

Twitter as a Classroom Tool: Exploring the Use, Benefits, and Downfalls from the Perspectives of Instructors and Students

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Abstract

Recently, the educational community has become aware of Twitter and begun to use it as a pedagogical tool. Yet, using these tools within a course is not enough to ensure positive outcomes. Thus, more research is needed to understand the perceived benefits and downfalls of its integration in the classroom context. To this end, the present study examined (a) how instructors are using Twitter and (2) compares and contrasts instructors and students perceptions of the benefits and downfalls of using Twitter in the classroom. Practical applications and directions for future research are discussed.

Whether it sparks a Twitter hoax about Justin Bieber's death (Serpe, 2012), or a major motion picture about how Facebook came into existence, it would be difficult to argue that computer mediated communication (CMC) does not play a major role in our day-to-day lives. With millions of users now socially and professionally networking on sites such as LinkedIn, Facebook, Twitter, and Tumblr, it is unsurprising that this phenomenon has

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received increasing attention from instructional researchers over the past decade, with interest in learning more about how to tailor the use of these popular sites to the classroom (Sherblom, 2010). In general, CMC has been found to be a useful strategy for accomplishing a myriad of goals, such as enhancing students' cultural awareness (Zeiss & Isabelli-Garcia, 2005), helping them think critically and independently, (Khine, Yeap, & Lok, 2003), and giving them longer processing time to more effectively answer discussion questions (Baralt & Gurzynski-Weiss, 2011).

In recent years, communication scholars have also begun to examine how online networking sites impact student-teacher communication (DiVerniero & Hosek, 2011; Mazer, Murphy, & Simonds, 2007; 2009). More than 200,000 instructor profiles can be found on websites such as LiveJournal, Blogspot, and Facebook (Mazer et al., 2007; Toppo, 2006). Although not all for classroom purposes, it is clear that instructors have a burgeoning presence on online networking sites. Inquiry into teacher-student communication via these sites, with a focus on self-disclosure and privacy management, has shown they impact relational building and students' perceptions of instructors (DiVerniero & Hosek, 2011; Mazer et al., 2007; 2009). Specifically, researchers found that higher levels of instructor self-disclosure on these sites were related to higher perceived credibility, anticipated levels of motivation and affective learning (Mazer et al., 2007; 2009). Instructor disclosure also served to humanize the instructors in students' eyes (DiVerniero & Hosek, 2011). However, these studies have focused on communication outside of the classroom, in situations where students either stumbled upon their instructors' profiles or were placed in an experimental situation. In contrast, the present study sought to better understand the role of these sites in the classroom environment, as a strategy for instruction and learning.

As computer mediated communication has grown in popularity over the years, student expectations and perceptions have shifted regarding the instructor's use of technology as a pedagogical tool (Khine, et al., 2003; Lane & Shelton, 2001; Li, Finley, Pitts, & Guo, 2010; Tutty & Klein, 2008). Students have begun to expect their instructors to use moderate amounts of technology inside and outside the classroom, evaluating them to be more competent than instructors who do not use technology (Schrodt & Witt, 2006). Kern (1995) found that 93% of students surveyed considered the incorporation

of CMC-based discussion as a positive addition to the learning process. Therefore, use of email and learning management systems, such as Blackboard or Canvas, are not simply strategies to encourage participation or critical thinking, but rather are salient in students' assessment of instructor credibility (Schrodt & Turman, 2005). Yet, using these tools within a course is not enough for achieving learning objectives or satisfying students' expectations (Khine et al., 2003). Several studies have shown that the most important component of technology is the manner in which it is used (DiVerniero & Hosek, 2011; Lane & Shelton, 2001; Li et al., 2010; Mazer, Murphy, & Simmonds, 2007; 2009; Schrodt and Turman, 2005; Sherblom, 2010). For instance, Lane and Shelton (2001) argued that integrating technology for the sake of doing so keeps instructors from considering the actual benefits and downfalls of use, such as the popularity versus the extra effort it requires. When CMC involves the use of social networking sites such as Facebook, students may not be thrilled with the encroachment on "their turf," and will expect instructors to remain professional despite the context (DiVerniero & Hosek, 2011). Effective instructor use of CMC has been tied to positive perceptions of credibility (Schrodt & Turman, 2005), improved learning (Li et al., 2010), and perceptions of instructor immediacy (McComb, 1994). With such major outcomes on the line, more research is necessary to better understand how instructors utilize CMC as a classroom tool, as well as instructors' and students' perceptions of the process, which were the goals of the present study.

