LEARNING TECHNOLOGIES: TWEETING IN A HIGH SCHOOL SOCIAL STUDIES CLASS

By

PRINCE HYCY BULL *   SHAYLA ADAMS **

* Associate Professor, North Carolina Central University, U.S.A.
** Social Studies Teacher, Hillside NT High School, Durham, North Carolina.

ABSTRACT

This study focuses on the perceptions of 46 high school students on the integration of Twitter as a learning technology. Twitter was introduced and used to supplement instruction in the course for the first six weeks of the 2010/2011 academic year. The integration included designing twitter pages, communication, reflections, use of twitpics surrounding the intentions of the Founding Fathers on the Bill of Rights. Data was collected using both quantitative and qualitative research techniques. Findings show that use of Twitter promoted students' creativity, fun, and engaged them in meaningful learning activities inside and outside of the classroom. Twitter as a technology tool can be used to promote blended learning and supplement instruction inside and outside of the classroom. The use of twitter was not all positive. It was clear that first time users had difficulty using twitter and questioned the educational significance of the tool. In addition, the same students were overwhelmed with the volume of information generated via twitter. It is recommended that the integration of twitter should involve training of students to ensure a comfort level that would enhance the educational process and not detract from it due to logistical issues and students' comfort level with the application.

Keywords: Web 2.0, Twitter, Technology.

INTRODUCTION

One of the most effective ways to affect and facilitate changes needed in K-12 education is the use of technology. Successful implementation of technology in classrooms will benefit students and teachers in fully understanding 21st century skills needed to teach and learn with technology, (Raible, Kirkley, & Chen, 2009; Bos & Lee, 2010). As various Web 2.0 tools are integrated in K-12 education to address the needs of 21st century learners a new micro blogging social networking tool utilizing 140 characters or less, tweets or messages, is fast becoming a pedagogical tool at all levels of education. Twitter allows users to broadcast and receive tweets or messages. Research show that Twitter grew 6 times faster than Facebook, the worldwide largest social networking platform and continues to outpace Facebook in growth worldwide, (Nielsen, 2009). This growth means that digital natives, especially high school students, are more likely to use Twitter as part of their social network platform. As educators design instructions to find students where they socially "hang out" Twitter as one of the fastest growing Web 2.0 is an ideal platform to reach and engage 21st century learners.

Web 2.0 in Education

There is no clear definition of Web 2.0 that applies universally to all works of life or activities by researchers, educators, scholars, and the community at large. However, every definition of Web 2.0 shares characteristics of mostly a free web-based platform, where users communicate, interact, create and post contents, collaborate with others, share information, and monitor activities of others as active or passive participants (Buffington, 2008; Jonassen, Howard, Marra, & Crismond, 2008; Maddrell, 2010). Web 2.0s perform different activities singly or combination based on the needs of users, such as wiki, blogs, social networking, digital storytelling, audio and video sharing sites, image editing and sharing sites, and course management sites like Blackboard and Moodle. Researches show that use of Web 2.0 for social interaction is widespread among high school students, (Neilsen, 2009; Hesse, 2010). Some of the common Web 2.0 technologies are wikis, blogs, Facebook, My Space, and Twitter.

Blended Learning

The concept of blended learning defines learning is a continuous process. Blended learning merges various learning activities, including face-to-face classrooms, live e-learning, and self-paced learning, (Kyei-Brankson, Godwyll, Nur-Awaleh, & Keengwe, 2011). Blended learning is an opportunity for educators to provide the most efficient and effective learning experience for students in the 21st century. Blended learning aims at bringing together the best components of face-to-face teaching, the powerful modes of online synchronous and asynchronous activities, and other technology-based instructional methods, (Barnard-Brak, & Shiu, 2010). As educational settings adopt new technologies and define changes that come with these new technologies, the migration towards blended learning as a pedagogical practice is inevitable. Blended learning has many positive attributes which makes it very attractive to educational institutions, educators and students alike.

