

## **Increasing student interaction and the development of critical thinking in asynchronous threaded discussions**

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*Abstract: The context for this case study is an online, undergraduate, 300-level organization behavior course that explores the intersection of individuals and organization systems at three levels of aggregation: individual, team/group, and organization system. The case study begins with a learning activity designed to use an asynchronous threaded discussion format to elicit, organize and meaningfully share prior knowledge. The case study goes on to detail the initial review, redesign, assessment and results of an improvement cycle aimed at addressing the challenges of stimulating meaningful interaction and critical thinking in this online format. The resulting redesigned learning activity used a collective visual metaphor, based on prior experience, to fuel the threaded discussion process. The case study includes pre- and post-redesign examples and specific instructions for those interested in applying this approach.*

*Keywords: prior knowledge, visual metaphor, word cloud, content analysis, online teaching and learning, learning activity, online message boards, undergraduate education*

### **I. Introduction.**

The following case study begins with a learning activity designed to use an asynchronous threaded discussion format (discussion forum) to elicit, organize and meaningfully share prior knowledge. The case study goes on to detail the initial review, redesign, assessment and results of an improvement cycle aimed at addressing the challenges of stimulating meaningful interaction and critical thinking in the online discussion forum format.

The learning activity described took place in an online, undergraduate, 300-level organization behavior course. Generally speaking, the content of the course explores the intersection of individuals and organization systems at three levels of aggregation: individual, team/group, and organization system. Based on this content, the course lends itself to the inclusion of interactive learning activities. The activity described in this case is one such activity.

### **II. Literature Review.**

The objective of the improvement cycle described in this case study was to enhance meaningful interaction among students and stimulate the development and demonstration of critical thinking skills taking place in a discussion forum.

*Discussion Forum Challenge.* In the undergraduate online teaching and learning environment, one of the core challenges is to provide opportunities, structures and formats that increase meaningful interaction and give students opportunities to practice and demonstrate critical

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thinking skills. Discussion forums are frequently used as a response to this challenge. At their best, discussion forums allow for connection and interaction among students, can provide exposure to differing perspectives and ideas, and present opportunities for thinking more deeply about the focus topic (Klemm, 2000; Cox & Cox, 2008; Hulkari & Mahlamäki-Kultanen, 2008; LaPointe & Reisetter, 2008). Unfortunately, typical applications of the discussion forum tool often lead to superficial interaction and fail to adequately stimulate the development of critical thinking skills (Klemm, 2000). In their research on this topic, McNamara & Brown (2009) concluded that discussion forums can be an effective mechanism to “facilitate collaborative learning and to scaffold student reflection. However, discussion forums need to be carefully structured and managed to ensure that they result in the deep level of collaborative reflection and active student learning that is desired” (p. 421). The following case study describes the assessment and redesign of a discussion forum aimed at stimulating deeper levels of interaction and critical thinking.

### III. Methods.

#### *A. Description of Original Discussion Forum Format.*

This discussion forum was originally designed to tap into prior knowledge. It was based on the theory that, if used well, accessing prior knowledge supports learning and provides a foundation for the introduction of new information and concepts. The learning potential of prior knowledge and the importance of appropriate activation is emphasized on the websites of many Centers for Teaching and Learning. For example, “Students come into our courses with knowledge, beliefs, and attitudes gained in other courses and through daily life. As students bring this knowledge to bear in our classrooms, it influences how they filter and interpret what they are learning. If students’ knowledge is robust and accurate and activated at the appropriate time, it provides a strong foundation for building new knowledge” (Carnegie Mellon University, n.d.). Since we all interact with organizations in a variety of ways throughout our lives, an organization behavior course provides an ideal opportunity to elicit, organize and meaningfully share prior knowledge. To accomplish this, at the beginning of the course, students were asked to identify, think about and use the discussion forum to share examples of their best and their worst job experiences. The discussion forum was launched with two basic questions: *Describe aspects of your “best” work experience? Describe aspects of your “worst” work experience?*

#### *B. Initial Review of Original Discussion Forum Format.*

Variations of the format described above were used for several semesters and, while the importance of the activity was never in question, the quality of student posts was generally disappointing. To more clearly understand the specific ways in which the discussion forum posts fell short, a review was conducted. All of the posts from one semester were carefully examined, looking for: 1) the demonstration of critical thinking, and 2) the amount of meaningful interaction among students. To assess critical thinking at the undergraduate 300-level, three general categories were examined. These were, does the student:

- include the *Why* beneath their response? (e.g. *I think that it is important to have fun at work because ...*)

- include illustrative examples? (e.g. *A time when I experienced boredom at work was ...* )
- make connections to other theories, models, and/or frameworks from current or from other courses? (e.g. *The text discussed recognition as an important aspect of engagement and this fits with my best job experience.*)

Meaningful interaction was assessed by:

- the number of content-rich (as opposed to *that's interesting*, or *nice post*) responses.
- the number of questions that are asked.

Upon review, it was immediately evident that the learning activity was falling short of delivering on these two variables. Most of the posts were simple recall, evidence of critical thinking skills and content-rich responses were minimal, and questions posed to other students were virtually non-existent.