A new and burgeoning tool for interaction on the web is Twitter (Farhi, 2009). This 140-character microblogging website allows registered users to share brief thoughts in real time to their "followers;" fellow Twitter users who have access to their updates. Recently, the educational community has become aware of this phenomenon and begun to integrate Twitter into the classroom (Johnson, 2009; Manzo, 2009). Similar to other forms of CMC, researchers have made arguments for this tool as a way to help students overcome shyness (Kirkpatrick, 2009), and increase the amount of student participation (Junco, Heiberger, & Loken, 2011), particularly in large classrooms (Aagard, Bowen, & Olseova, 2010). In a semester-long experimental study, Junco et al. (2011) found that students in a first year seminar course who used Twitter had a significantly greater increase in

engagement and higher semester grade point averages than students not using the site for class. In a separate study on large classes and Twitter use (Elavsky, Mislán, & Elavsky, 2011) researchers discovered that students were intrigued by the idea of the integration of Twitter as a learning tool, and said that it improved the experience of the class and increased their engagement with the course. However, the researchers also noted that an analysis of the class' tweets over the course of the semester did not illustrate a high use of the site and it did not seem to "enhance student interaction above and beyond class-time parameters" (Elavsky et al., 2011, p. 225). Thus, the helpfulness of Twitter may only be in students' perceptions of the instructor rather than learning outcomes. Regardless, it is clear that Twitter can impact classroom communication. Less is known about the specific ways instructors use Twitter as a classroom tool, particularly across class sizes. Ultimately this information it is necessary to understand the function and outcomes associated with technology use in the classroom (Schrodt & Witt, 2006). Therefore we posed the following research question:

RQ1: How do instructors use Twitter as a classroom tool?

While Twitter profiles and messages are arguably far less revealing than those on Facebook or MySpace, the site is still designed for social networking and not typically for instructional purposes. Schrodt and Turman (2005) argued that when it comes to technology, "...most college instructors are faced with important pedagogical decisions regarding the prudent use of instructional technology in traditional classroom formats," (p. 181). If technological use can influence student perception of instructor credibility (Schrodt & Turman, 2005), college instructors may benefit from instructional research, which examines the advantages and disadvantages of integrating technology into the classroom (Lane & Shelton, 2001). Hence, we investigated both student and instructors' perceptions of and experiences with Twitter as a classroom tool, posing the following questions:

RQ2a: What are instructors' perceptions of the benefits of Twitter as a classroom tool?

RQ2b: What are students' perceptions of the benefits of Twitter as a classroom tool?

RQ3a: What are instructors' perceptions of the downfalls of Twitter as a classroom tool?

RQ3b: What are students' perceptions of the downfalls of Twitter as a classroom tool?

Method

In the present study, participants answered a series of questions designed to elicit a description of their use and perceptions of using Twitter as a classroom tool. Two samples, one from instructors and one from students, were independently collected. While both samples were collected to examine the ways in which both samples experienced the use of Twitter as a classroom tool, the specific sampling procedure and data collection methods differed for each sample.

Sample 1 Method: College Instructors who used Twitter as a Teaching Tool

Sampling procedure and participants. Participants for the college instructor sample were solicited via professional networks and snowball sampling (Creswell, 2007). The call contained the research announcement and the link to complete the questionnaire located on Qualtrics.com.¹ Potential participants were asked to send the research request to other potential participants (Granovetter, 1976). In order to be considered for the study, instructors must have taught at the college level and used Twitter as a classroom tool. Two calls for participation were sent, and after the second call and response, theoretical saturation was reached, meaning there were observed recurring patterns and themes within the data, and no new categories or themes emerged after the second call (Baxter & Babbie, 2004; Creswell, 2007).

Participants responded to 15 open-ended questions to solicit their experiences sharing information about how they decided to use Twitter as a teaching tool, such as, ways in which they have used the site, what reactions they received from students, and their perceptions of the benefits and downfalls of instructional use of the site. The questionnaire contained six additional open-ended demographic

¹Qualtrics.com is a web-based software program used for data collection. Data is encrypted during transit to the website to ensure anonymity and data is not used or redistributed in any way.

questions.

A total of 44 college instructors responded, though only 22 completed the entire survey (16 women, 6 men), hence only completed responses were taken into account for data analysis. The instructor ages ranged from 26 to 60 years old ($M = 41.7$, $SD = 11.01$). All of the instructors self-identified their ethnicity/race as Caucasian. The teaching experience of the instructors ranged from three to 33 years ($M = 10.59$, $SD = 7.28$). The pool of participants represented a cross-section of teaching job statuses including 18 associate/assistant professors, one full professor, two lecturers, and one graduate teaching assistant. Thirteen participants taught within the communication studies discipline and nine in public relations and journalism.

Although the data from instructors helped give insight into the context, data was also collected to measure students' perception of using Twitter as a classroom tool, which allowed for a comparison and contrasting viewpoints to reveal a more complete description of the context from the perspective of both students and instructors.

