

Big Tweets on Campus: College Newspapers' Use of Twitter

Kris Boyle

*School of Communications
Brigham Young University*

Carol Zuegner

*Department of Journalism, Media, and Computing
Creighton University*

The authors examined Twitter use among campus newspapers, analyzing a sample of Twitter pages from 25 award-winning campus publications and coding for the frequency, content, and interactivity of the tweets. This study revealed these newspapers were tweeting most often during daytime hours and most tweets were about campus-based news. Unlike mainstream newspapers, the publication frequency of these college newspapers and the number of users following their Twitter pages were tied to the newspapers' tweet frequency. The authors concluded that like their professional counterparts, college newspapers could find ways to more effectively use Twitter. Journalists now and in the future will have to engage their audience in what Robinson (2013) described as a process that involves social media and conversation. Whether in the classroom or on a college newspaper staff, students need to be aware of that conversation and be a part of it.

In a time when mainstream newspapers deal with declining circulation, university newspapers across the country appear to be weathering the storm. One study found that 60% of students have read their college newspapers, and 88% of those readers picked up at least one of the past five issues (Jackson, 2012). There is also evidence that the print version of these newspapers is more popular than the online counterpart (Krueger, 2010). Researchers point to several factors for this success, including accessibility (available at popular gathering spots) and cost (often free) (Jackson, 2012; Krueger, 2010).

That's not to say that campus newspapers can or should ignore the online shift that has been

occurring within the industry. As administrators tighten their budgets, some of these publications at schools like Bowdoin College in Maine, University of Nebraska-Omaha, University of Texas, and University of Connecticut have all faced the possibility of losing their print products. Others, facing these same threats, have made the move to an online-only platform (Jackson, 2012). In 2012, the University of Oregon's Daily Emerald began printing two days a week, rather than daily, while the University of Georgia's The Red & Black, and Arizona State's The State Press each moved to weekly publications. As many as 6 to 10 college dailies could make the same transition in the near future (Doctor, 2012). These

Keywords: social media, diffusion, newspapers, Twitter, adoption

Correspondence: Kris Boyle, Brigham Young University, kris_boyle@byu.edu

publications have identified several factors for making the move, including a decline in print ad revenue, loss of print readership, and catering to students whose lives are now natively digital (Doctor, 2012).

But there are also benefits to making the digital move. A newspaper's online site helps extend its reach to beyond those physically on campus. These sites are popular among parents, alumni, and potential students (Krueger, 2010). Campus newspapers can also team up with college journalism newswire services to promote their content. For instance, HuffPost College features content aggregated from college newspapers across the country, posting abbreviated stories on their site and directing visitors to the college papers' own sites for the full stories (Garber, 2010). The benefit to college journalists is their content gets greater exposure and, ideally, the campus newspaper website gets more traffic.

Journalism schools recognize that the industry's landscape is changing and are revising their curricula to meet these changes. College newspapers—both independent and part of college curriculum—are increasingly more digital. They recognize that the jobs their graduates are competing for are more hybrid, where rookie reporters are expected to use their social, video, and multi-media platform skills early on in their careers (Doctor, 2012).

One new media tool readily available to college journalists is Twitter, which has become one of the fastest growing social networking sites since it was introduced in 2006. In March 2012, 140 million users were sending 340 million tweets a day (Van Grove, 2012). In 2011, there were 23.5 million unique visitors to Twitter.com, a 16% increase from 2010, and up 70% from 2009 (Sawers, 2011; Facebook, 2010). The increase is second only to Facebook, which saw twice as many visitors in 2011 as it had in 2009 (Sawers, 2011; Facebook, 2010).

If college journalists need to have social media skills when entering the professional world, it is worth examining whether they are

using those skills while still in school. Thus, this study explores how college newspapers are adopting and using Twitter.

LITERATURE REVIEW

In the beginning, Twitter was viewed primarily as a tool used by participants to provide status updates (Lenhart & Fox, 2009). But as Twitter has grown in popularity, so has its usefulness. Twitter is now seen as more than just a means of enhancing one's social network. It has become a tool that can be used to collaborate and share ideas, teach a class, and disseminate news (Lenhart & Fox, 2009; Dunlap & Lowenthal, 2009). Twitter describes itself as a "real-time information network that connects you the latest stories, ideas, opinions, and news about what you find interesting" (2012). Twitter enhances its identity as a real-time network by providing users with a list of trending topics, top videos, and suggested people to follow, all of which are consistently updated. This study primarily focuses on Twitter's role as a news and information source.