Example Comments:

- My best job was as a Japanese/Spanish interpreter at the village of “Fukuoka Universidad 95” (Olympics for university students), in Japan. The worst job I've had was the same interpreter job.
- I have had three jobs in my life, two of which tied for the position of worst job ever and one that is without a doubt the best job I have ever had and best job that I think I could possibly have at this point in my life.
- I want flexibility to work when I want to, I don't like being tied down to a schedule. I need personal growth, if I am not growing I feel like I am failing in life.
- I want to be able to move up in the business, if I have reached the top I have to find a different job, I always want to keep moving up!
- I love working with people-this includes other employees as well as customers.
- Communication is key in the workplace.

### *C. Redesigned Discussion Forum Format.*

The objectives for the redesign of the learning activity were twofold:

- To increase meaningful interaction, as measured by the number of content-rich responses and the number of questions asked.
- To increase the development and demonstration of critical thinking, as measured by evidence of including underlying thinking, illustrative examples, and connections to other theories, models, and frameworks.

In order to accomplish these objectives, it was decided that, rather than jumping straight into the discussion forum, the learning activity would be split into two phases. In the first phase, student responses were collected and combined to create a visual metaphor or artifact (an object made by an individual or a group, especially with a view toward subsequent use). This approach was selected because visual metaphors can help reveal patterns, themes, connections and finer nuance. They can create an “AHA!” experience. Noel Carroll describes a visual metaphor “as a device for encouraging insights, a tool to think with. That is, with visual metaphors, the image-maker proposes food for thought without stating any determinate proposition. It is the task of the

viewer to use the image for insight” (2001). This concept is well-illustrated by a student post: “It’s odd how the words weren’t much different than I had thought they would be, and yet how profound they are when they are all linked together graphically like that.”

In the second phase, the visual artifact was used to launch the discussion forum. The specific steps for the redesigned activity were as follows:

1. In the first phase, two focus questions were developed that required students to respond with a list of words. These were focused on concrete experience and were designed to allow students to reflect upon, organize, and pull forward prior knowledge/experience. This prior knowledge/experience provided the starting point for the meaning-making associated with deeper levels of critical thinking.
2. Phase 1 Questions: *What five words would you use to describe aspects of your “best” work experience? What five words would you use to describe aspects of your “worst” work experience?*
3. The words submitted by all students were gathered and entered into the Wordle™ (Fienberg, 2011) application, thus creating two collective “word clouds” – one for “best jobs” and one for “worst jobs.” The word clouds became a collective artifact that synthesized individual experiences into one image that suggested broader patterns and themes. The word cloud does this by making words mentioned more often larger. Additionally, it has been observed that a graphic representation can sometimes help a viewer to “see things differently.” Figure 1 offers an example of a word cloud.
4. In phase 2, the word clouds were posted in the discussion forum with prompts to encourage reflection and inquiry.
5. Phase 2 Questions: *Spend some time looking at and thinking about the word cloud(s). What do you notice about our collective experience with work? If you were a manager, what would you pay attention to in order to create a positive work experience? What surprised you? What did you expect? What else?*



- I was amazed that most of the bad words were more emotion oriented and not as much about doing the actual job. I thought there would be more words about the kind of job instead of how people on the job made you feel.
- I have had managers who possessed both categories of traits. I've had managers who were unorganized but caring; rude but driven; back stabbing yet creative; and, unqualified yet a good leader.
- I think that what people say they want and what they really want are not always the same.
- I am curious if, after reviewing the word clouds, would you change the words that you originally used?
- What I find most interesting is how the words in the best jobs section spoke directly to employee engagement. After reading the description of that in the text, the words that had the larger focus in the graphic were a nearly perfect match for what was identified in the text.
- As a manager I think that this would be a great exercise to see how the employees feel about the company and a starting point to make things even better.
- Oh Yeah! I wonder what kind of response employers would get if they were just being honest: HELP WANTED: Degrading workplace is in need of a pushover for demeaning, boring, dirty work. Miserable working conditions with lousy pay. No benefits, long hours, and no possibility for advancement. Must have MBA, clean driving record, perfect credit, straight teeth, and no sense of humor.

## **V. Discussion.**

First off, the students seemed to enjoy the redesigned format. In the discussion forum itself, many of the students commented on how much they enjoyed and/or learned from the learning activity. For example: "I found this forum very interesting. It made me realize things that I wasn't necessarily thinking about at work. Thanks everyone for making me more aware."

The first goal of this redesign was to increase meaningful interaction, as measured by an increase in both the number of content-rich responses and questions asked. Content rich responses went from almost non-existent in the original learning activity to 97% in the redesigned activity. The frequency of questions asked was still disappointing at 20%.

The second goal was to increase the development and demonstration of critical thinking, as measured by evidence of including underlying thinking, illustrative examples, and connections to other theories, models, and frameworks. Sharing underlying thinking was evident in 53% of the posts, which is acceptable for a 300-level undergraduate course. Illustrative examples were shared in 38% of the posts, again within the acceptable range. Only 13% of the posts included a connection to a model, concept, or framework.

Through the content analysis it was also noticed that a small percentage of the posts (10%) actually identified some type of future action or application of the learning.

## **VI. Conclusion and Implications for Future Action.**

The addition of the visual metaphor clearly improved content-rich responses and several aspects of the demonstration of critical thinking. It also increased student interest in the discussion forum.

The redesigned activity still falls short in encouraging students to ask questions and make connections to models, theories and frameworks. The assessment also identified potential opportunities to incorporate a focus on identifying application opportunities. These three areas provide opportunities for future improvement and enrichment of the learning activity

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