



Tweeting Adam Smith: Using Twitter to Engage Students in the History of Economic Thought

This paper presents a novel way to use Twitter to engage students in advanced economics courses. While prior research provides some uses of Twitter in introductory economics courses, little research exists on the use of Twitter in upper level economics courses. This paper provides one of the first pedagogical examples of Twitter use to engage students in an upper level economics elective.

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1. Introduction

It is often difficult for instructors to engage students with required course readings. One way to overcome this challenge is to actively engage students in the learning process. Economics faculty have worked to find ways to engage students by using social media in a variety of contexts. Al-Bahrani, Holder, Moryl, Murphy, and Patel (2016) detail the use of selfies in economics assignments, while Al-Bahrani and Patel (2015) outline ways to incorporate Twitter, Instagram, and Facebook in economics courses. Prior research on social media use in economics focuses on principles courses. This paper outlines a novel assignment where Twitter is used to engage economics students in an upper-level economics elective.

Twitter is a social media platform where users have 280 characters to “tweet” a short message. It is popular among young people and a variety of public figures. Tweets are typically accompanied by one or more hashtags, starting with the “#” symbol. The hashtag, which contains no spaces or symbols, typically represents a pithy summary of the tweet or connects a tweet to the larger conversation. For example, “#tbt” is a popular hashtag for “throwback Thursday,” used to indicate that a picture is from the past.

This paper outlines an assignment whereby students, after reading the works of historical economic thinkers, tweet the authors’ main ideas and develop creative hashtags associated with the authors’ central thesis. Al-Bahrani, Patel, and Sheridan (2017a) survey economics faculty members’ perceptions of Twitter. They find that economics instructors predominantly use Twitter to share information with students, rather than actively engaging students to interact directly with Twitter. This paper contributes to the instruction of economics by outlining an assignment that enables students to relate to and engage with economic thinkers and provides an example of how to use Twitter for active learning in upper-level courses.

2. Twitter Use in Academia

Given the ubiquitous use of social media in company marketing and advertising strategies, it is unsurprising that Twitter has been used most frequently in marketing courses. At the undergraduate level, Barn (2016) provides qualitative evidence from a marketing assignment, where students were required to tweet once each day for 31 days and comment on the “branded world around them.” At the end of the assignment, students wrote reflective essays. A qualitative analysis of the reflective essays suggests that students struggled initially with learning how to use Twitter, but worked with each other to overcome their obstacles. In addition, students generally found the Twitter assignment useful in helping them pay more attention to the marketing around them (Barn 2016). Rinaldo, Tapp, and Laverie (2011) provide an additional example of using Twitter in a marketing class. In their study, Twitter use consisted primarily of the instructor tweeting information to students. A focus group, comprised of a subset of students from the course, reported positive experiences of using Twitter and that they felt more involved in the class when Twitter was used. At the graduate level, Lowe and Laffey (2011) conducted both qualitative focus groups and a quantitative survey to evaluate the effectiveness of using Twitter in a graduate level marketing course. The authors report that students found Twitter to be a useful addition to the course, and that it was not overly burdensome to learn.

Twitter has also been used in a variety of other fields. Three students in a graduate-level instructional technology course provide narratives of their experiences completing a Twitter-based assignment (Nygard, Day, Fricke, & Knowlton 2014). The overall reactions speak to the learning curve of using Twitter, and of the need to edit to keep the character count within

the limit. Tang and Hew (2017) provide a meta analysis of 51 peer-reviewed research articles published between 2006 and 2015 on using Twitter in higher education. Most of the research reported in their meta analysis is qualitative, and most of this reports positive feedback from the students who used Twitter for an assignment. Indicative of the lack of research on using Twitter in economics courses is that the Tang and Hew (2017) meta analysis reveals only one paper discussing the use of Twitter in economics courses.

Instructors integrate Twitter in a variety of ways in their courses. These can be divided into three main categories: students posing questions during classroom lecture, instructors sharing supplemental information outside of class, and students creating content outside of class.