Sample 2: College Students Whose Instructors Used Twitter in their Courses

Sampling procedure and participants. To be considered for the study, student participants must have been at least 18 years old and have had at least one college instructor who used Twitter as a classroom. Research team members, consisting of 40 college students in the lead author's interpersonal classes, solicited participants via the research team members' social networks and snowball sampling (Creswell, 2007). Prior to solicitation, research team members received three class periods worth of instruction on the research process, including how to conduct standardized oral interviews, ask probing questions, and transcribe interviews. As part of their training, student interviewers read and reviewed the interview protocol that was created by the authors of this study, individually and as a group with the first author to ensure clarity and address any questions (Baxter & Babie, 2004). The first author supervised the progress of the student interviewers throughout the data collection process. The Institutional Review Board's code of ethics were also reviewed in class, with a focus on ethical recruitment, the voluntary nature of the participants' involvement in the study, and the importance of confidentiality.

Interview questions focused on students' initial reactions to finding out Twitter was going to be a component of class, how, if at all, this altered their view of the instructor, how the site and its purpose was described to them, and their perceptions of the benefits and downfalls of the site. The interviews took 20-60 minutes each and were transcribed by the research team member who completed the interview.

The research team interviews yielded a total of 57 (20 male, 37 female) student participants from universities in the Southeast. Students' ages ranged from 18 to 24 ($M = 19.9$, $SD = 1.51$). Thirteen students did not provide their age. Student participants' ethnicities/races were Caucasian ($n = 50$), African American ($n = 5$), and mixed race ($n = 2$). All but 10 participants identified as communication majors. Other majors included English, business, biology, and political science.

Data Analysis

The authors analyzed the data from both samples in three phases. Phase one occurred after the data collection from the instructor sample was completed. During this phase, all of the instructor questionnaire responses were independently read in their entirety to begin open coding (Lindlof & Taylor, 2002). During this "initial, unrestricted" step (Lindlof & Taylor, 2002, p. 219), main over-arching themes of the data set were selected. Labels were assigned to each theme and then marked in the questionnaire where those themes were found (Lindlof & Taylor, 2002; Rubin & Rubin, 2005). The second phase occurred after data collection from the student sample was completed. During this phase, the same process steps as in phase one were completed, but with the student data. Finally, phase three of the analysis involved a validity check. Specifically, two online data conferences using Skype.com were conducted between the authors to compare and contrast viewpoints. During these Skype meetings themes were synthesized, collapsed, and relabeled to give a more straightforward description of each. Upon agreeing on the validity of the themes, a collaboratively developed description of each theme was created to correspond with each research question reflecting the response of both groups, with relevant exemplars chosen.

Findings

The purpose of this study was to examine the ways in which instructors use Twitter as a classroom tool and students perceptions of its use and usefulness. Research question one examined how instructors used Twitter as part of their classes. In the present study, two major themes, Content Engagement and Skill Development emerged from the data to address how instructors used Twitter. Although these two themes represent ways that instructors used Twitter with their classes, their function is not mutually exclusive. In other words, instructors could use Twitter to engage students with the content and at the same time use it to develop skills. Although the responses for this research question only reflect instructors' perceptions of their use of Twitter, students responses echoed these themes. To follow is a description of these themes supported by representative quotes from instructors' responses to the open-ended questionnaire.

Content Engagement

The first theme, Content Engagement, suggests that instructors used Twitter when they believed it would help students and instructors meaningfully engage with course content. In this way, instructors hoped that Twitter would help them and their students reinforce, extend, and apply course principles. Typically, instructors used Twitter in this way as part of class assignments/activities, extra credit, or to manage general course logistics (e.g., convey announcements).

Several instructors used Twitter because it related directly to their course curriculum. For example, instructor Alex states, "Social Media meshed well with the public relations curriculum." Similarly, instructor Jeremy noted, "We had the capabilities and it ties nicely into curriculum for our majors." While these two instructors used Twitter because it fit within their courses, other instructors used it to build content relevance; specifically with a focus towards students' professional and civic goals. Instructor Brianna used Twitter in order to mirror the ways in which it is used in organizational contexts. She stated, "I was teaching students how to use social media in professional and journalistic writing and determined that tweeting some messages as parts of lessons might be an effective way to engage them."

Other instructors stated that they used Twitter as part of class

assignments and activities to help students engage with and apply course content. An example of this can be seen in instructor Michaela's exemplar:

Students in one of my classes are required to post a tweet 2 [times] a week reflecting on content in the class discussions/readings. The other class uses Twitter infrequently as a pre-set homework assignment to explore how people link/meet/communicate through cyber culture.

Likewise, Instructor Darren speaks directly to this point when he comments; "I use it as a discussion board. When students observe some of the classroom principles I ask them to tweet with a hashtag." Instructor Kathleen's use of Twitter captures a variety of curriculum related objectives, she stated:

I used it for small discussion groups to share their ideas with the whole class by projecting their responses on the screen in front of the room. The students also had a few assignments where they had to respond to posts from their peers. Each night before an exam, I also made myself available on Twitter for students to ask questions about material.

