a list of the individuals who made the recommendation.

Methodology

The Recommend facility was tested over a period of 4-5 weeks in two online graduate courses during the January 2010 - April 2010 term. The course instructors were both were highly experienced with online knowledge building environments and the teaching of distance education courses. The two courses followed a similar 12-week format. Each week, students were assigned a set of readings, which they discussed in their online conferences. New conferences were created weekly, so students rarely returned to older conferences. The marking schemes in both courses were based upon a combination of written assignments, the moderation of a weekly conference, and participation in online discussions.

Course #1: The first course contained 20 students. On March 3rd, the course instructor wrote the following note to introduce the new facility to the class:

This feature allows you to mark a note as "recommended". At the bottom of each note you read there is a little thumbs up icon on the right which, if you select it tags that note as "recommended". When you mouse-over that icon in the note list, you get a tally of how many people liked that note and the more people who tag it as liked, the darker the icon gets.

See what you think. There is not a right way to use this, We were curious as to how people might use it. We would love to hear your feedback and reactions over the next while. Love it? hate it? Add your comments to the technical questions and help view--I have added this note there too.

PS. Teacher's notes can't be tagged this way--and you can't tag your own notes either!
PPS. The tag isn't visible in Contents mode, and in Split Screen mode it takes a refresh before the tag is visible in the note list.

No further instructions or guidelines were provided.

Course #2: The second course contained 15 students. On March 4th, the course instructor introduced the facility:

Hi folks;

We are our experimenting with a new button this week called "Recommend". This is the button that we talked about during last week's Webinar. It works a little like the "Like" button in Facebook (if you're familiar with that). When you see a note that you think others should read, click on "Recommend". The button is located beneath the text of the note on the right-hand side.
Limitations:
- You currently cannot "Recommend" teachers' notes
- You currently cannot "Recommend" your own notes
When you look at a list of notes, the notes that are recommended will have a "thumbs-up" icon displayed after the date. If you put your cursor over top of the thumbs-up icon, it will tell you how many people recommended the note.
We developed the Recommend button with the following goals in mind:
1. We wanted to make it easier for people to find helpful notes in the conference;
2. We wanted to provide a way for people to easily provide supportive feedback for one another (without necessarily having to write a note in response);
We hope you find it useful!

After two weeks, the instructor in Course #2 felt that the students had made relatively little use of the Recommend facility. At that point, he instructed each student to "recommend 5 notes this week". No further instructions were provided.

The Recommend feature was introduced after the mid-point of the two courses. This ensured that students were already familiar with the basic functionality of their online environments. Data were collected from the logs of online activity and student interviews.

Findings

Research Question #1: What is the students' experience of using this new facility? What do they like, and not like, about the process of recommending notes?

In a series of interviews, students reported that they felt the new environment was a useful addition to their course. It was notable, however, that their appreciation of the feature appeared to be grounded in social rather than cognitive factors. Students liked having their notes recommended by their peers. They felt it validated their ideas and made them feel closer to their classmates. In essence, the feature appeared to enhance a sense of community support and cohesion. The students also acknowledged that the facility allowed them to more easily identify valuable ideas. However, as one student explained,

"Well, I read everything anyways. I suppose it would be more useful for people who only read some of the notes."

Some students reported they were reluctant to use this facility. This was notable after the March Break in Course #1 and in the initial weeks in Course #2, when few recommendations were made. When asked about this phenomenon, some learners acknowledged that they felt wary about recommending other people's notes, since a percentage of their course mark was based on class participation. They were concerned that their participation grade was determined, in part, through a qualitative and quantitative comparison of students' notes. Consequently, it was not to their advantage to use "Recommend" to promote other people's notes.

Research Question #2: How do graduate distance education students make use of the Recommend button?

Table 1 and Table 2 display raw counts of the number of times that the "Recommend" button was used in the two online courses. In Course #1, many recommendations were made in the first few weeks. However, the March break interrupted normal activity and the Recommend feature was rarely used after that. In Course #2, the Recommend button was used rarely at first. At the beginning of Week 3, the course instructor asked students to recommend at least five notes written by their classmates. The produced a sharp increase in the number of recommendations, which carried forward to the final week of the course.