Twitter is primarily utilized in large introductory courses as a means to facilitate questions during a lecture. Novak and Cowling (2011) provide an example whereby students tweet questions using a class hashtag while the instructor gives a formal lecture. The Twitter hashtag feed is projected simultaneously with the lecture. Either during the lecture or at the end of the lecture, the instructor can clarify student questions posted on Twitter. Bodnar et al. (2013) provide a similar example whereby one instructor lectures while a co-instructor responds directly to students' tweets to clarify course material during the lecture. A critique of this use of Twitter might be the potential negative side effects of spending time writing tweets during lectures rather than focusing on the speaker and taking notes; however, this critique is addressed by Kuznekoff, Munz, and Titsworth (2015) who determine that texting and tweeting relevant information in class does not negatively impact recall on multiple choice tests. Thus, Twitter may facilitate students' questions during large lectures without harming their ability to learn. In economics, Middleditch and Moindrot (2015) provide a case study of their experiences incorporating Twitter in large-lecture introductory economics courses, confirming that Twitter improves student engagement, particularly for students with a Twitter account.

A second common use of Twitter occurs when the instructor shares supplemental information outside of class time. In this case, the instructor tweets relevant articles and comments to the class. Twitter is public and free; therefore, even students without a personal Twitter account are able to follow the instructor's posts. Instructors may also tweet reminders about assignment due dates and upcoming exams. An example of this is outlined by Al-Bahrani, Patel, and Sheridan (2017b), who provide one of the only quantitative evaluations of Twitter use on student learning outcomes or of Twitter use in economics. In their experiment, one class per instructor received supplemental course content through a traditional learning management system (i.e. Blackboard), while the other class received the same content via Twitter. The typical content consisted of articles of real-world examples of the topics covered in class. The experiment took place at three different institutions, with one faculty member teaching both the control group and experimental group at each institution. Using the Test of Understanding in College Economics (TUCE), the authors show that there is no difference in the learning outcomes of students who received supplemental information from Twitter compared to those who received the same information from the learning management system. In an evaluation of student engagement, Wood (2017) finds that nearly 80 percent of students find that the professor's use of Twitter to provide real world examples was a "worthwhile addition" to the principles of economics course. Stephansen and Couldry (2014) apply the knowledge-sharing function of Twitter beyond the classroom. In their study, a departmental Twitter account facilitated the building of a community of practice between students and faculty.

A third use of Twitter revolves around students tweeting relevant course content outside of class. This use of Twitter is the focus of this paper. Parcha (2014) outlines an assignment requiring students to tweet about a particular topic and then comment on their classmates' tweets as well. Kassens-Noor (2011) argues that Twitter encourages students to share information

outside of class and therefore promotes informal learning. Her findings show that students choosing to use Twitter in an assignment spent more time on each individual entry than did students writing more traditional diary entries, and Twitter students did much better on a pop quiz measuring knowledge retention than the students who wrote traditional diary entries. Halpin (2016) introduced a Twitter assignment in a science class for non-science majors. The assignment required students to write several tweets, including a link to an article on a particular topic with a question for the class about the article, a reply to a classmates' question, and an answer to the instructor's questions about a particular article. She found that students who participated in the Twitter assignment became more likely to use reputable scientific sources for articles, and less likely to default to a Google search. This provides further evidence of the potential benefit of using Twitter assignments outside of class.

Kassens (2014) provides an example of how to incorporate Twitter in a small principles of macroeconomics course. Through a series of ten assignments, students were required to tweet questions or comments on a variety of assignments, from topics related to economics (e.g., on opportunity cost or the relationship between GDP and happiness) and from larger events (e.g., the President's State of the Union address). An added benefit of the State of the Union assignment was that the class was joined in tweeting by a class at another institution, which expanded the informal learning of the students. Kassens (2014) provides her rubric for grading along with example tweets written by students from the course. Over three-fourths of her students reported that using Twitter helped to clarify the course material.

Several additional uses of Twitter in class are identified by Tang and Hew (2017). Though these are much more limited in the scope of their application, they provide additional ideas for instructors. One use of Twitter is to have students record information, as in the branding project described by Barn (2016). Twitter may also be used by students collaborating in group projects, by students reflecting on an assignment or their progress in class, by faculty to assess student work, or by peer evaluators to assess student work. For a detailed overview of the different uses of Twitter in the classroom, see Tang and Hew (2017).