Several instructors want students to do more than comment on instances in which they made connections to content inside and outside of the classroom. For these instructors, their aim was to help students engage in critique and collaborative meaning making related to course content. Instructor Julie achieves this by having her students focusing directly on the communication process. The following exemplar explains her approach:

It depends on the course, but most of the use involves students analyzing communication (like State of the Union, political debates, or popular culture like Kanye West interrupting Taylor Swift) and tweeting brief analysis and breakdown of the communication process. Students use a hash-tag and course number to stream along with each other's comments....

In a similar vein, instructor Kendra acknowledges that students need to find meaning in their use of Twitter in order for it to serve a pedagogical purpose. The following exemplar clarifies how Kendra

uses Twitter for this purpose:

I have asked students to comment on class readings; I also have asked students to choose a cause or interest and build a community around it (the second alternative has worked much better b/c students realize there is a purpose to the assignment, and they are not using twitter just to be using it).

Finally, several instructors mentioned that they used Twitter primarily to manage course logistics such as posting course updates and announcements. Instructor Deanna captures this when she stated, "...For others [classes] I use to update students about deadlines and offer extra credit via quick, timely responses."

Overall, many instructors used Twitter to engage students in critical analysis, reflection, and application of course content; yet, others used it as a way to help students develop and practice communication and professional skills.

Skill Development

The second theme, Skill Development, illustrated that some instructors used Twitter as a medium for skills practice. More specifically, instructors' used Twitter in this way to help students improve skills related to participation, writing, and social media usage. Overall, the majority of the instructors used Twitter as a way to augment in-class and out-of-class discussion. For example, instructor Serena used Twitter because it allowed students to engage in out of class communication. She noted, "I wanted to increase opportunities for students to participate beyond the classroom. I want to connect course material to current events."

Several instructors used Twitter to increase interaction during large lecture classes. For example, instructor Kathleen stated, "I was looking for a way to foster more discussion and interaction in my large lecture classes. I had read an article about using Twitter and decided to give it a try." Similarly, instructor Kacie said, "I was teaching a large lecture course and wanted to find a way to use technology to get responses from students in an efficient manner. In a follow-up question, instructor Kacie further clarified her approach to fostering participation amongst her students using Twitter. She stated:

I had students form groups and tweet their responses using a

hashtag. Then I used a filtering program to list all of the comments marked with the hashtag on the projector in front of the classroom. I also had students respond to one another's comments outside of class.

Surprisingly, instructors did not regularly cite using Twitter as a way to engage reticent students or those with a lower willingness to communicate. One exception was Instructor Daniel, who said that he used Twitter, "as a back channel to classroom activities; shy students can tweet questions that I answer without the stigma of raising hands or looking dumb." In addition to using Twitter to engage shy students, he used it to help students engage in impression management. Overall, instructors appear to use Twitter as a classroom tool because of its potential to increase student-student, student-teacher, and student-community interaction surrounding course principles.

In terms of writing, instructor Bailey noted, "I needed a tool to improve student writing" and instructor Michaela explained her purpose for using Twitter in the following way, "I was looking for a tool that students could access via the cell phone and that would allow students to practice succinct writing skills." Although only two instructors explicitly stated that this was their goal for using Twitter, other instructors commented on the ways in which the 140-character limit requires students to create messages that were succinct and clear. Instructor Lynn's comments illustrate this approach. She noted:

I work in a [journalism/communication] program and Twitter is being used regularly by professionals. I decided that it would be good for students to get into the habit of using it on a regular basis so that they could be familiar with condensing ideas into short tweets.

The previous exemplar also demonstrates the burgeoning value placed on those individuals who can use social media effectively. For this reason, many instructors stated that they used Twitter in their classes to model current industry practices and expectations. Instructor Abby commented directly on this:

In my field, journalism and mass communication, journalists are frequently using Twitter to promote their stories or their publication's stories. In a sense, it serves as a branding tool for

journalists. Public relations professionals are also using Twitter. So students who aspire to one of those careers need to know how to use it.

In a similar way, instructor Barbara said, “I teach new media and students need to understand how twitter works. I also used it for my intro to PR course because future PR practitioners need to know about social media.” Finally, Instructor Kendra, said, “I realized students must be familiar with this type of technology, and that it will make them more marketable.” For these instructors, having students learn how to use Twitter (and other new media platforms) has the potential to increase students’ marketability and the educational setting presents a low-stakes opportunity for students to develop highly sought after social media skills.

Benefits of Twitter

The second research question asked for student and instructor perceptions about the benefits of Twitter as a classroom tool. The themes below illustrate that both parties noted the instructional, as well as the social, advantages of the site for the classroom. The responses of the instructors and students, followed by an elaboration of each theme supported with representative quotes are listed in Table 1.

