
Public Micro-blogging in Classrooms: Towards an Active Learning Environment

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Abstract

In-class discussion is often noted as a common and effective strategy for promoting active learning. However, there is evidence that the typical university classroom setting presents some obstacles for realizing maximum effectiveness of in-class discussion. These obstacles include the effects of production blocking, the hierarchical power structures within the classroom and the lack of sense of community. Having realized the great potential of Web 2.0 social software in meeting the production blocking and power influence challenges in classrooms and the effectiveness of public display in supporting community building, the objective in the proposed research is to study how public micro-blogging tool might address these problems and the consequences it may cause.

Keywords

Active learning, public micro-blogging, production blocking, sense of community

ACM Classification Keywords

H5.3. Group and Organization Interfaces: Synchronous interaction.

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Introduction

Student engagement is a pervasive and persistent goal for educators. In education, student engagement is equated to a “student's willingness, need, desire and compulsion to participate in, and be successful in, the learning process promoting higher level thinking for enduring understanding” [1].

Providing an active learning environment may promote student engagement. In active learning, faculty serve as facilitators of learning, and students become active actors instead of passive information receivers. Students have the opportunity to initiate topics to discuss in class and they actively participate in thinking, asking and answering.

CHALLENGES WITH ACTIVE LEARNING IN CLASSES

Active learning has been recommended as one of the seven principles for good practices in undergraduate education. Class discussion (including discussion, debate, questioning and explaining, etc.) is often noted as a common and effective strategy for promoting active learning [2]. However, in traditional classrooms there are some inherent obstacles for active in-class discussion.

Production blocking problem: students meet face to face and communicate through verbal communication. They are encouraged speak up freely. However, at any given time only one individual can talk and other people are “blocked” because they have to wait for their turns to talk. Production blocking is considered to be one of the major reasons for the *productivity loss* in group meetings and discussions [3].

Hierarchical Power Structure: In traditional classrooms, the power relationship between teacher and student is straightforward. In traditional classroom settings, particularly in university courses, the teacher is regarded as a “sage on the stage”, someone who has ultimate right to control class information and activities, presumably for the sake of the students. The power relationship between teacher and student is one-directional and highly imbalanced. Only the teacher can control the class and students have no or minimal influence on the organization and development of the course [4].

Lack of sense of community: students in most classes report a low level of sense of community. Currently, mid-size (40-50) to large size (100+) classes are prevalent in universities. As class size increases, students become faces instead of people. In classes of this size “feelings of disconnectedness are common among students” [5].

INTEGRATING MICRO-BLOGGING INTO CLASSROOMS

In this paper, it is proposed that by properly integrating micro-blogging into the classroom, it could facilitate the building of active learning. We have designed a micro-blogging service- ClassCommons. Students can post their questions/comments during the class. In the mean time, the message will be displayed on the public display in the front the classroom, viewable to all the people. Teacher can either choose to reply by posting a comment or by addressing it verbally to the whole class. Other students can also reply and make more comments as they wish. Students can decide whether to post anonymously or not. As a more concrete example of use, consider this ClassCommons design

scenario: Jessica finds that she does not quite understand a concept just discussed in class, but she is too shy to raise her hand. Instead she uses ClassCommons to post a question on the public display. She chooses not to have her name displayed. Instead the alias that she chose for herself will be displayed to the whole class. The teacher then addresses the question orally; meanwhile other students contribute to the discussion by posting their own thoughts on the public display. Although Jessica's real name is not displayed, the teacher still know who post what because the system supports "public anonymity and private accountability". The system gives students another channel to communicate with the teacher and also with other students. They can easily initiate in-class interactions and they can appropriate the use of the system as they wish.

Though simple in concept, this is a rather bold idea in that any student has the same right as others (including the teacher) to "say" something. It will be interesting to see what kind of messages students post and what impact it has on students' learning experience.

PRELIMINARY STUDY AND RESULT

The Classcommons system was used in a senior usability engineering class (UEC) in a large university in Northeastern United States. It had 45 students; 40 were males, 5 were females. The course is run in workshop style. ClassCommons was offered as a peripheral add-on tool for students to use; its contents are displayed on a large screen in the front of the classroom. At the beginning of every class, the instructor would turn the system on; it was active during the entire class session.

The Classcommons system was used during an entire spring 2009 semester. Of the 45 students, 46.7% (21) of them posted some messages. Altogether students posted 173 messages. The average length of the posts was 8.55 words (*standard deviation*=7.89), with almost half (47%) less than 5 words. 23.3% of them were between 6 and 10 words; 20% are between 11 and 20 words; and 9.7% are more than 20 words in length.

The majority of the messages posted are class related. Initially, we coded the messages as either class-related (91.9%) or non-class related (8.1%). We grouped the class-related messages into 7 types:

(1) Messages reporting problems/making suggestions (24.2%): *"powerpoint notes URLs aren't working", "The videos referenced in the quiz review were assigned for next class, not this one."*

(2) Greeting/slogan/entertaining messages (20.59%) which serve as an ice-breaker for further ClassCommons based discussion: *"LOL HAY GUYZ", "Hello World!", "the keystone state has decided to secede from you clowns" and "Beat Sparty! Go Blue Barracudas".*

(3) Reflections/thoughts (12.35%): *"You can definitely succeed without this Usability Engineering stuff. Just look at Vista.", "We can't have too much creativity in this stuff. We're designing interfaces, not making an episode of Robot Chicken."*

(4) Messages seeking help/raising questions (10.59%): *How many pages was your homework?" "reading guides? outlines? collaborative reading? what*

would help?"; "Can someone give a VERY simple example of bottom-up versus top-down pl0x?"

(5) Information polling messages (18.24%): "Next Monday (3/23) is JAMPACKED with work: Quiz 7+ HW 7 +Group UI Design. Who wants to change this?"; "Class vote: who wants to move the case study due date up a few days (i.e. Wednesday instead of Monday)?"

(6) Information sharing messages (12.35%): "ConeTrees (twitter): Card Sorting: How Many Users to Test URL: <http://tinyurl.com/c74lms>".

(7) Counter-spam messages (1.76%): "Hey, Tom, take it easy", "Spammers Suck". Spam messages, random messages that have nothing to do with the class are defined as non-class related messages.

In brief, our in-depth analysis of the messages suggests that that ClassCommons gradually became a tool for students to help them with class discussion and organization; at the same time the playful comments posted by students added on-going "fun" to the class which might also help to keep students engaged in class activities.

CONCLUSION AND OPEN QUESTIONS

In our case, the display creates a conversation alternative that is tightly embedded within a classroom context; it augments same-time, same-location interaction for students but allows instructors to participate as well.

Our exploratory study provides an initial positive view of this public micro-blogging approach. ClassCommons offers a peripheral channel that supports social

interaction. It gradually becomes tool that students will use to help them with their class goals and concerns; and that the tool helps to add fun to the classroom. Both of these effects have the potential to increase students' engagement.

There are also some open questions to be answered. How distractive is it to students and teachers during the class? What is its long term effect in students' learning performance? How could it be fully integrated into class discussion?

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