Table 3 displays the number of Recommendations given and received by students in the two courses (all names are pseudonyms). In Course #1, there was no obvious relationship between giving and receiving Recommendations (r=0.12). However, in Course #2, a positive correlation was found (r=0.60), suggesting that people who give a lot of recommendations tend to receive a lot of recommendations. It is not clear why Course #2 exhibited a positive correlation and not Course #1. However, the differences may be somehow related to Instructor #2's request that all student "recommend at least 5 notes" in the third week of that course.

We developed two hypotheses in an effort to explain the positive correlation between giving and receiving recommendations in Course #2:

Hypothesis 1: When students received Recommendations, they may have reciprocated by searching for notes from the person who recommended them. This would suggest that Recommend was being used as a kind of social cohesion mechanism among students.

Hypothesis 2: Students who receive Recommendations may feel less insecure about their own contributions to the database. Consequently, they may have fewer fears about the adverse effects of "promoting other people's notes", and more willing to recommend others.

As a follow-up study, we hope to examine the data in Course #2 more carefully to look for evidence of reciprocity – i.e., Person A and Person B exchanging recommendations. Such findings would support Hypothesis 1. On the other hand, it is possible that Person A, upon receiving a recommendation from Person B, is equally likely to initiate a recommendation to Person B, C or D. If that is the case, then Hypothesis 2 would better explain the data.

Table 1

Course #1 Recommendations History

Week	Recommendations
1. Mar 1 - Mar 7	46
2. Mar 8 – Mar 14	28
3. Mar 15 – Mar 21*	4
4. Mar 22 – Mar 28	0
5. Mar 29 – Apr 4	3
Total	81

Overlaps with March break

Table 2

Course #2 Recommendations History

Week	Recommendations
1. Mar 4 – Mar 10	6
2. Mar 11 – Mar 17*	14
3. Mar 18 – Mar 24*	66
4. Mar 24 - Apr 1	78
Total:	164

Overlaps with March break

Table 3

Distribution of Recommends Given and Received in Course #2.

	Recommend Given	Recommends Received
Shauna Barnes	1	3
Elane Carnival	0	2
Verna Chaplin	9	1
Alena Deepthi	2	3
Randa Doffle	19	4
Manny Franks	0	4
Doris Hewitt	1	1
Kana Kwetchen	0	0
Danielle Miller	1	4
Fea Millerson	0	12

Terri Norris	7	18
Morry Ossington	0	1
Phoebe Punjab	0	4
Tracy Prince	2	1
Sandy Ross	9	1
Nina Shakira	0	0
Jim Templeton	18	5
Andrea Ty	0	0
Luanne Wayne	12	5
Melinda Zoskey	3	16
Mean	4.2	4.25
Std Deviation	5.95	5.02

Table 4

Distribution of Recommends Given and Received in Course #2.

	Recommends Given	Recommends Received
Paula Dollins	18	3
Ronnie Enders	9	5
Alexa Florence	6	0
Valerie Kameron	20	28
Charles Lay	9	12
Alyssa Manderin	11	8
Marnie Morris	4	5
Fana Roy	7	0
Darlene Speilberg	2	3
Nancy Smith	8	8
Janice Summers	10	14
June Wilson	11	7
Cassandra Wilson	10	10
Donald Zanders	14	22
Melinda Zoskey	15	45
Mean	10.27	11.33
Std Deviation	4.74	11.69

Research Question #3: Is there evidence that Recommended notes receive more community attention than non-Recommended notes?

To determine whether or not Recommended notes attract attention, we compared how often students opened Recommended and non-Recommended notes. This involved tallying the number of times that each student-authored note was opened by another student, and then checking to see if Recommended notes were opened more frequently. Since reading behaviors may change between the beginning and the end of a course, we only gathered data from the 4-5 weeks when the Recommend button was available to the students.

Table 5

Average Number of Note-Open Events in Course #1 and #2.