Privacy. Instructors discussed the benefit of privacy settings and expectations on Twitter, in particular as it compares to using other social networking sites as a classroom tool, such as Facebook. Twitter, unlike Facebook, does not ask for or offer basic personal information, such as relationship status or age. Instructors referred to this as “less of an intrusion” on their own private information, and said they worried less about stumbling upon the students’ basic private information as well. Instructor Kacie stated, “I think using Facebook would really let me see things I don’t want to see and there would be too many distractions for our [teaching] purposes.” Instructors also noted that the “conversation” that happens with students on Twitter is public, rather than private as it might be on other networking sites, making it more appropriate for student-instructor interactions.

Instructors also touched on the importance of the labels for interactions between users of Twitter, citing them as more privacy-oriented than Facebook and suitable for classroom use.

Table 1. Comparison of Instructor and Student Perceptions of the Benefits of Twitter

Theme	Instructors' Perceptions	Students' Perceptions
Privacy	Hides private information better than other social networks Allows public conversation rather than private, which would be "creepy"	--
Ease	Less to distract than other networking sites Simpler to set up Instant feedback/access	-- -- Instant feedback/access
Relates to course objectives	Concise writing Allows students to "teach" "Hands on" strategy	-- Allows students to "teach" "Hands on" job training skills
Participation	Allows shy students to have a voice	Allows shy students to have a voice
Immediacy	--	Allows deeper connection to professors Meets students online – where they already are Illustrates teachers are willing to learn new technology

Note: The indication of a "--" indicates that this theme was not evident from that sample

Instructor Daniel said, “Following’ someone [on Twitter] is less creepy than pretending to be their ‘friend.’ As it was explained to me by a student, ‘Facebook is for friends and family; Twitter is for strangers.’” Thus, the terminology itself allows for expectations of what type of information might be shared, with “friendship” on Facebook potentially allowing overly intimate information exchange.

Ease. Both instructors and students spoke of the ease of Twitter’s use as one of its benefits as a classroom tool. Reasons behind this perception, however, were not always the same for each group of participants. Instructors argued that Twitter served as an easy tool to use in part because of the lack of distractions on the site. Instructor Michaela stated, “Twitter forces a limit to the micro-blog post and it does not employ many of the games, profile updating, pictures of the other [networking] sites.” Thus Twitter has potential to be more streamlined and easier to get students to use appropriately. Instructors also cited the ease of setting up a profile and engaging in interactions on the site. With fewer options of what to include in a basic profile and the limit of only reading or updating statuses, there were not many things that the students had to learn about in order to use the site.

Both instructors and students spoke about the ease of instant access to information and/or each other as benefits as well. Instructor Brianna said, “It gets students to post ideas when they come to them rather than waiting until the next class.” Jesse, a student, stated “You can follow your classmates on twitter to make it easier and it’s faster...you get an update that someone mentioned you and you can look directly at it, you don’t have to go searching through your statuses.” Ginger, also a student, concurred, “I think that it’s nice that [my professor] can get information out to us so quickly. Students are constantly checking their Twitter.”

Relates to course objectives. Both instructors and students discussed the ability to relate interactions on Twitter to the course objectives as a benefit. As such, this finding reinforces the ways in which instructors stated they used Twitter in response to our first research question. Instructors focused on the usefulness of Twitter’s 140 character limit as an advantage for helping students learn how to write concisely. Both groups of participants pointed out that Twitter allowed

students to take on a “teaching” role by tweeting about things in “real life” they experienced which related to course content. Instructor Bailey stated, “It teaches multiple audiences, adapting to audiences, and great information on PR and Marketing. Further, it carries the conversation outside of the classroom and allows the students to continue to engage after the class ends.” Samantha, a student, said “It was getting us not to turn our brains off after class, to remind us throughout our Twitter feed that hey you are still learning.” Finally, both students and instructors spoke to the benefit of using Twitter as a strategy to give students “hand-on” job training. Journalism instructor Alice stated,

The ability to relate it to the principles of CMC and social media; a hands-on approach of sorts. They begin to see the value of the Twitter community, particularly when something big happens, such as a breaking world news event and they know about it before their friends or family.

Pam, a student, echoed this sentiment, stating, “Well, I think, especially for a communications major, as I am...it gets you into the networking process and so it’s good.”

Participation. Although none of the instructors spoke about enhancing participation as a main purpose of using Twitter in the classroom, both they and students agreed that Twitter was beneficial for giving shy students a voice in the class. This notion reinforces the findings to the first research question related to skill development and interaction. Although this voice may only be “heard” through Twitter, it allows quiet students to add their opinions and illustrate their knowledge in a less stressful environment. Instructor Kathleen said “It offers students who might otherwise not speak up in a large group setting another way to voice questions, concerns, or comments.” Student Amanda said, “We had a larger class...and I was a little overwhelmed and nervous at first in front of all of them, Twitter was an easier way to ask questions and have simultaneous conversations with the professor.”

Immediacy. A final benefit, cited by student participants only, focused on how Twitter allowed instructors to appear more immediate. They

felt a deeper connection to the professor, noted by students in large lecture classes in particular. Natalie stated, “It helps us draw a better connection with the professor. It also kind of changes the level and makes it a little more informal so it makes students feel a little more comfortable approaching their professors for specific things.”