Blended learning can provide a better educational experience because it is flexible in time and location. The advantages of blended learning include significantly reduced training time, easier access and consistent quality of training, easily monitored participation and improvement, better efficiency and time savings and convenience and cost-effectiveness. Since students have the opportunity to work at their own time and pace outside of a defined time and space blended learning promotes mastery of content. It also promotes an effective communication structure between students and instructor (Shivetts, 2011; Maddrell, 2010). Blended learning also promotes collaboration, creativity, sharing, and motivates and engages students in learning.

Twitter in Academia

Twitter has several unique characteristics and features that have made it one of the fastest growing Web 2.0 tools in social networking. Twitter has the potential to enhance learning and motivate students to engage in the learning process when used to supplement instruction in educational settings, (Parry, 2008; Beaudin & Deyenberg, 2011). Maddrell (2010) identifies three major characteristics of Twitter, communication, interaction and motivation to participate and their distinct features. For the "nature of communication," Maddrell identifies always on/ always accessible, broadcast messages and conversations and shared interest communication as main features of Twitter. For the nature of interactions, Maddrell identifies network ties, transparency, and audience awareness as the main features of Twitter. For motivations to participate, Maddrell identifies access and reciprocity as the main features of Twitter.

Researches show that twitter has several advantages when integrated effectively as a social networking tool and also in educational settings. At the planning level, educators can use Twitter to collaborate to plan, develop, and implement lessons and projects, (Beaudin and Deyenberg, 2011). Use of Twitter builds network around a common theme, (Warlick, 2009). Diamon, (2009) describes Twitter's network building as a communication tool between synchronous and asynchronous methods of communication. However, by nature Twitter is more of an asynchronous tool than a synchronous tool. Twitter is unique in that it can be used to support blended learning, online learning and mobile learning as tweets can be sent from and received on mobile devices such as smartphones, tablets, and iPads (Wiesenhofer, Ebner, & Kamrat, 2010).

Ramsden and Jordan (2009) suggest three different major uses of Twitter as it supports synchronous and asynchronous bi-directional communication and interactions:

- *News updates:* This asynchronous activity is used to update news and general information about the course.

- *Class back channel:* This synchronous activity is done predominantly by students during a presentation or by the teacher engaging students during project based activities on site or off site locations.

- *Personal reflective log:* This asynchronous activity is a teacher designed activity for students to reflect on topics and themes. This activity is student-centered.

Academic use of Twitter will continue to expand as more and more students and teachers embrace its use in teaching and learning. In addition to the uses of Twitter in academia discussed by Ramsden and Jordan, Parry (2008) identifies thirteen other ways to use Twitter is

academia:

- *Class Chatter:* This activity is educational and non-educational conversations that students engaged in inside and outside of the class. This activity extends the walls of the classroom beyond the structured meeting place and time. It keeps students connected all the time.

- *Classroom Community:* Students develop a sense of oneness as a result of twittering as part of a class. This sense of community engages student is meaningful activities across academic and non-activities beyond the structured walls of the classroom and class time.

- *Get a Sense of the World:* Getting students to look at the Public Timeline of Twitter, http://twitter.com/public_timeline, where all public messages get posted gives them an opportunity to view thing globally. Though the "noise" ratio here is pretty high, it provides them with a sense of variation around the world on issues they may be dealing with or are interested in. Participation could be active or as a passive spectator.

- *Track a Word:* "Track "a word allows students to subscribe to posts which contain the word. This active could be used to search for information or just to understand the appropriateness of use of the word.

- *Tracking:* Twitter can be used to track activities of international, national, state, and local activities of groups, educational institutions, non-profit organizations, businesses and governmental activities or agencies.

- *Instant Feedback:* The always on feature and easy access on phones make it easy to get instant feedback from participants. This feature could make Twitter both appealing and engaging for some students, but on the other hand overwhelming for others.

- *Follow a Professional or Organization:* Students can follow someone else who is on Twitter, who interests them or an organization to track their activities.