The popularity of Twitter has not been limited to a specific age group. According to a recent study by the Pew Research Center, Twitter use among individuals in six different age groups increased from November 2010 to March 2011. The biggest increase in the percentage of Twitter users—9% to 19% in the six-month period—came among 25- to 34-year-olds. There was also a sizeable increase among 35- to 44-year-olds, with 14% actively using Twitter in March 2011 compared to 8% six months earlier (Smith, 2011).

Twitter as an Information Disseminator

In recent years, Twitter has played an important role in disseminating news and information. In 2008, individuals caught in the middle of a three-day gun battle Mumbai, India, used Twitter to provide first-person accounts, pictures, and rumors. This event—later deemed "Twitter's moment"—left news agencies scrambling to keep up (Caulfield & Karmali, 2008). Since

then, Twitter has been at the forefront of nearly every major breaking news story, from deadly earthquakes and plane crashes to the passing of celebrities and public figures, often serving as an “early warning system” for breaking news (Mataconis, 2011; Stetler & Preston, 2011). It has also proven to be an effective information disseminator for college newspapers, especially in times of crisis. In 2011, two people, including a police officer, were killed in a shooting on the campus of Virginia Tech. Unlike during the deadly 2007 shooting on the same campus that killed 32 people, *The Collegiate Times*, the university’s newspaper, was able to use Twitter to provide real-time updates, which was particularly valuable to students and staff members in lockdown during the ordeal (Preston & Stetler, 2011). Using Twitter to distribute information became even more critical once the newspaper’s website crashed and the staff was evacuated from the office. Within a few hours, the paper’s account grew from 2,000 followers to more than 20,000. This was an eye-opening illustration of how Twitter can amplify a single message—or account, even if that account is a college newspaper with a small, local following (Preston & Stetler, 2011).

While there are plenty of instances where Twitter has been used effectively to share breaking news, there are also plenty of instances where the social network site has been used to circulate false news reports. In January 2012, the managing editor of Onward State, an independent student news website at Penn State, prematurely—and falsely—reported on Twitter the death of former head football coach Joe Paterno. Several well-known news organizations, including CBS Sports, picked up the tweet and began circulating the false information through their own channels (Stetler, 2012). The mistake led to apologies by each of the organizations involved and cost a few reporters their jobs, including the managing editor who sent the tweet (Laird, 2012; Stetler, 2012). It also brought attention to a growing problem among the media, who

are often more worried about getting the story first rather than getting it right. Speaking of the Paterno debacle, Associated Press editor Lou Ferrara said, “The lesson for everyone should be that accuracy matters.” According to Ferrara, social media tools shouldn’t force news organizations to compromise their standards because “this is when (they) need them most” (Stetler, 2012).

However, whatever the risk, like their professional counterparts, college newspapers cannot ignore the benefits that come from incorporating Twitter into newsgathering and disseminating practices. According to one new media specialist, journalists recognize that they need to “adopt or be left behind,” especially if they want to stay competitive (White, 2008), meaning that the use of Twitter among journalists has become commonplace (Logar, 2009). It is used not only to report breaking news, but also as a source for story ideas (O’Connor, 2009). So it is obvious that college journalists need to be familiar with this social media tool and how to use it effectively if they expect to be successful.

Diffusion of Innovations

An innovation is defined as an idea, practice, or object that is perceived as new by an individual or another unit of adoption (Rogers, 1995). According to Rogers, diffusion is a “process by which an innovation is communicated through certain channels over time among the members of a social system” (p. 5). So for the purposes of this study, diffusion of innovations addresses the process by which Twitter (the innovation) is diffused among college newspapers and used as a tool to disseminate news and information.

Organizations trying to succeed and survive in volatile business environments have often viewed innovations as critical keys to their success (Tajeddini, Trueman, & Larsen, 2006; Salaman & Storey, 2002; Howell & Higgins, 1990; Rogers, 1995). According to Mehrrens, Cragg, and Mills (2001), there are three major factors that can influence a business’s adoption of the Internet: perceived benefits, organizational

readiness, and external pressures. Benefits listed by organizations often involved the relative advantages the Internet offers, particularly in contrast to traditional communication (i.e., e-mail versus telephone). The relative advantage of the Internet also included access to global sources of information and the advantages it offered in relation to advertising and marketing (Mehrtens et al., 2001).