Beyond Twitter, a variety of social media platforms have been used to engage students in economics courses. Podcasts provide real-world examples of economic topics (Moryl 2014; Moryl 2013), especially improving learning for students with auditory and verbal learning styles (Moryl & Jian 2013). An alternative podcasting project leads students to create their own podcasts explaining real-life examples of economic concepts (Moryl 2016). An Econ Selfie assignment has students creating selfies (a picture that includes the photographer in the picture) that showcase economic topics and can be shared via social media (Al-Bahrani et al. 2016). Al-Bahrani and Patel (2015) provide an overview of how a variety of social media platforms can be incorporated into economics education.

3. Expected Benefits of Using Twitter

There are several potential benefits to using Twitter in higher education. Twitter is expected to increase student engagement through two channels. First, due to the active learning component of composing tweets, students are expected to remember more information. As Salemi (2002) argues, active learning leads students to understand concepts more deeply. Second, by using the technologies that students are familiar with, students are expected to relate more to the course. Evans (2014) surveyed students and determined that using Twitter increases student engagement in a first-year management course. Twitter increases engagement more for students who report that they enjoy using Twitter than for those who do not enjoy using Twitter (Welch & Bonnan-White 2012). This suggests that Twitter does not engage all students

equally. Thus, it is likely that Twitter is a complement rather than a substitute for other active learning strategies. Since student engagement is linked to higher levels of critical thinking and to higher grades (Carini, Kuh, & Klein 2006), if Twitter improves student engagement then it is likely to have additional educational benefits.

Closely related to student engagement is student learning. Junco, Heiberger, and Loken (2011) determine that Twitter use increased both student engagement and semester grades. The higher grades suggest that the increased engagement of Twitter also deepens learning and retention of information. Students report that using Twitter helped to clarify course material (Kassens 2014). Student tweets that are used to start or increase class discussion are also likely to increase student learning, because student interactions in class are associated with increased learning (Myers & Bryant 2002).

In addition, the nature of using Twitter to synthesize and summarize a key point is thought to increase critical thinking skills, particularly with the requirement of using hashtags to comment on the relevant materials. For example, Halpin (2016) finds that using Twitter induced students to begin using reputable science sources, including science periodicals such as *Scientific American* or government websites such as CDC.gov.

Lastly, informal learning has been established to be important in overall learning (Gerber, Cavallo, & Edmund 2001). The informal learning environment that occurs while using Twitter may also contribute to higher level of learning of the course material.

Not all of the research on Twitter use is positive. Several authors note the privacy concerns of using Twitter. Since Twitter is a public site, students' work is publicly available. In order to reduce this exposure of students, researchers have suggested that students create a Twitter account for school that is separate from their personal accounts (Lin, Hoffman, & Borengasser 2013). It is also possible that students will see use of social media as an infringement on their personal space and time (see, for example, Haytko & Parker 2012). In the unlikely event that a student is averse to using Twitter, it would be relatively simple to have the student write a tweet and submit it privately to the professor, without using Twitter as the interface.

In addition to the aforementioned issues, Tang and Hew (2017) point out that Twitter may lead to increased workload for both the instructor and the students, particularly with the time-intensive nature of responding to individual tweets in a large lecture class. This may be (in part) mitigated by a reduction of repetitive emails, as students can reference prior tweets and may therefore reduce the time an instructor spends reading and returning emails. Another concern of using Twitter is the limitation of 140 characters (Tang & Hew 2017). As Twitter has extended that limit to 280 characters, this concern has been at least somewhat mitigated. In addition, an instructor can demonstrate how to write several tweets into one idea (and include 1/3, 2/3, and 3/3, for example, at the end of a series of tweets to indicate the progression of the idea).

