
Tweeting for Class: Using Social Media to Enable Student Co-Construction of Lectures

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Abstract

Motivating students to be active in learning is a perennial problem in education. We describe our experience using Twitter for student "co-construction" of lecture materials. Students were required to tweet prior to each lecture related to that day's topic. These tweets – consisting of questions, examples and reflections – were incorporated into the lecture slides. Students reported that they found lectures including their tweets in class to be engaging, interactive and relevant, and nearly 90% of them recommended we use our co-construction approach again. Future iterations of this model could streamline the process by using automated processing and aggregation of tweets and/or having students in the class responsible for this.

Keywords

Education, Twitter, Engagement, Co-construction

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI)

General Terms

Human Factors

Introduction

Today's undergraduates – members of the “millennial generation” – are particularly motivated by opportunities to customize their experiences with media, consumer products, and learning [4]. As such, engaging undergraduates can be particularly difficult in traditional lecture formats [1], where there may be few opportunities for direct customization.

Microblogging sites, such as Twitter, provide opportunities for new interactions in the classroom such as enabling backchannel discussions during class, delivering reminders and stimulating discussion [2, 3].

We refer to student participation in the development of course materials as “co-construction” and used Twitter to: 1) make lectures more relevant to students by incorporating their questions and examples, 2) improve student preparation for class by motivating reading and thinking outside of class, and 3) give students new ways to be directly involved in class via the customization of class slides.

Method

Research Context: How We Used Twitter

Our course is a 150-200 student lecture on communication technology at a large university in the northeast United States. Our goal was to involve students in developing lectures (i.e., co-construct) in near-real time. By midnight on the night before each (twice weekly) lecture, students had to submit one tweet that was related to the day's assigned reading. Each student set up a course-specific Twitter account, which we followed with our class account. We used GroupTweet to retweet all tweets sent via direct message to the class account.

After the deadline, a teaching assistant sent the instructor a “Tweet Report” with all tweets, a Wordle visualization (see Figure 2), and a curated set of tweets illustrating common themes, key concepts, and points of confusion. Before class, the professor integrated some tweets into the lecture slides to: 1) “troubleshoot” student understanding, 2) illustrate key concepts, and 3) include student questions. Tweets always appeared in a colored rectangle (see Figure 1) to distinguish them from instructor-generated content.

Research Methods

We base this paper on our experience in teaching this course twice, and responses to a 42-item questionnaire, which asked students about their experiences with Twitter in class, and their perceptions of its effects. Most items used 5-point Likert scales but there were also free-response items. 173 students (out of 180, 86 Female) completed the 2009 questionnaire, and 111 (out of 137, 61 female) in 2010.

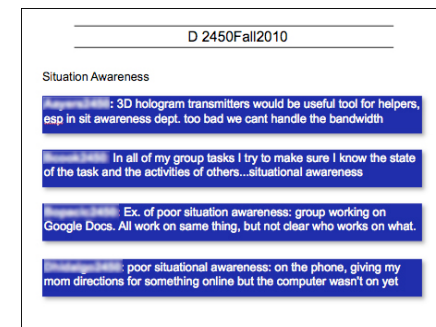


Figure 1: Slide with Tweets

Results

On the whole, students were enthusiastic. 93% of 2009 and 86% of 2010 students recommended future use of Twitter in this manner.

Making Lecture More Relevant and Interesting

Our first goal was to make lecture more interesting and relevant, ideally also helping students understand course concepts. We measured this in several ways.

	2009 (N=175)			2010 (N=111)		
	Disagree	Neutral	Agree	Disagree	Neutral	Agree
I enjoyed seeing my own and classmates tweets	5%	6%	89%	5%	4%	91%
Tweets made class more interactive	6%	9%	85%	6%	9%	85%
Answering tweeted questions was helpful	4%	7%	89%	5%	8%	86%
Examples in tweets helped grasp concepts	3%	15%	81%	9%	12%	79%
Overall I enjoyed discussion of tweets	5%	10%	85%	9%	9%	82%

Table 1. Questionnaire results (full scales compressed to 3 categories)

As Table 1 shows, 81% of 2009 and 79% of 2010 students felt that the tweets helped them grasp course concepts. Based on their comments, many appreciated the perspectives of fellow students, feeling their peers offered insights on understanding a difficult theory:

Really was a tool to explain what the readings were saying. The class tweets that were put up helped make a complicated theory more clear and to the point.