Adoption in an organization can come at two levels: an organizational adoption and an individual adoption (Frambach & Schillewaert, 2002). Organization-wide adoption can be influenced by the factors like the organization's preparedness or external factors, while an individual's adoption of innovations can be influenced by an individual's attitude toward the innovation, his or her personal innovativeness, and the social influences in the organization (i.e., employer pressure to adopt the innovation, the opinions of fellow co-workers concerning the innovation, etc.). Additionally, facilitators at the organization can also help influence an individual's adoption of an innovation (Frambach & Schillerwaert, 2002).

Previous studies have also examined both the structural effects of diffusion of innovations in newsrooms, as well as the adoption processes in these settings. In a study of newsroom convergence, based on a diffusion of innovations framework, Singer (2004) found that despite cultural clashes and other compatibility issues, journalists saw the clear advantages to convergence. However, the diffusion of convergence was also hindered by cultural and technological differences in the approach to gathering news and disseminating it to the audience. It was also slowed by a lack of training that could help alleviate concerns about the perceived complexities of the new media formats (Singer, 2004). Thus, the structure of the newsroom does factor in to how well an innovation is adopted and implemented. The size of a news organization has also been a factor in the past, with larger news organizations being more willing to adopt and use technologies than

their smaller competitors (Niebauer, Abbott, Corbin, & Neibergall, 2000).

There are several factors that can influence the adoption and use of interactive elements in online newspaper (Li, 2006). Internal factors can include the size, the length of its Web presence, and the makeup of its staff. For instance, bigger newspapers can more easily afford the high initial fixed costs of creating interactive Web sites. Additionally, there is a positive relationship between interactivity and the length of its presence on the Web. Websites that have been operating longer are usually more interactive.

Industry professionals expect educators to produce journalism graduates with many of the traditional skills—clear writing, good grammar, and news judgment, among others. But they also seek journalists who can fit into this new newsroom environment. They want individuals who know how to use multimedia elements in their stories (Brown & Collins, 2010). In response, scholars argue that journalism schools need to adopt some new innovations of their own. They suggest that these academic institutions need to revise their curricula to meet the increased skill expectations placed upon new journalists and incorporate aspects of digital innovation, such as a demand for “audience agency or user-generated content,” into news production courses and laboratories (Robinson, 2013). They suggest that the news story is no longer a singular, finite product and that news production is now a collaborative process between journalists and their audience (Robinson, 2013). New media tools, including social media sites like Facebook and Twitter, are a large part of this new process and can help student journalists develop the skills they are going to need once they graduate.

One big advantage Twitter enjoys over other innovations is the ease of adoption. Participating in Twitter does not require extra equipment or complex training. Anyone interested in using a Twitter account just needs to create an online account, which can be accessed from any computer with Internet access or from a cell phone.

Factors such as a new organization's size, staff makeup, and available capital do not necessarily influence whether the news organization adopts Twitter as a news or information dissemination tool.

Twitter use by mainstream newspapers has been a topic of interest for researchers in recent years. In 2009, the Bivings Group conducted an analysis of Twitter use by the country's top 100 newspapers. The group examined 300 Twitter feeds, gathering a wide range of data that helped them determine how these newspapers were using their accounts. Specifically, the study found that 38% of newspapers did not provide links to their Twitter accounts on their Web sites. Newspapers were sending out an average of 11 tweets per day, with newspapers tweeting anywhere from once to 95 times a day (Rindfuss, 2009). Just over half—51%—of these newspapers primarily used a Twitter web interface (i.e., Tweetdeck, Hootsuite).

However the more interesting findings dealt with the newspapers' interactions with other users, including retweets and replies. While 37% of newspaper Twitter feeds replied to users in more than 10% of their tweets, 33% of the Twitter feeds replied to users in less than 1% of their tweets. Approximately 15% of these accounts did not reply to one tweet. Just 16% of newspaper Twitter feeds retweeted other users in more than 10% of their tweets, while nearly half—43%—of the accounts retweeted other users in less than 1% of their tweets. There were 23% of accounts that did not retweet other users once. The group concluded that newspapers are rarely reacting, or even reading, the comments and updates of users they follow (Rindfuss, 2009).