4. Incorporating Twitter into an Upper-Level Economics Course

The goal of this paper is to introduce a way to integrate Twitter into an upper-level economics elective. This assignment was piloted in the history of economic thought course, a 400-level economics course required for all economics majors and an elective option for economics minors. The class was a small seminar, with 12 students in the section, taught at a small, liberal arts college in the mid-Atlantic. The history of economic thought course is both reading and writing intensive; students read the original works of economic thinkers from Adam Smith to

John Maynard Keynes and write substantial term papers (20-30 pages) over the course of the semester. The class consisted of ten economics majors and two economics minors. Ten of the students in the class were seniors and two were juniors. All of the students had taken at least one course with someone else in the class before the semester started, and several students had been in several courses together. In addition, all but one of the students had been enrolled in a prior course taught by the instructor. Nine students were male and three were female. The structure of the class was a seminar, with the instructor facilitating a class discussion of the major authors, including all of the authors students were assigned to tweet about.

For those who are unfamiliar, Twitter is a micro-blogging application that can be accessed from an app on a cell-phone or tablet, or from the Twitter website. In order to tweet, users must create a Twitter handle and add their name. The Twitter handle, or username, is preceded by the "@" symbol and is a short, 15-character unique identifier of the author. It may use any letter of the alphabet and any numbers 0 to 9, but the only symbol allowed is the underscore. The Twitter name can be anything, including, an individual's real name, a company name, or something clever and funny related to the class. It is limited to 50 characters. For more information on using Twitter, see Al-Bahrani and Patel (2015), who provide background on the technical side of using Twitter, definitions for key Twitter terms, and a few brief examples of Twitter use in class.

The Twitter assignment focused on the writings of six of the major economists read over the course of the semester: Adam Smith, David Ricardo, Thomas Malthus, Karl Marx, Thorstein Veblen, and John Maynard Keynes. Students were randomly assigned to tweet about one of each pair of authors: Smith or Marx, Ricardo or Malthus, and Veblen or Keynes. For example, half of the class was assigned to tweet about Smith and the other half was assigned to tweet about Marx. At the beginning of the semester, students were randomly assigned three of the six authors.

In addition to completing the readings for each class, the students were required to tweet a summary of the author's main thesis and write a short summary paragraph that summarized the tweet and explained how the tweet related back to the reading. Students were encouraged to tweet either in the words of the author with a direct quote, or with the ideas of the author in the student's own words. Before the assignment began, the students voted on a class hashtag, which all were required to include in their tweets. This allowed the instructor to easily follow the class-related tweets. The class hashtag chosen was a short six characters (including the # symbol). The full assignment text is available in Appendix A. The assignment was intentionally kept brief, in order to encourage students to be creative in their tweeting. The syllabus provided an outline of the readings, and every two weeks, the instructor posted detailed reading assignments for each day to the course learning management system (Blackboard). Part of that schedule also included reminders for which author should be tweeted on a particular day. Readings were excerpts from the original texts of the authors. For example, the Smith readings included ten chapters from Book I of *A Wealth of Nations*, and one chapter from each Books II, IV, and V. The readings from Malthus included ten chapters from *An Essay on Population*. Class discussions for the major authors (Smith and Marx) occurred over several class sessions. The shorter readings generally occurred over two class sessions.

Tweets were discussed in class along with the readings. Each day of class where there was a discussion of a tweeted author, class discussion either began or ended with a reading of the tweets and hashtags and a discussion of how the tweet and hashtag related to the reading. A typical class including the discussion of a tweeted author might go as follows.

In the first five minutes of class, the instructor took attendance, made any announcements or reminders, and asked the students their overall thoughts on the readings. In the next 10 to 15 minutes of class, the students took turns reading through the tweets of the day. With the

reading of each tweet, a short discussion followed, covering the meaning of the tweet and hashtags, and how the tweet and hashtags were relevant to the reading. The remaining 45 to 50 minutes of class consisted of a series of discussion questions (some of which were given to the students in advance), and a conversation about the main ideas in the day's readings.