- *Follow a Famous Person:* Many celebrities, politicians and other news makers are on Twitter. Students can follow the activities of these individual on Twitter as part of class activities and write about knowledge gained or their experiences following the person virtually.

- *Grammar:* Surprisingly Twitter is actually good for teaching grammar. Why? Because of its short form those who tweet often abbreviate and abuse grammar rules, developing their own unique "twitter rules." This helps to demonstrate, both how all communication needs rules/structure and how important something like a comma or a period can be. (Some Tweets become really ambiguous because of their lack of punctuation.) Twitter forces users to be succinct and specific in their tweets.

- *Rule Based Writing:* Related to the above is the idea that when you change the rules (context) around any written communication you necessarily change the content of such an utterance. Rules rather than hindering communication can actually be really productive. Because Twitter limits communication to 140 characters, it is surprising what develops out of this limit, and how quickly one starts to think in messages of 140 characters.

- *Maximizing the Teachable Moment:* It is often hard to teach in context, Twitter promotes teachable moments from all participants. Since all participants have access to every tweet teachable moments from any participant happen frequently, especially when inappropriate or controversial tweets are posted. These moments do help to shape the structure of the class.

- *Public NotePad:* Twitter is really good for sharing short inspirations, thoughts that just popped into your head. Not only are they recorded, because you can go back and look at them, but you can also get inspiration from others. This is really useful for any "creative" based class.

- *Writing Assignments:* Twitter promotes sequential writing activities or assignment. This activity allows different students to add on to existing tweets to build a story, a concept or an idea.

In the Beaudin and Deyenberg (2011) study, students see twitter as a quick and efficient manner of sharing information with peers. The research also shows that when Twitter is used for reflections students gained insight on the thought processes of others, an opportunity they would not regularly get with pen and paper reflections.

Researches show that there are several shortcomings to using Twitter in education settings as is the case with all technologies integrated in an educational setting. The nature of Twitter by nature limits users to only 140 characters per tweet or message. This forces users to condense their thought process to present information in a clear and succinct manner. Beaudin and Deyenberg state that students who used Twitter prior to use in their study were more receptive to it than students who were exposed to the technology for the first time in the study. Students who used it for the first time were frustrated with the tool and overwhelmed with materials presented. Other factors that may affect effective integration of Twitter in educational settings are teachers' lack of knowledge of Twitter, training and experience using Twitter, teachers' attitudes toward technology integration in general, access to hardware with network capabilities for students and teachers inside and outside the educational setting.

Participants

Participants were forty-two high school students enrolled in a social studies course in a public school in an urban area in North Carolina. There were twenty seven males and fifteen females.

Twitter Integration in the Social Studies Course

In response to an invitation from the American Historical Association the teacher in this study integrated Twitter in the course. The focus was to use twitter to help educate and attract the attention of millennial students to participate in a national conversation about the intentions of the Founding Fathers surrounding the Bill of Rights. The following were the guidelines of the invitation:

- The teacher was to create a page for one of the Founding Fathers key issues they faced in creating the nation (specifically during the period from 1783-1816.)

- Identify key events as a need to know for students in the briefcase or in workshop on the era.

- Use a twitter page to engage students in reflections.

- Use "twitpics" to link tweets to primary source documents.

- Keep a historical record with more in-depth descriptions of your tweets.

- Write an essay which compares the views of three founding fathers on a modern day issue. A list was provided with recommended events.

In addition to the guidelines provided by the American Historical Association, the teacher in this study developed guidelines for students' participation, design and products (Table 1). Teacher's Guidelines for Students. The table reflected guidelines for proficient to advanced levels.

Research Questions

The following questions guided this research:

- What are students' perceptions of using Twitter in their social studies course?

- What are students' perceptions of using blended and online learning in their social studies course?

- What were the effects of using twitter and blended learning integration on gender in the classroom?