As researchers continue to study Twitter use among mainstream newspapers, it would be worthwhile to examine similar trends among college newspapers and compare the two. This study attempts to answer the following research questions.

- RQ1.** How frequently are college newspapers tweeting?
- RQ2.** What are college newspapers tweeting about?
- RQ3.** When are college newspapers most often tweeting?
- RQ4.** To what extent are college newspapers engaging their Twitter followers with their content?

The authors suspect that college newspapers that publish more frequently (daily versus weekly) will be tweeting more often because they will have more content to tweet about and larger staffs, so we propose the following hypothesis:

- H1.** College newspapers that circulate print publications more often will be tweeting content more often than college newspapers that don't circulate print publications as often.

There is also evidence that the number of followers a user has on Twitter has often influenced the number of tweets the user will issue. The more followers a user has, the more they tweet (Huberman, Romero, & Wu, 2008). Thus, we propose:

- H2.** College newspapers with more followers tweet more often than those with fewer followers.

METHODOLOGY

The authors coded Twitter pages of college newspapers that were recipients of the highly prestigious Pacemaker Award in the past 10 years, from 2003 to 2010 (Associated, 2013). Sponsored by the Associated Collegiate Press since 1927, the Pacemaker recognizes daily and non-daily newspapers, both large and small, that exhibit high quality writing, reporting, in-depth reporting, design, photography, art, and graphics. A total of 115 newspapers had won the award since 2003. The authors coded the

primary Twitter pages from 25 of these newspapers, which were selected through a random sample. The authors analyzed tweets posted on each of the Twitter accounts from Friday, March 1 through Thursday, March 7, 2013.

Factors coded in this study included the number of followers, the number of Twitter accounts the newspaper account follows, and the number of tweets posted by the newspaper during the week. The authors counted the number of tweets in several news categories, including campus news, off-campus news, campus sports, off-campus sports, campus entertainment, off-campus entertainment, columns/commentary, and blogs. Additionally, the authors counted the number of tweets that were linked to stand-alone multi-media content (i.e., photo slideshows, videos, etc.) that were advertisements and that were promotional.

Breaking news, general news, and general features were coded as news, while those dealing primarily with sports were coded as sports. Tweets about celebrities, media-related events or issues (i.e., movies, television, books, etc.) were coded as entertainment. Each of these categories was divided into two—campus and off campus. So tweets that dealt with news events and issues on campus—such as a speaker who visits campus—were coded as campus news tweets. However, if the tweet dealt with a news item off campus—like a city council election—it was coded as an off-campus tweet. The same approach was taken with both entertainment and sports. On-campus sports tweets were those dealing with the university-sponsored teams and events. Off-campus sports tweets focused on sports-related news events involving athletes and other individuals not affiliated with the school.

Editorial/commentary tweets included those promoting an opinion piece/editorial or a reporter's column. Blog tweets were those that specifically included the word "blog" within the text. Advertisement tweets were those that promoted a commercial product or business. Lastly, any tweet that referred the reader back to the newspaper

or its website was coded as promotional. For instance, inviting a follower to participate in an online chat with student reporters or editors or to sign up on the newspaper's website to win a gift card to a local restaurant would both be considered promotional.

The authors also counted the number of tweets that had links back to the newspaper's website, those that included links to outside websites, and those that did not have any type of link. The authors counted the number of tweets that solicited participation from readers ("Tweet us your best spring break spot" or "Who do you think is going to win tonight's volleyball game?"), the number of tweets that included hashtags, and the number of tweets that were actually retweets. Finally, the authors also noted the time each tweet was posted, grouping them into one of three categories: midnight to 8 a.m., 8:01 a.m. to 4 p.m., and 4:01 p.m. to 11:59 p.m.

Both authors were involved in the coding process, so a pre-test was conducted on one magazine's Twitter account (10%) randomly selected from the sample to ensure coder reliability. The authors measured the consistency between themselves using the Holsti formula, which is used to gain a correlation coefficient that ranges from .00 (no agreement between coders) to 1.00 (full agreement between coders). The test produced a coefficient of .75, which is more than .70—the minimum requirement for reliability (Holsti, 1969).