They also spoke about perceiving that the professor was putting forth the extra effort to meet students where they already are, online and on Twitter. Monica said “Kids do a lot of different things now, like Twitter and Facebook. So, maybe she thought it was a good way to keep in contact with some of the people that are always on the internet.” For these participants, it illustrated that their instructors were willing to learn a new technology to engage in a progressive strategy the students could relate to. Tammy further noted, “It made me see her as more of a positive person because she was so active in trying to use the latest technology to communicate with her students and being a communications professor I think that’s really important.”

Downfalls of Twitter as a Classroom Tool

Research question three asked what perceptions of students and instructors had regarding the downfalls of Twitter use as a classroom tool. Table 2 reflects the similarities and differences in the instructors’ and students’ perceptions of Twitter’s downfalls. Each theme is then elaborated on with representative quotes. Overall, instructors and students responses reflected a tension between instructional outcomes and social ramifications.

Privacy. Although privacy was cited by instructors as a benefit to Twitter, this benefit was only discussed in comparison to other social networking sites such as Facebook. In general, there was still a concern about sharing and receiving private information deemed inappropriate for the student-instructor relationship. The first concern surrounded the personal tweets students and instructors posted and saw from one another in addition to their course related tweets. Instructor participant Linda said, “Students can post tweets that are not meant for the assignment and feel self-conscious about a professor reading what was posted.”

Table 2. Comparison of Instructor and Student Perceptions of the Downfalls of Twitter

Theme	Instructors' Perceptions	Students' Perceptions
Privacy	Personal tweets problematic Appropriateness of following/being followed	Personal tweets problematic Appropriateness of following/being followed
Distractions	Feedback screen Reading posts during lecture	Feedback screen Writing/reading posts during class
Grading	Initially time intensive Difficult to grade in 140 characters	Unclear how grading occurs 140 characters limiting
Technological Concerns	Lack of (student) access to technology Students resistant to learning new technology Students lack technological skills	Lack of access to technology Uninterested with learning new technology Worry about lack of technological skills
Overwhelming	--	Already required to check email and Blackboard Frequency of required use

Note: The indication of a "--" indicates that this theme was not evident from that sample

Student Jason stated,

It takes out that idea of your social life and your school life being two different things because there no separation. If you're tweeting about going out on the weekend and then the next tweet is you tweeting about your comm[unication] class then there is a possibility that they blur together.

The second concern was about whether it was appropriate to follow and be followed by an instructor or student. Student Mary said, "Sometimes it can take away from the seeming credibility of the class because it makes it seem like they just want to be your friend and have fun, instead of putting themselves in more of an authority position."

Distractions. Twitter as a distraction was discussed by both students and instructors as well. Both groups perceived that when feedback screens were used and/or when students were expected to tweet during class, it served as a distraction. Although this process allowed students to give their real time thoughts on the lecture, as well as allow shy students to have a voice, in the end both groups felt that students lost out on notes and important information because they were busy trying to keep up with tweeting. Student Catherine stated, "Sometimes you would get on [Twitter] for class and read everyone else's tweets but sometimes when we used it during the movies in class I would focus more on it than the actual movie." Student Robert agreed, "I would say the only downfall would be focus for students, because personally for me, I follow a lot of sports related people, so I would see a link and click on that and get sidetracked in the class." Similarly, instructors stated that keeping up with tweets during class stretched them too thin in their attempts to lecture and respond. Instructor Kathleen said, "It is very difficult to keep up with posts while lecturing. I've heard that having a TA to keep up with Twitter while you lecture would help, but I didn't have that luxury."

Grading. Both students and instructors cited the grading process as a potential downfall for Twitter as a classroom tool, though for slightly different reasons. Instructors spoke about how time intensive the process was, at least at first, to grade so many tweets from sometimes

hundreds of students. Furthermore, they stated it was problematic determining how to grade tweets when they are only 140 characters long. Instructor Serena stated, "It is time intensive until you find a rhythm for grading."

Students' responses mirrored the instructors' concerns, with discussion about the lack of clarity surrounding how grading occurred for their Twitter assignments. Becky said, "I didn't really understand the whole point of how I was going to get graded by using a social networking site." They also stated they found it difficult articulating ties to course-related material in the very small character limit, and were concerned with how to do so in a manner that would result in a good grade. Student Alyssa said, "It was hard to be concise in the beginning cause you want to say all this great stuff you were finding but you have to fit it in 140 characters."

Technology Concerns. Lack of access to technology was perceived as a downfall of using Twitter by both students and instructors. The concern though was solely about student access to laptops and the internet in order to complete their work. Instructor Lynn described, "Not all students where I teach have, or could be expected to have, equal levels of computing or smartphone access, so some lessons or messages must be made redundant through older or more traditional platforms." If students did not possess a laptop they could use in class, or a phone that connected to the internet, they would be out of the loop for their instructors' updates, as well as be unable to complete their assignments that were generally expected to be real time responses to shows or films. Student Ashley discussed concern for fellow students' access, saying "They might just not have access to the internet depending on their socio-economic status."

