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Designing Microblogging-Based Class Activities

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Abstract Microblogging tools such as Twitter have been frequently adopted in educational settings to facilitate learning. This study examined how a microblogging tool, Twiducate, was incorporated into a graduate-level class of ten students. During the 1.5 hour lesson, students participated in a series of Twiducate-supported collaborative and reflective activities. The analysis of in-class discussion transcripts, text-based posts on Twiducate and a pre- and post-test survey results revealed that students were highly engaged in classroom collaborative learning and there is a high level of interaction. Students reported the challenges of using microblogging tools, such as the possibility of creating distraction and disorder from formal classroom learning. The study suggests that instructor's careful planning, continuous monitoring and control of the class are crucial when microblogging tools are integrated.

Introduction

Microblogging is an online publishing blogging tool, which allows a small amount of text-based content to be displayed on the user's profile page (Java, Song, Finin, & Tseng, 2007). By publishing content on one's microblogging page, users are able to connect with others in a wide network and share what is happening to him/her with the rest of the world. Some microblogging tools also allow for multimedia content—the user can exchange small elements of multimedia content such as text messages, individual images, and video links. Although microblogging primarily serves as a communication tool, its unique affordances in education have been investigated in recent years. In essence, microblogging can serve as a mediating platform for student-student and student-teacher interaction. In formal classroom settings, microblogging can be utilized to enhance interactivity: students can post tweets to ask questions, share ideas, seek for advice or support by having discussion with each other (Grosbeck & Holotescu, 2008). In after-class settings, microblogging provides a variety of opportunities to facilitate student collaboration and informal learning in a ubiquitous manner (Ebner, Lienhardt, Rohs, & Meyer, 2010; Ebner & Maurer, 2009; Franklin & Van Harmelen, 2007; Grosbeck & Holotescu, 2008).

The purpose of this study is to empirically examine the specific affordances and constraints of incorporating microblogging tools into classroom. Although the potential of using microblogging in education has been recognized in recent years as we discussed above; however, educational empirical research, especially in a formal classroom setting, is rarely seen. This study aims to and attempt to examine whether and how incorporating Twiducate how did its integration could promote facilitate classroom learning in a graduate-level class scenario by implementing a set of collaborative and reflective activities. It also investigates participants' perception change on the educational value of microblogging tools before and after the the implementation of the activities.

The research questions of this study are:

1. How did students learn through Twiduacte?
2. Did the incorporation of Twiducate in this class afford student learning?
3. Was there a perception change in students' viewpoints on the microblogging integration into classroom before and after the implementation of the study?
4. What were the perceived affordances and constraints of integrating microblogging tools into classroom as reported by students?

Method

Participants

The participants of the study were ten graduate students taking a face-to-face in-class session on the topic Classroom 2.0— Using web 2.0 Tools in Classroom. Six of them were female and four were male. Four aged between 25-30, four between 31 to 40 and two above 50. Of all the participants, six had a Twitter account, and eight of the participants had been using Twitter for more than one year. However, among those who used Twitter, six had less than five tweets, and two had 6 to 20 tweets. Only one heard of Twiducate prior to the class. Therefore, this group of learners was not active microblogging users.

Data collection

The research data in this study included: students' in-class discussion transcripts, which was recorded with learners' permission; all the text-based tweets on Twiducate.com; the pretest and posttest survey; and the after-class blogs which provided richer qualitative data.

Procedures

The learners were informed of the learning goals and the learning environment-Twiducate prior to the class. Before the lesson started, the learners were asked to familiarize themselves with the Twiducate environment. The instructor created a brief tutorial to introduce basic functions of Twiducate. Using the class code and password provided by the instructor, learners were required to log in Twiducate, scan through the interface, fill out the bio and put up a picture as an avatar. Students were also asked to complete a pretest survey prior to the in-class session.

The first tweeting activity was a collaborative editing activity on Twiducate. Students were asked to open the tweeting guideline document being shared on Twiducate and edit it collaboratively using the similar dos and don'ts format. The second tweeting activity was to write their reflection tweets on Twiducate. This was followed by a brief lecturing session led by the instructor. During this lecturing session, students were given permission to post questions or any thoughts and ideas on Twiducate whenever they felt the need. Meanwhile, they were also free to give verbal comments during the lecturing session. Students had another 5-minute discussion on Twiducate, which was considered as the third tweeting activity. Finally, learners were asked to use the Like function to select three favorite tweets posted during the last two tweeting activities that they thought as reflective. The instructor then skimmed through all the favorite tweets and summarized the major themes.

After completion of the lesson, learners were asked to fill out a posttest survey to self-evaluate their experience of Twiducate and share their thoughts. Also, learners were asked to write an entry on the class blog commenting on their Twiducate experience.

Instruments

The posttest survey was the main instrument of this research analysis. The posttest survey encompassed three major components, students' self-evaluation of their in-class Twiducate experience, their perception of using microblogging tools in education, and an open-ended question section which where they were asked to provided additional descriptioninformation of their Twiducate experiences and explication of their perception.

Results

Student Participation

The large quantity of text-based tweets on Twiducate and students' high volume of verbal discussion both suggested a wealth of participation. During the in-class session, there were a total of 52 tweets posted by students and seven by the instructor. On average, each student had approximately five tweets in this class (mean= 5.2, SD= 2.53). What is worth mentioning is that different from Twitter, posts on Twiducate do not have a 140-character limit. The longest tweet in this class has 80 words, 492 characters. The average length of the tweets was approximately 29 words, 180 characters. This indicated a good amount of participation considering that learners were only given two 5-minute reflective sessions to

tweet. Regarding the collaborative editing activity, the instructor originally had two dos and three don'ts on the guideline document; after the cessation of the activity, the original guidelines were modified and a total of nine dos and 13 don't were created within a ten-minute period.