Data Analysis

Frequencies were primarily used to identify trends in terms of what college newspapers were tweeting about most often and how often they were tweeting. Regression analyses were used to test the hypotheses.

RESULTS

All but two of the 25 newspapers analyzed for this study tweeted during the specified week. The newspapers had an average of 4,416 followers.

Within the week that we examined, there was an average of 25 tweets on the newspaper's feed.

In answer to the second research question, the most popular category tweeted about by the newspapers was on-campus news ($M = 18.40$), followed by on-campus sports ($M = 4.96$). The least popular category to tweet was blogs, with none of the newspapers sending out tweets promoting a blog. See Table 1 for a complete list of means. It is worth noting that there were differences in the number of tweets posted within each category, based on the newspaper's publication. For instance, daily newspapers on average tweeted more on- and off-campus, news, sports, and entertainment than the newspapers that did not publish daily. The daily newspapers also tweeted more commentary and advertising content. Promotional tweets were given nearly equal attention by both the daily newspaper ($M = 1.77$) and the non-daily newspapers ($M = 1.80$).

Newspapers posted an average of 20 tweets that included a link back to the newspaper's website. With the exception of the two newspapers that failed to post a tweet during the designated week, there was only one newspaper that didn't post at least one tweet that links back to the Web site. Just one-third of the newspapers analyzed—eight—had tweets with links to an outside website. The newspapers posted an average of one tweet with an outside link. Nearly three-fourths of the newspapers—17—had tweets without links and there were an average of four tweets without links.

The third research question dealt with the timing of the tweets. The daytime hours of 8:01 a.m. to 4 p.m. were when the most tweets were posted, with every newspaper publishing at least one tweet during this time, with the exception of the two newspapers that did not tweet at all. Each newspaper posted an average of 17 tweets during this time. The least popular time to tweet, not surprisingly, was in the early morning hours, from midnight to 8 a.m. Just under 25%—seven newspapers—tweeted

during this time period on average, and did so just one time. Finally, the authors were curious how engaged the newspapers were with their Twitter followers. Just seven of the newspapers included tweets that solicited feedback from users. Approximately half—12—posted retweets, and there was an average of two retweets on the feeds of those that did. Over the course of the week, followers retweeted an average of 48 times the newspapers' tweets tweeted.

Table 1
Breakdown of mean scores for Twitter variables

Variable	<i>M</i>
Followers	4416.50
Tweets	70.90
On-Campus News	18.40
Off-Campus News	2.28
On-Campus Entertainment	0.80
Off-Campus Entertainment	0.36
On-Campus Sports	4.96
Off-Campus Sports	0.04
Promos	1.76
Business	0.00
Entertainment	10.04
Travel	0.50
Blogs	0.50
Opinion	0.50
Multimedia	1.76
Advertising	0.16
Commentary	2.72
Blogs	0.00
Tweets w/ links	19.64
Tweets w/ outside links	1.16
Tweets w/o links	3.92
Feedback tweets	0.75
Retweets	1.67
Hashtags	18.20
Tweets (12 - 8 a.m.)	6.60
Tweets (8:01 a.m. - 4 p.m.)	35.50
Tweets (4:01 - 11:59 p.m.)	18.80

This study used several regression analyses using publication frequency and number of followers as independent variables and number of tweets within the designated week and number of tweets within the different news types as

dependent variables. This study hypothesized that newspapers circulating print publications more often will be tweeting content more often than newspapers that don't circulate print publications as often. Publication frequency was a significant predictor of the number of overall tweets ($\beta = .674, p < .05$) and therefore the model was statistically significant ($R^2 = .454; R^2_{Adj} = .43, F(1,24) = 19.14, p < .05$). Thus, the analysis supported the Hypothesis 1, which posited that newspapers publishing more often were tweeting more often.

Additionally, the number of followers significantly predicted the number of overall tweets ($\beta = .888, p < .05$), and the model was statistically significant ($R^2 = .788; R^2_{Adj} = .779, F(1,24) = 85.47, p < .05$). So the analysis supported the second hypothesis, which suggested that newspapers with more followers would tweet more often.

DISCUSSION

This study looked at college newspapers' use of Twitter to examine how the newspapers are using Twitter. The first research question asked how often these newspapers were tweeting. Not surprisingly, daily newspapers tweeted more often and newspapers with more followers on Twitter tweeted more often. More content and more followers give student newspaper staffs more reasons to tweet. Interestingly, this is different from mainstream newspapers. Those that published more often or had more followers did not always post more tweets (Boyle & Zuegner, 2012). Specifically, there was not a significant relationship between the publication frequency or number of followers and the number of tweets.