Although many students spoke of how progressive their instructors were for being online, "where the students already are", many of them also discussed not being familiar with the technical aspects of Twitter at all, and cited this unfamiliarity as a downfall. Student Tiffany said, "With Twitter in general I kind of had a bias against it because I was like oh this is stupid, Facebook is so much better. There are other social media sites that are way better than this." Instructors spoke of the students' resistance to learning how to use Twitter, at least initially. This was echoed by students, who said that at least

initially they did not like or want to learn about Twitter if they did not already use the site. Instructor Alice described a difficult aspect of Twitter as a classroom tool, “Convincing students of its worth. Much like when I use blogging, many students do exactly the bare minimum that the assignment requires. [It’s] quite frustrating.”

Both instructors and students also cited the students’ lack of technological skills as a downfall of Twitter use. Again, despite students’ discussion of how often they were on other sites such as Facebook, both the instructors and students stated that students learning new skills such as using hashtags and writing in 140 characters involved a slow learning curve, possibly tied to the resistance. Instructor Kacie said, “Not all students are that tech savvy; you have to take time to teach them how to use it.”

Overwhelming. Only students spoke about how Twitter could serve as an overwhelming addition to course requirements. Even if they did not have an issue with Twitter in general, many stated that in addition to email and Blackboard, being required to check Twitter spread them too thin. They also spoke about the frequency they were required to check the site. For some students whose instructor used the site only as extra credit, they would not know when extra credit would be available, so they would have to check constantly to not miss their instructor’s updates. Student Karen said, I kept the Twitter account for the whole semester, but I only really got on it once in awhile. And whenever I got on it, I found a question that was from like, two weeks ago, and I was like, ‘Oh, I didn’t know about that.’

Students who were graded on Twitter use felt pressured to update often, as they were unsure what the “right” amount of updates were. Student Christian stated, “There is only so much students can be aware of. The abundance of information is a little over the top sometimes.”

Discussion

The purpose of this study was twofold. Our first goal was to identify and examine the ways in which instructors used Twitter in the classroom. Our second goal was to identify the benefits and downfalls of using Twitter as a classroom tool from the perspective

of both instructors and students. Four general conclusions emerged from this study that point to various implications and research opportunities for those using Twitter in instructional contexts.

First, the data revealed that instructors' are indeed using Twitter in their classes as a pedagogical tool to help students engage in critical reflection and analysis of course concepts. This approach is in line with previous research contentions that position CMC as a useful method for engaging students in critique and information processing as part of the learning process (Baralt & Gurzynski-Weiss, 2011; Khine, Yeap, & Lok, 2003). That said, the findings from this study clearly suggest that for Twitter to be deemed useful its relevance to course content should be clear. In other words, students need to see the relevance and connection to course content while using Twitter; otherwise, it can be perceived as overwhelming and distracting. This finding makes sense when examined through the body of literature on content relevance.

Content relevance refers to the ways in which course content meets students' personal and professional interests and goals (Keller, 1983). Specific instructional strategies such as explaining how course content relates to students' futures, how concepts taught in class could be used in their daily lives, and how the course content relates to their existing knowledge promote perceptions of content relevance (Keller, 1983). In addition, researchers contend that relevance can result from effective teaching and increase students' motivation to learn and sense of empowerment towards their own learning. This is supported by Frymier, Shulman, and Houser's (1996) research that found that content relevance was related to students' affect for course content and to teachers' and students' senses of empowerment, which are relevant to the present study. Further, Millette and Gorham (2002) found that students perceived content relevance and interest in a subject area to be the most significant aspect affecting their motivation to learn.

Therefore, it stands to reason, that when students are engaged in the material (a result of effective teaching) they perceive the content as being relevant (Muddiman & Frynier, 2009). Taken together these notions suggest that connecting the use of Twitter to course content has the potential to increase students' perception of its relevance but also promotes perceptions of effective teaching and empowerment.

The second general conclusion suggests that Twitter can be used to promote satisfying relationships between and amongst students and instructors. In terms of student-instructor relationships, students viewed their instructors as more immediate when they used Twitter. In other words, some students felt a stronger connection to their instructors by interacting with them on Twitter. Interestingly, students also noted that Twitter allowed their instructors to get to know them (as students) better by following their Twitter feeds. This finding mirrors those from DiVerniero and Hosek's (2011) study, which highlighted the ways in which social media functioned to help humanize instructors in the minds of their students. In the current study, the reverse appears to happen through the use of Twitter because students see it as a way for instructors to get to know them on a more "human" level.