Students were encouraged to create a separate Twitter account for the class. Many students chose Twitter handles and names which parodied the economic thinkers, providing a great deal of humor for the class. The students' tweets and hashtags throughout the semester exemplified the thought and creativity that went into the Twitter assignment. The class hashtag has been omitted from the below. For example, one student wrote about *Das Kapital*, "If you're flat broke, at least labour will serve as an asset #DasKapital." Another wrote about *The Wealth of Nations*, "The far greater part of them he must derive from the labour of other people. #teamworkmakesthedreamwork." A final example came from *The General Theory*: "if the classical theory is only applicable to the case of full employment, it is fallacious to apply it to the problems of involuntary unemployment #LayOffsArentOptional." Each of the tweets and hashtags summarize the main theses of the authors and exemplifies the additional thought and creativity which students put into creating the tweet and hashtag.

Occasionally the hashtags were not as strong, though the quotes still covered central themes of the readings. For example, one student tweeted about Smith " 'not from the benevolence of the butcher...that we expect our dinner, but from their regard to their own interest' #gimmethisforthat." Another example comes from the ideas of Malthus: "Money can't buy happiness... or food for the working class if the national \$\$ isn't invest[ed] in agriculture. #MalthusMantra."

The main goal of this assignment was to engage students with economic thought. In addition, because it was a new type of assignment, the instructor chose a simple and straightforward grading system. Tweets and summaries were graded on a simple four-point scale. One point was awarded for completing the tweet and summary. One point was awarded for a high-quality hashtag(s). A high-quality hashtag was one that was relevant, informative, and logical. Humor and satire in the hashtags was also encouraged, but not required. One point was awarded for a high-quality analysis. Lastly, one point was awarded for the quality of the writing in the summary. The total assignment counted for five percent of the course grade. The full text of the assignment and grading rubric are available in Appendix A.

5. Lessons Learned and Recommendations

One of the largest critiques from students was that we kept the Twitter accounts anonymous. Thus, the class discussion of the tweets occasionally faltered as it was not clear what a particular student intended in a tweet, and it was not possible for the instructor to ask directly.

An additional consideration arose early in the semester. Students initially did not include any indicator of who they were tweeting about. While context clues generally showed which author a student tweeted about, this was not universally the case. Thus, future assignments will require students to include a hashtag or a note regarding the author that they are tweeting about. The assignment included in Appendix A has been updated to reflect this addition. This will allow others to quickly scroll through the list and ascertain which economist is being analyzed. As one student pointed out at the end of the semester, having the tweets saved on Twitter means that future students can go back and read the prior semester's tweets and further connect with the information. Thus, having additional information in the tweet will assist in using this as a learning tool for future classes.

An additional limitation of using Twitter relates to the character limit. As Kassens-Noor (2011) and Rinaldo et al. (2011) point out, the character limit poses constraints on students' tweet lengths. Though as Barn (2016) counters, the brevity requirement means that students must also synthesize their ideas. Since synthesis is a higher order skill, it will benefit learning. The main response from students was to clarify whether they could use a two-tweet format and submit multiple tweets rather than being limited to 140 characters. Thus, instructor preference and explicit emphasis about whether this is acceptable is important. In addition, when Twitter doubled the character count limit to 280 characters mid-semester, this reduced the difficulty for students who struggled writing short tweets. This change was discussed in class, and several students responded by writing longer tweets at the end of the semester. Even though it was written into the initial assignment that students could send multiple tweets, this was not reiterated during the semester and some students forgot by the end of the semester. Thus, it may be beneficial to have a refresher or a mid-semester informal assessment and tweaking of the assignment. Longer tweets were treated the same way as a single tweet, so there was neither punishment nor bonus for writing longer tweets. Three different students chose to write two-part tweets over the course of the semester. Lastly, one student did not complete the Twitter assignment. This student said that the assignment was very confusing at the beginning of the semester and he fell behind (and never caught up). Thus, it may be necessary to spend more time talking at the beginning of the semester about the assignment and perhaps even giving students time in class or in a computer lab, as recommended by Kassens (2014), to introduce students to setting up a Twitter account and sending their first tweet rather than having them do so on their own. (See Forgie, Duff, & Ross (2013) and Lin et al. (2013) for additional recommendations on using Twitter in the classroom).