In other words, when the staffs are larger, there are more individuals available to maintain and promote Twitter and Facebook accounts.

However, it was perhaps a little surprising that the college newspapers are not tweeting more, but the study did just look at the main Twitter account of the news source. Many newspapers have separate accounts for different sections.

The student newspapers staffs, as with all news organization staffs, are likely still figuring out a social media strategy. There were some examples of live-tweeting events in papers' Twitter feeds, though the authors did not specifically code for that use. The lack of hashtags on many of the tweets was surprising, though perhaps figuring out a specific hashtag that would work for varying content was not feasible.

Journalists now and in the future will have to engage their audiences in what Robinson (2013) described as a process that involves social media and conversation. Whether in the classroom or on a college newspaper staff, students need to be aware of that conversation and be a part of it.

This study was an exploratory one, looking at college newspapers to get an idea of how social media adoption is faring there. A future study might examine the attitudes of student newspapers staffs toward Twitter and social media to explore whether social media is seen as part of the news-gathering process or as an add-on.

REFERENCE LIST

1. Associated Collegiate Press Contest Page. (2013). Associated Collegiate Press. Retrieved from <http://www.studentpress.org/acp/contests.html>
2. Boyle, K., & Zuegner, C. (2012). News staffs use Twitter to interact with readers. *Newspaper Research Journal*, 33(4), 6-19.
3. Brown, T., & Collins, S. (2010). What "they" want from "us." *Electronic News*, 4(2), 68-82. Retrieved on from <http://enx.sagepub.com/content/4/2/68.short>
4. Caulfield, B., & Karmali, N. (2008, November 28). Mumbai: Twitter's moment. *Forbes*. Retrieved from http://www.forbes.com/2008/11/28/mumbai-twitter-sms-tech-internet-cx_bc_kn_1128mumbai.html
5. Doctor, K. (2012). The newsonomics of college news innovation. *NiemanLab*. Retrieved from <http://www.niemanlab.org/2012/12/the-newsonomics-of-college-news-innovation/>

6. Dunlap, J. C., & Lowenthal, P.R. (2009). Tweeting the night away: Using Twitter to enhance social presence. *Journal of Information Systems Education*, 20(2), 129-135.
7. Facebook and Twitter post large year over year gains in unique users. (2010, May 4). Nielsen Newswire. Retrieved from <http://www.nielsen.com/us/en/insights/news/2010/facebook-and-twitter-post-large-year-over-year-gains-in-unique-users.html>
8. Frambach, R.T., & Schillewaert, N. (2002). Organizational innovation adoption: A multi-level framework of determinants and opportunities for future research. *Journal of Business Research*, 55(2), 163-76.
9. Garber, M. (2010, February 22). At HuffPost, the old college try. *Columbia Journalism Review*. Retrieved from http://www.cjr.org/the_news_frontier/at_huffpost_the_old_college_tr.php?page=all
10. Holsti, O. R. (1969). *Content analysis for the social sciences and humanities*. Reading, MA: Addison-Wesley Publishing Co.
11. Howell, J.M., & Higgins, C.A. (1990). Champions of technological innovation. *Administrative Science Quarterly*, 35, 317-341.
12. Huberman, B.A., Romero, D.M., & Wu, F. (2009). Social networks that matter: Twitter under the microscope. *First Monday*, 14(1). Retrieved from <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2317/2063>
13. Jackson, D. (2012, March 8). In wired generation, students like paper for campus news. *The Washington Post*. Retrieved from <http://www.washingtontimes.com/news/2012/mar/8/in-wired-generation-students-like-paper-for-campus/?page=all>
14. Krueger, B. (2010, September 14). Students prefer printed college newspapers over online. Poynter. Retrieved from <http://www.poynter.org/latest-news/making-sense-of-news/105600/students-prefer-printed-college-newspapers-over-online/>
15. Laird, S. (2012, January 27). Sports blogger ousted over false Paterno tweet. Mashable.com. Retrieved from <http://mashable.com/2012/01/27/cbs-fires-paterno-tweeter>
16. Lenhart, A., & Fox, S. (2009, February 12). Twitter and status updating. Pew Internet & American Life Project. Retrieved from <http://www.pewinternet.org/Reports/2009/Twitter-and-status-updating.aspx>
17. Li, X. (2006). Web page design and news retrieval efficiency: A content analysis of five U.S. Internet newspapers. In X. Li (Ed.), *Internet newspapers: The making of a mainstream media* (pp. 65-80). Mahwah, NJ: Lawrence Erlbaum Associates.
18. Logar, S. (2009). An exploration of Twitter's popularity and usefulness: Effects on the business world and beyond. Unpublished manuscript. Retrieved from <http://www.scripps.ohiou.edu/media/podcasts/j416/papers/logar.pdf>
19. Mataconis, D. (2011, May 6). Twitter as a breaking news source. Outside the Beltway. Retrieved from www.outsidethebeltway.com/twitter-as-breaking-news-source
20. Mehrtens, J., Cragg, P.B., & Mills, A.M. (2001). A model of Internet adoption by SMEs. *Information & Management*, 39(3), 165-176.
21. Niebauer, W.E., Abbott, E., Corbin, L., & Neibergall, J. (2000). Computer adoption levels of Iowa dailies and weeklies. *Newspaper Research Journal*, 21, 84-94.
22. O'Connor, R. (2009). Facebook and Twitter are reshaping journalism as we know it. *AlterNet*. Retrieved from <http://www.alternet.org/media/121211>
23. Preston, J., & Stelter, B. (2011, December 8). Using Twitter, Virginia Tech's college newspaper kept on publishing. *The New York Times*. Retrieved from <http://mediadecoder.blogs.nytimes.com/2011/12/08/using-twitter-virginia-techs-college-newspaper-kept-on-publishing/>
24. Rindfuss, A. (2009, December 17). The use of Twitter by America's newspapers.