	Non-Recommended Notes	Recommended Notes	P<0.05*
Course #1 (n=20)	12.92 (*sd 7.33*)	16.10 (*sd 7.69*)	p<0.01
Course #2 (n=15)	11.33 (*sd 6.24*)	15.16 (*sd 6.47*)	p<0.001

* Calculated using a two-way t-test assuming equal variances. Note: This analysis compares the mean number of times that non-recommended notes are opened to the mean number of times that recommended notes are opened. Since a single author may write many of these notes, it's not clear that the assumption of independence holds.

Analyses of the Course #1 and Course #2 log files suggest that students treat Recommended notes differently than non-Recommended notes (see Table 5). Students were more likely to read or re-read Recommended notes.

Discussion
Our initial trials with the Recommend facility suggest a number of potential directions for future research.

First, it was used broadly by students in the classes and seemed a familiar enough idea, from its use in Facebook or Amazon, that students were comfortable using it with minimal initial introduction. We were deliberately non-directive about its use initially in order to be able to look at the range of ways students might find to employ it. We learned from this study that students treat Recommended notes differently from non-Recommended ones, in that they are more likely to read and re-read them. In the next iteration of this study we would like to understand more about their reasoning in behaving in this way— what are the elements of value they perceive in peers' contributions?

Secondly, while students appreciated the new functionality, there was some anxiety around its potential use as an evaluative tool by instructors. Some students were concerned that if they identified other student's notes as being of

value this would reduce the perceived significance of their own contributions. To allay these fears and concerns we would introduce the facility at the beginning of the course and explain its role as one to help bring coherence and focus to class discussions. We would emphasize its value as a knowledge building tool to support collaborative cognitive responsibility rather than as a tool for individual grading.

Thirdly, we will try out different curricular integrations. For example, using different ways of connecting its use to particular events in the courses (e.g. identifying certain kinds of notes that help with a particular conceptual problem the class has been investigating and discussing that week). In this way we would go beyond the initial step used in the present study that involved a simple request to use the facility a required number of times in a week.

Conclusions

In environments like Knowledge Forum, all "notes" are visually similar to one another. In practice, this can make it difficult to single out the notes that contain ideas most likely to benefit from further refinement and analysis. The goal of the current analysis has been to develop new software supports that allow community members to more easily draw community attention to promising ideas so that they can grow through further critique, analysis and refinement. The Recommend button appears to be successful in terms of focusing greater learner attention on particular notes. However, in our trials, student concerns about course grades may have prevented the tool from realizing its full potential.

For the next iteration of the Recommend facility we will experiment with a number of different strategies. To encourage students to consider the cognitive as well as the social possibilities of the Recommend button, we will focus on introducing the facility at the beginning of the course and identify a number of functions it may serve. The introduction of new technology functions requires time for the emergence and development of social practices around its use in particular contexts (Brett, 2009), and we will be observing and analyzing the emergence of these practices and their relationship to learning outcomes.

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List of Figures

Figure 1. *The recommend link.*

☆ Question 2 by Jim Hewitt and coauthors, #1667, Sat March 13, 2010, 2:16 PM

  ☆ A few thoughts... by Marla Zupan, #1671, Sun March 14, 2010, 2:50 PM 👍

    ☆ Good Point by Danielle Seligman, #1685, Mon March 15, 2010, 9:14 AM 👍

      ☆ OER - Maintaining Standards by Vivian Ku, #1710, Tue March 16, 2010, 2:13 PM 👍

        ☆ I agree by Dennis Zions, #1771, Sat March 20, 2010, 12:59 AM 👍

          ☆ Unfortunately... by Christina Weinkauf, #1788, Sun March 21, 2010, 11:45 AM

            ☆ Yup! And did the fur fly! by Marla Zupan, #1814, Mon March 22, 2010, 5:06 PM

            ☆ Standardization by Jane Silva, #1848, Wed March 24, 2010, 12:44 AM

        ☆ standardization...to a degree by Alexandra Makos, #1806, Mon March 22, 2010, 10:52 AM

  ☆ OER: Many complexities, many barriers by Vivian Ku, #1678, Sun March 14, 2010, 10:51 PM 👍

    ☆ OER advertising and recruitment by Christina Weinkauf, #1790, Mon March 22, 2010, 4:59 PM 👍

Figure 2. *Examples of thumbs-up icons in a note list*

Figure 3. *The number of recommendations.*