6. Conclusion

Even though students are often considered digital natives, or savants with technology and social media, many students have not previously used Twitter and may find it difficult to use (Barn 2016). Similarly, less than a third of the students in the course had a Twitter account before the semester began. Thus, an important note is to provide an overview of how to tweet at the beginning of the semester, including the role of hashtags. In addition, given the character limit, it is essential to have a short character hashtag for the class. The class hashtag for the economic thought course, for example, was six characters, including the hashtag symbol. Thus, students could include the class hashtag in their tweet and still have substantial character space left. This was also essential for the instructor, as it allowed her to follow the students' tweets without having to also follow any posts that they had unrelated to class. It also allowed the students to easily follow their classmates' tweets.

Twitter can be used to increase student engagement and enjoyment of economics, particularly of dry topics that students may find it hard to relate to. In speaking with students informally outside of class, many of the students who were most excited about using Twitter were average students. Thus, the benefit of reaching the marginal students, those who are less likely to engage in the readings on their own, may be even greater than the benefits suggested here. By adding an innovative element to the course, the class discussion can become more dynamic and student engagement of a class increased.

There are also ways to expand the current assignment. For instance, students could be required to comment on each other's tweets and therefore provide commentary on the discussion. This assignment could also be easily adjusted to account for readings in any upper-level economics course. For instance, students could tweet the main thesis of a journal article. Or students could be divided into the different "sides" of a historical debate and each tweet in the

vein of one side of the debate (for instance, half the class could act as supporters of Malthus and the other half of supports of Ricardo in a debate over the corn laws, or of Keynes and Hayek on a debate over the role of fiscal policy). If the class continues using the same hashtag, then future students can benefit from reading the tweets of the prior semesters, allowing students to learn from their predecessors. In all, this paper provides a pedagogical framework for incorporating Twitter into an upper-level economics elective.

References

- Al-Bahrani, A., Holder, K., Moryl, R. L., Murphy, P. R., & Patel, D. 2016. Putting yourself in the picture with an 'ECONSelfie': Using student-generated photos to enhance introductory economics courses. *International Review of Economics Education* 22, 16–22.
- Al-Bahrani, A., Patel, D. & Sheridan, B. J. 2017a. Have economic educators embraced social media as a teaching tool? *The Journal of Economic Education* 48(1), 45–50.
- Al-Bahrani, A., Patel, D., & Sheridan, B. J. 2017b. Evaluating Twitter and its impact on student learning in principles of economics courses. *The Journal of Economic Education* 48(4), 243–53.
- Al-Bahrani, A., & Patel, D. 2015. Incorporating Twitter, Instagram, and Facebook in economics classrooms. *The Journal of Economic Education* 46(1), 56–67.
- Barn, S. S. 2016. 'Tweet dreams are made of this, who are we to disagree?' Adventures in a #brave new world of #tweets, #Twitter, #student engagement and #excitement with #learning. *Journal of Marketing Management* 32(9-10), 965-986.
- Bodnar R. J., Stellar, J. R., Kraft, T. T., Loiacono, I., Bajnath, A., Rotella, F. M., Barrientos, A., Aghanori, G., Olsson, K., Coke, T., Huang, D., Luger, Z., Mousavi, S. A., Dindyal, T., Naqvi, N., & Kim, J. Y. 2013. Pleasure and pain: Teaching neuroscientific principles of hedonism in a large general education undergraduate course. *The Journal of Undergraduate Neuroscience Education* 12(1), A34-41.
- Carini, R. M, Kuh, G. D. & Klein, S. P. 2006. Student engagement and student learning: Testing the linkages. *Research in Higher Education* 47(1), 1–32.
- Evans, C. 2014. Twitter for teaching: Can social media be used to enhance the process of learning? *British Journal of Educational Technology* 45(5), 902–15.
- Forgie, S. E., Duff, J. P., & Ross, S. 2013. Twelve tips for using Twitter as a learning tool in medical education. *Medical Teacher* 35(1), 8–14.
- Gerber, B. L., Cavallo, A. M. L., & Edmund, A. 2001. International journal of relationships among informal learning environments, teaching procedures and scientific reasoning ability. *International Journal of Science Education* 23(5), 535–49.
- Halpin, P. A. 2016. Using Twitter in a nonscience major science class increases students' use of reputable science sources in class discussion. *Journal of College Science Teaching* 45(6), 71–78.
- Haytko, D. L., & Parker, R. S. 2012. Social networking tools in a university setting: A student's perspective. *Journal of Instructional Pedagogies* 9, 1–7.
- Junco, R., Heiberger, G., & Loken, E. 2011. The effect of Twitter on college student engagement and grades. *Journal of Computer Assisted Learning* 27(2), 119–32.
- Kassens, A. L. 2014. Tweeting your way to improved # writing, # reflection, and # community. *The Journal of Economic Education* 45(2), 101–9.
- Kassens-Noor, E. 2011. Twitter as a teaching practice to enhance active and informal learning in higher education: The case of sustainable tweets. *Active Learning in Higher Education* 13(1), 9-21.
- Krause, K., & Coates, H. 2008. Students' engagement in first-year university. *Assessment and Evaluation in Higher Education* 33(5), 493–505.