Student Learning

From the students' in-class text-based tweets written for the tweeting activities and their discussion transcripts, we were also able to see what they reported having learned in this class. Twiducate offers a space for students to reinforce and reflect their learning during the class. Student learned a great number of methods to incorporate microblogging tools, Twitter in particular, into classroom settings. Three of them mentioned in their tweets on using it as a documentation tool in classroom or after class for archiving students' academic progress or achievements. One of them commented that "This can definitely be used in a class with multiple people and would be a way to provide instant feedback to questions."

Second, students were more aware of the advantages of using microblogging tools for educational purposes. In their tweets, we found that learners discussed quite often that it can enhance student engagement and classroom interactivity: "It seems like it would open up the classroom. Cross-curricular projects and inter-school collaboration could be facilitated via Twiducate." Collaboration through Twiducate was also perceived as a useful way to adopt in classroom settings.

Lastly, students also speculated some challenges of using Twiducate in classroom, which in a way honed their critical thinking skills. One of them concluded by saying that it might not have any distinctiveness to other tools, "It can be used for chatting, discussion, group work and much more."

Furthermore, learners discussed the difference between Twiducate and Twitter. One prominent difference is that Twiducate provides a more controllable and closed environment, "I think Twiducate provides a way to pull all students together in a closed environment (as opposed to Twitter where they are outside of a contained classroom app)." Another student stated, "Twitter doesn't afford any control on the teacher's part in what gets posted but Twiducate does."

In the survey questions, students were also asked to evaluate their learning outcomes in two items. The first item was "I do not learn much in this Twiducate class." (M=1.70, SD= 0.68), the second item, "I perceive a knowledge growth through this Twiducate experience." (M=4.70, SD=0.95). Both items indicated positive learning outcomes reported by the students. The small SD value also showed low variability in positive assessment results of their learning outcomes.

Student Perceptions

Self-evaluation of Twiducate experience. Table 1 displays the means and standard deviations of students' ratings on statements which describe their in-class Twiducate experience. It is found that overall participants perceived a high value of incorporating Twiducate in this class. Stakes are higher on exposure to educational resources, collaborative learning, and knowledge growth, while they are apparently lower on critical learning.

Statements	Mean	Std. Deviation
My overall Twiducate experience is bad.	1.70	1.06
I am engaged in collaborative learning through Twiducate.	4.90	.88
I am highly involved in the class partly because of Twiducate.	4.30	1.06
I am exposed to more educational resources.	5.30	.68
My critical thinking is enhanced because of Twiducate.	3.90	1.29
This Twiducate experience is boring.	1.80	.79
I value Twiducate or Twitter as a useful tool to be integrated into classroom.	4.80	.79

Table 1

Perception change. In this section we compared our results in pre-test survey and the correspondent items in the posttest survey. Those items regarded students’ overall belief on microblogging tools, fun, collaborative learning, and continuation of learning. Table 2 displays a paired t-test analysis with means and standard deviations of students’ ratings of their perception on using microblogging tools in education.

We found that among all those six items, three items from the pretest presented a significant change as compared to those in the posttest. Students perceived the use of microblogging tools as fun [t (9) = -3.67, p <.01]; the sense of annoying were also significantly reduced after the experiment [t (9) = 2.18, p =.05]. In addition, their perception on the Twiducate’s affordance for collaborative learning was also significantly elevated [t (9) = -2.54, p <.05]. The overall belief on the value of using microblogging tools and the continuation of their long-term use remained unchanged, suggested from the no significant different results of the t-tests.

Survey Items	Pretest Mean (SD)	Posttest Mean (SD)	df	t	Sig
I believe microblogging tools can contribute to learning.	5.20(.79)	5.10 (.56)	9	.29	.78
I doubt the true value of using microblogging tools for education.	2.10 (.99)	2.40 (.84)	9	-.90	.39
I found Twiducate or Twitter annoying in classroom setting.	3.60(1.65)	2.10 (.88)	9	2.18	.05*
Using microblogging tools like Twiducate or Twitter in classroom is fun.	4.20(1.14)	5.40 (.84)	9	-3.67	.01*
I see using Twiducate or Twitter can enhance collaborative learning in classroom.	4.00(1.05)	5.10 (.74)	9	-2.54	.03*
I will continue the use of microblogging tools in the future.	3.70(1.42)	4.70 (1.50)	9	-1.73	.11

Table 2

Three additional items inquired students’ perception on the value of using microblogging tools in affording social presence, classroom engagement and learning community formation. Table 3 displays the means and standard deviations of students’ ratings of their perception on those areas.

Statements	Mean	Std. Deviation
I believe using Twitter or Twiducate would enhance social presence.	4.80*	.63
I believe using Twiducate or Twitter can increase student engagement.	5.00	.82
I believe students would feel more sense of community when using microblogging tools in a class.	3.70*	1.64

Table 3

* Adjusted means for negatively worded items

Based on the above three tables, we can see that all participants valued Twiducate or Twitter as a useful tool to be integrated into the classroom, and more than half of them had strong positive perception. According to the means of the posttest results, all students had an overall positive perception on microblogging tools' value in classroom learning. Fun was considered the most important element in using those microblogging tools, as it ranked the highest. Collaborative learning topped second on the list. Students reported themselves to be highly involved in the lesson due to Twiducate. However, students found microblogging tools less effective in facilitating social presence and fostering a sense of community.

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