Tweets also raised issues students hadn't considered:

Other people would bring up problems or examples that I hadn't recognized, which would help me get a better grasp of the material

Twitter commanded student attention during lecture, particularly as they watched for the appearance of their own and others' tweets: 92% of 2010 and 89% of 2009 students reported that they enjoyed seeing these:

The best thing about tweeting was seeing your own tweets in class. It made you feel famous.

Students also reported that tweets made the lecture slides more understandable as they studied for exams.

Improving Preparation and Non-Classroom Time

Our next goal was to make better use of non-classroom time, by improving student preparation for lecture and by encouraging them to apply concepts from the course to their everyday lives. To assess our achievement of this goal, we used student comments and the tweets. Many students reported that one of the strengths of Twitter was that it encouraged them to keep up with readings and engage with the material actively:

Tweeting really made me keep up with the reading. Made me not just read passively, but actively think about it enough to be able to tweet.

Others appreciated that it was a low-effort assignment that motivated them to understand the material. The tweets also indicated that students were thinking about and applying course concepts:

i hate to admit that I "fb stalk" but now everyone makes judgments off of fb profiles (doesn't matter if I've met you yet).

Other examples were concise but indicated that students understood the concept:

RIP GOOGLE WAVE #criticalmassproblem

Providing New Ways for Students to Participate

Our third goal in experimenting with Twitter was to enable new ways for students and faculty to interact. As Table 1 shows, 85% (both years) of students felt incorporating tweets made class more interactive; and 86% (2010) and 89% (2009) of students felt featuring and answering Twitter questions in class was helpful. Student comments also reflect this:

The best thing about tweeting was being able to ask questions in a huge class. In most lectures that are as large as <course>, individual concerns/opinions are not heard, and tweets really enabled us to interact with one another and <instructor> in a more intimate way than one would expect for such a large lecture.

Despite the 140-character limit, moreover, students were able to ask substantive questions about the content. Sometimes these could be fully expressed:

Are the depersonalization and deindividuation effects measured by degree? It seems like it would depend on the CMC medium.

Some students also appreciated that they could interact with classmates while also letting the instructor know what they were thinking about.

The second way that Twitter enabled novel interactions was that instructors could use the tweets to assess student (mis)understanding, especially when students believed they understood the material, but were misinterpreting it. In these cases we could display the tweet anonymously and clarify the concept.

The Wordle (see Figure 2) enabled the class to interact in the aggregate with the instructors. It provided a concise visual snapshot of what students tweeted and what they avoided. We could discuss why a concept was absent and help students better understand it.

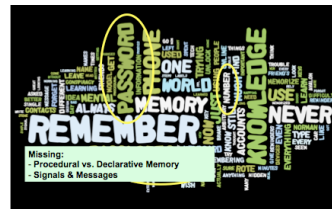


Figure 2: Wordle highlighting key missing concepts

Discussion

Students were enthusiastic about using Twitter for the course and having a role in co-constructing the lecture. This motivated their attention in both preparing for and during class, and also led to perceptions of better understanding and more relevant material in the course. What made Twitter co-construction successful was a combination of Twitter's characteristics and an

effective integration procedure. Tweets provided us with another avenue for assessing student understanding, which was extremely helpful in tailoring content to the students' specific needs before class.

Limitations and future work

A limitation to consider in interpreting these results is that we rely on self-reported data. In addition, our questionnaire, which was only one of our data sources, was intended to capture general student reactions, so did not use a previously validated scale. It is also possible that the technology focus of the course drew students who were more interested in Twitter, although only about 10% of our students had Twitter accounts prior to the course, and the course drew students from about 30 different majors. Finally, future iterations of our model could reduce the effort involved by using automated processing and aggregation of tweets and/or having students in the class responsible for this. Our goal is to present our experience with "co-construction" using social media and encourage its exploration in different domains.

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