Research Methods

The review of literature related to the use of twitter in academia provides a comprehensive perspective on the uses of twitter and learning. To examine students' perspective, a systematic, multi-method approach was employed. It included collecting data using both quantitative and qualitative research techniques such as a semantic differential instrument on students' perceptions of twitter, online learning, and blended learning addressing choice between paired extreme adjectives, e.g., important and unimportant, needed and not needed. The study also utilized a questionnaire to identify likes and

Students must…
Part 1 – Twitter Page
Invent 35 "tweets" or more tweets – each tweet gives a Founding Father's opinion to issues based on historical evidence
Create an accompanying paragraph for each tweet which details the significance and other pertinent background information. Paragraph includes pertinent vocabulary words.
Categorize tweets in chronological order: Colonial Era, Revolutionary Era, New Nation, Federalist Period, Jefferson Presidency, War of 1812.
Evaluate the Founding Father's opinion on the major issue of each respective time period.
Incorporate accurate dates and locations
Respond to at least five other tweets from classmates' pages.
Part 2- Primary Source Documents (Twitpics)
Utilize 10 Primary Source Documents using Twit Pics (Each Pic must be explained using SOAPSTONE)
Utilize a variety of pictures/ political cartoons/ Maps and Charts

Table 1.Teacher's Guideline for Twitter Activity

dislikes of using twitter in the social studies course. All surveys and questionnaires were administered after the intervention.

Data Analysis

The quantitative data were analyzed using descriptive statistics to address perceptions of students to the use of Twitter, blended and online learning in their social studies course. Content analysis method was used for the analyses of data collected from the questionnaire. The reliability of the instrument was determined at .973. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. However, there is actually no lower limit to the coefficient. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. The analysis of the qualitative data was based on careful review by researchers.

Analysis and Findings

Students Attitudes towards Blended Learning in the Social Studies Course

The mean of students' perceptions of integrating twitter and blended learning in their social studies classroom was 3.57 on a five point scale. The mean shows a positive disposition towards using twitter and blended learning in their social studies class. The mean of students' perceptions to blended learning was 3.46 on a five point scale, which shows a positive disposition towards the use of blended learning method to delivery social studies instruction. The mean of students' attitude towards twitter is 2.64 on a five point scale. The mean shows an average disposition towards the use of twitter in the social studies course. Figure 1 shows the mean of Students' Attitudes towards Twitter and Blended Learning.

Table 2 shows the Mean of Blended Learning on Bipolar Adjectives show a breakdown of students' attitudes towards blended learning addressing bipolar adjectives.

An analysis of the semantic differential scale yielded the following results. Figure 2. gives the results of students Attitudes towards Twitter and Blended Learning. 83 percent of students see the use of blended learning teaching approach as *important* in teaching social studies. 87 percent of students see the use of blended learning
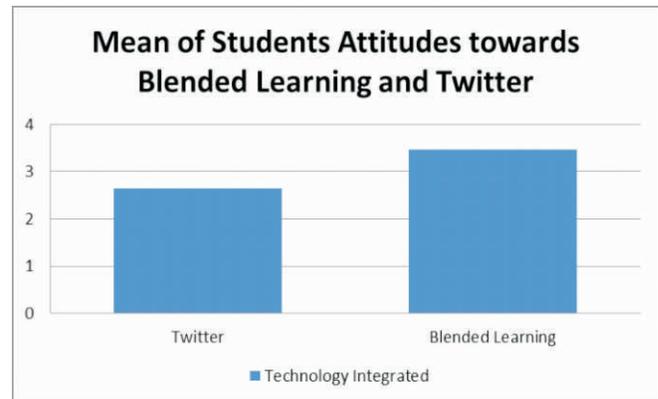

Figure 1. Means of Students Attitudes towards Twitter and Blended Learning

Item Statistics for Blended Learning Perceptions Bipolar Adjectives	Mean
Unimportant/Important	3.56
Boring/Interesting	3.95
Irrelevant/Relevant	3.79
Unexciting/Exciting	3.87
Means nothing/Means a lot	3.46
Unappealing/Appealing	4.10
Worthless/Valuable	3.69
Not needed/Needed	3.31