In addition, using Twitter can promote class participation and facework amongst class peers. Within the current study, instructors encouraged this interaction via Twitter with in-class posts, out of class interactions, and as a way to engage reticent students. In fact, instructors appeared to use Twitter as a way to help students maintain their positive face, or maintain social affirmation amongst their peers (Brown & Levinson, 1987). This was apparent when instructors and students commented on the fact that students could use Twitter to ask questions they may not have felt comfortable asking during class discussions. In all, these findings echo those of Kirkpatrick (2009) and Junco et al. (2011) that reported increases in participation through the use of Twitter.

A third general conclusion suggests that instructors and students alike regard the ability to effectively use social media as a marketable skill. Moreover, instructors commented on using Twitter as a means to provide students with an opportunity to hone the social media skills they will use in their careers. Ultimately, this leads to larger questions about the function and ability of individual instructors to shoulder this task when they themselves are most likely learning how to use this emerging social media technology. In recent years the notion of information literacy has been an important topic across college campuses and perhaps producing students who are technology or even social media literate will be a focus of academic institutions in years to come.

A final general conclusion indicates that students and teachers experience various tensions as they navigate the benefits and downfalls of using Twitter within their classes. One apparent tension arises for both student and teachers as they negotiate the need to give others (whom they may not have otherwise) access to their Twitter feeds and the need to maintain their privacy. Teachers and students recognize that their feeds may contain personal information that was not intended for class members to see. Ultimately, this results in students and instructors having to negotiate rules and boundaries surrounding their private information. This finding makes sense in light of Petronio's (2002) Communication Privacy Management (CPM) theory that posits that people work to control their private information by constructing boundaries related to their private information and to do so construct rules that determine who is granted access to one's information. In this way, students and instructors alike sought ways to manage the permeability of their privacy boundaries by not sharing information, ensuring appropriate disclosures related to class content or not following each other's Twitter feeds. A second tension expressed by students relates to perceived incompatibilities with their use of Twitter and their classroom engagement. More specifically, students want/need to participate in Twitter posts as part of class activities but find it distracting to their learning when they are posting instead of listening to their instructor. This tension was further complicated if students felt overwhelmed by requirements to check multiple technology platforms (e.g., email, Blackboard) in addition to Twitter for their courses.

Overall, our research adds to a growing body of literature that examines the ways in which instructors and students are using social media within the instructional content. As such we offer the following practical applications for instructors using Twitter as part of their classes and offer directions for future research.

Practical Applications and Future Research

The findings from the study help instructors and students understand the ways Twitter is being used and the perceived benefits and downfalls of it in the classroom. From this study, we offer several ways instructors can use Twitter in the classroom. First, instructors should engage in thoughtful planning and reflection towards the

learning objectives they hope to achieve through using Twitter as part of course curriculum. More specifically, instructors should (a) identify these objectives, (b) provide clear instructions for activities and assignments, (c) identify connections to course content before an activity or as part of debriefing activity, and (d) clarify how students will be graded, if at all, on Twitter posts. Second, the type of class format and size should be an important factor when considering using Twitter as a teaching tool. Though our sample was relatively small and additional research is needed, it appears that students resonated with using Twitter in large lecture-based classes. Finally, using Twitter as an out-of-class activity or dedicating specific time to use it in class may reduce the potential for in-class distractions. Attending to these areas may help mitigate the downfalls expressed by many of the instructors and students in this study.

Several areas for future research arise from this study. In the current study, students suggested that they perceived instructors who used Twitter to be more immediate, credibility, and approachable. As a result, one potential avenue for future research would be to examine the relationship between perceptions of instructor credibility, immediacy, and student-teacher communication satisfaction and the use of Twitter. Likewise, it stands to reason that using Twitter ineffectively (e.g., without clear goals) has the potential to damage perceptions of instructor credibility and negatively impact student learning. Finally, given that many students commented on their apprehension towards using Twitter it would be beneficial to explore the reasons for this apprehension and identify strategies instructors and students alike can use to manage this discomfort. This area of research appears especially important if students are expected to learn how to use social media tools as part of their careers.

Limitations

As with all research, our study has limitations. Although we included both instructors and students in our analysis, it would be beneficial to solicit responses from more instructors across a variety of disciplines. Perhaps this limitation suggests that the use of Twitter is not widespread amongst instructors and disciplines, but rather we believe a more target sampling approach may yield different results. In a similar vein, we collected data from individual teachers and

students who were not in the same classes and it would be of interest for future studies to examine paired samples of teachers and students from the same classes. This would allow for a richer understanding of how students and instructors perceive the uses and functions of Twitter as part of the same course curriculum. In addition, this would allow for exploration towards instructional outcomes assessment with regard to class participation, student learning, classroom climate, and instructional technology outcomes.

Conclusion

In general, students are more connected than previous generations and they expect to remain this way in all facets of their lives (Pensky, 2005). Therefore, it makes sense that the use of social media would extend to the classroom context. However, this extension should be carefully built in to the curriculum in a way that minimizes the downfalls and maximizes the benefits of using Twitter in the classroom.

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