- The Bivings Report*. Retrieved from <http://www.bivingsreport.com/2009/the-use-of-twitter-by-americas-newspapers/>
25. Robinson, S. (2013). Teaching "journalism as a process": A proposed paradigm for J-School curricula in a digital age. *Teaching Journalism and Mass Communication*, 3(1), 1-12.
 26. Rogers, E. (1995). *Diffusion of innovations* (4th ed.). New York: Free Press.
 27. Salaman, G., & Storey, J. (2002). Managers' theories about the process of innovation. *Journal of Management Studies*, 39(2), 147-165.
 28. Sawers, P. (2011). Nielsen's top 2011 digital brands show few surprises, but there's room for change in 2012. *TNW News*. Retrieved from <http://thenextweb.com/us/2011/12/28/niensens-top-2011-digital-brands-show-few-surprises-but-theres-room-for-change-in-2012/>
 29. Singer, J.B. (2004). Strange bedfellows? The diffusion of convergence in four news organizations. *Journalism Studies*, 5(1), 3-18.
 30. Smith, A. (2011, June). Twitter update 2011. Pew Internet & American Life Project. Retrieved from <http://www.pewinternet.org/Reports/2011/Twitter-Update-2011/Main-Report.aspx>
 31. Stelter, B. (2012, January 22). Mistaken early report on Paterno roiled Web. *The New York Times*. Retrieved from <http://www.nytimes.com/2012/01/23/business/media/premature-reports-of-joe-paternos-death-roiled-web.html>
 32. Stelter, B., & Preston, J. (2011, May 2). Turning to social networks for news. *The New York Times*. Retrieved from <http://www.nytimes.com/2011/05/03/business/media/03media.html>
 33. Tajeddini, K., Trueman, M., & Larsen, G. (2006). Examining the effect of market orientation on innovativeness. *Journal of Market Management*, 22, 529-551.
 34. Twitter. (2012). About. Retrieved from <https://twitter.com/about>
 35. Van Grove, J. (2012, March 21). Twitter turns six: From nothing to 140M active users, 340M tweets a day. *Washington Post*. Retrieved from http://www.washingtonpost.com/business/technology/twitter-turns-six-from-nothing-to-140m-active-users-340m-tweets-a-day/2012/03/21/gIQA-V4fMSS_story.html
 36. White, L. (2008, August/September). All the news that's fit to tweet. *American Journalism Review*. Retrieved from <http://www.ajr.org/article.asp?id=4601>