Table 2. Item Statistics Means of Students' Perceptions of Blend Learning
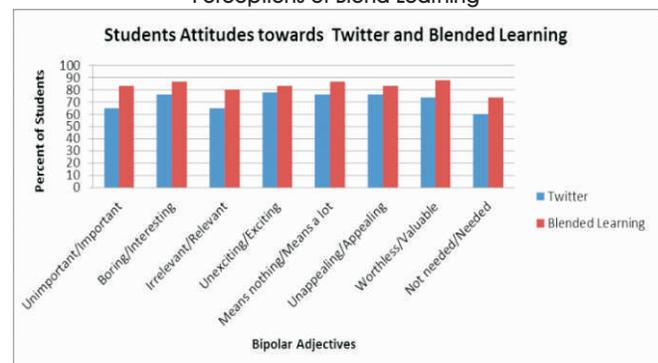

Figure 2. Students Attitudes towards Twitter and Blended Learning

teaching approach as *interesting* in a social studies class. 80 percent of students see the use of blended learning teaching approach as *relevant* in the social studies course. 83 percent of students see the use of blended learning approach as *exciting* in the social studies class. 87 percent of students see the use of blended learning *means a lot* in the social studies class. 83 percent of students see the use of blended learning as *appealing* in the social studies course. 88 percent of students see the use of blended learning as *valuable* in the social studies course. 74

percent of students see the use of blended learning *as needed* in social studies. From the above analysis students in the social studies course have a positive disposition towards the use of the blended learning approach in their social studies course as important, interesting, relevant, exciting, means a lot, appealing, valuable and needed.

Students Attitudes towards Twitter in the Social Studies Course

On the other hand the mean for students' perceptions of twitter was 2.98, which also shows a favorable disposition to twitter as a learning tool in a social studies course. Table 3 gives the Item Statistics Means of Students' Perceptions of Twitter Use in Social Studies. As to the effects on gender, females had more favorable perceptions to both blended learning approach and twitter integration. The mean for females on blending learning was 4.1 and that of males was 3.09. The mean for females on twitter was 3.36 and for males 2.77. It was clear that the female students were more receptive to the integration of blended learning approach to teaching social studies and the integration of twitter in the social studies class.

An analysis of the semantic differential scale yielded the following results. Figure 2 shows the result of students Attitudes towards Twitter and Blended Learning. 65 percent of students see the use of twitter as *important* in teaching social studies. 76 percent of students see the use of twitter as interesting in a social studies class. 65 percent of students see the use of twitter as *relevant* in the social studies course. 78 percent of students see the use of twitter as *exciting* in the social studies class. 76 percent of students see the use of twitter *means a lot* in the social studies class.

Item Statistics for Twitter Perceptions	
Bipolar Adjectives	Mean
Unimportant/Important	2.97
Boring/Interesting	3.82
Irrelevant/Relevant	3.26
Unexciting/Exciting	3.95
Means nothing/Means a lot	3.33
Unappealing/Appealing	3.79
Worthless/Valuable	3.31
Not needed/Needed	2.97

Table 3. Item Statistics Means of Students' Perceptions of Twitter Use in Social Studies

76 percent of students see the use of twitter as *appealing* in the social studies course. 74 percent of students see the use of twitter as *valuable* in the social studies course. 60 percent of students see the use of twitter as *needed* in social studies. From the above analysis students in the social studies course have a less positive disposition towards the use of twitter in their social studies course than they do of the blended learning approach. There are several key factors that could be attributed to this perception. In addition to logistical problems some students' faced some of them were exposed to twitter for the first time.

Positives of Using Twitter in the Social Studies Course

The use of twitter in the social studies courses yielded several positives. Analysis of students' surveys on the positives of using twitter show that some students have a good understanding of the importance and relevance of using twitter in teaching social studies. The key of positive uses of twitter are summarized below:

- It promoted collaboration, creativity, team work, and sharing of knowledge in a virtual setting.

- It is an effective way to use technology

- It appealed to our age group.

- It was fun to work with twitter. You remember everything when you are having fun.

- It promoted the desire to conduct a research.

- It promoted role play as students were given different tasks to conduct research and report to the class.

- It was an effective use of social media in our lesson.

- It was different from our regular class lesson. It was new which made it interesting.

- It extended our lesson outside of the regular class time.

- Use of twitter was innovative.

- It motivated and engaged me in the lesson

Concerns with Using Twitter in the Social Studies Course

The integration of twitter in the social studies was not without concerns or disadvantages. Analysis of data on students' concerns about the use of twitter in their social studies course identifies key problems with twitter integration. The key areas of concern are summarized below:

- Too many logistical problems to overcome to create an account and maintain password. Students had issues with internet access, availability and format of presentation.

- It was difficult when not everyone was on twitter at the same time to discuss, plan and create knowledge.

- There were too many tweet sheets to keep up with. Some students felt overwhelmed by the sheer number of tweet pages they had to access.

- It was hard and confusing to first time users. First time users did not see the educational benefits of using twitter in education.

Conclusion

Blending learning approach allows educators to merge 21st century learning environments with traditional teaching to promote effective learning environments that utilizes social networking technologies that students use in their everyday social network structures. The integration of twitter in the social studies course in this study promoted collaboration, creativity, team work, engaged students, motivated students, made the lesson fun and allowed students to share knowledge. It also extended the walls of the traditional and a defined class time to a virtually lesson anytime and anywhere. Students were able to address concepts and assignments at their own time and pace after school hours. The findings show that students were receptive to different presentation styles in their lessons. It is clear from this study that students were more receptive to the blended learning approach as a delivery method than to the use of twitter in their lesson. Twitter as a technology tool can be used to promote blended learning and supplement instruction inside and outside of the classroom.

Twitter as an educational tool has the potential to transform and enhance 21st century teaching and learning by providing students with the opportunity to engage in fun, creative and interactive lessons. To integrate Twitter as an educational tool, the purposes of using twitter should be clearly outlined, defined, aligned with the curriculum and structured for it to have a meaningful impact on students' learning. Twitter should not be integrated for the sake of integration without a clear educational value. This study also shows that blended learning and use of twitter had gender effects. Since this study was limited to a small group of students. More study is recommended in this area to validate this outcome and provide more insight on the use of Twitter in education. The use of Twitter was not all positive. It was clear that first time users had difficulty using twitter and questioned the educational significance of the tool. In addition, students were overwhelmed with the volume of information generated via twitter. It is recommended that before integrating Twitter as an educational tool, students should be trained to ensure a comfort level that would enhance the educational process and not detract from it due to logistical issues and students' comfort level with the application. Also, teachers need to prepare students on how to analyze tweets received to ensure that they are able to filter through the information to gain educational value. Despite the shortcomings observed in this study, Web 2.0 tools like Twitter continue to be more accessible and provide avenues for educators to reach students inside and outside of the traditional classroom.

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ABOUT THE AUTHORS

Dr. Prince Hycy Bull is an Associate Professor and Program Coordinator of Educational Technology at North Carolina Central University School of Education. His research activities include, but not limited to technology integration with preservice and in-service teachers, learning technologies, emerging technologies, and technology integration with K-20 faculty and staff. He is a graduate of the University of Sierra Leone, Fourah Bay College, North Carolina Central University and North Carolina State University. He has extensive knowledge in integrating technology in education. His credentials are North Carolina teaching licenses for Intellectual Disabled (Mild and Severe), Mentor, Curriculum Specialist, Instructional Technologist, School Principal and Exceptional Children's Director.

Ms. Shayla Adams is a social studies teacher at Hillside NT High School in Durham, North Carolina. She earned her undergraduate degree in Urban Studies with concentration in Political Science from Wellesley College and her graduate degree from Duke University, where she earned her Master of Arts in Teaching with a concentration in Social Studies. She has extensive technology in integrating learning technologies in her social studies courses to motivate students to engage with the content and create knowledge.