- Kuznekoff, J. H., Munz, S., & Titsworth, S. 2015. Mobile phones in the classroom: Examining the effects of texting, Twitter, and message content on student learning. *Communication Education* 64(3), 344–65.
- Lin, M. G., Hoffman, E. S., 7 and Borengasser, C. 2013. Is social media too social for class ? A case study of Twitter use. *TechTrends* 57(2), 39–46.
- Lowe, B., & Laffey, D. 2011. Is Twitter for the birds? *Journal of Marketing Education* 33(2), 183–92.
- Middleditch, P., & Moindrot, W. 2015. Using technology to enhance the student experience in large cohort settings: Evidence from a journey of innovation at the University of Manchester. *Journal of Perspectives in Applied Academic Practice* 3(2), 58–71.
- Moryl, R. 2013. T-Shirts, moonshine, and autopsies: Using podcasts to engage undergraduate microeconomics students. *International Review of Economics Education* 13, 67–74.
- Moryl, R. L. 2014. Podcasts as a tool for teaching economics. *The Journal of Economic Education* 45(3), 284–85.
- Moryl, R. L., & Jiang, S. 2013. Using economics podcasts to engage students of different learning styles. *International Advances in Economic Research* 19, 201–2.
- Myers, S. A., & Bryant, L. E. 2002. Perceived understanding, interaction involvement, and college student outcomes. *Communication Research Reports* 19(2), 146–55.
- Novak, J. P., & Cowling, M. A. 2011. The implementation of social networking as a tool for improving student participation in the classroom. Unpublished manuscript from *ISANA International Academy Association Conference*.
- Nygaard, S., Day, M., Fricke, G., & Knowlton, D. S. 2014. Students' perceptions of a Twitter- based assignment in a graduate-level instructional technology course. *The Quarterly Review of Distance Education* 15(4), 1–15.
- Parcha, J. M. 2014. Accommodating Twitter: Communication accommodation theory and classroom interactions. *Communication Teacher* 28(4), 229–35.
- Rinaldo, S. B., Tapp, S., & Laverie, D. A. 2011. Learning by tweeting: Using Twitter as a pedagogical tool. *Journal of Marketing Education* 33(2), 193-203.
- Salemi, M. K. 2002. An illustrated case for active learning. *Southern Economic Journal* 68(3), 721–31.
- Stephansen, H. C., & Couldry, N. 2014. Understanding micro-processes of community building and mutual learning on Twitter: A 'small data' approach. *Information, Communication & Society* 17(10), 1212-1227.
- Tang, Y., & Hew, K. F. 2017. Using Twitter for education: Beneficial or simply a waste of time? *Computers and Education* 106, 97–118.
- Welch, B. K., & Bonnan-White, J. 2012. Twittering to increase student engagement in the university classroom. *Knowledge Management and E-Learning* 4(3), 325–45.
- Wood, J. 2017. #ECON1950: Integrating Twitter and Moodle to reach students outside the classroom. Unpublished manuscript. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2985888

Appendix A: Assignment

Part 1: Familiarizing yourself with Twitter.

Assignment 1 (due week 2): Create a twitter handle. Even if you already have a personal twitter account, please consider creating a new one for this class. You will email your twitter handle to our TA (greatTA@college.edu).

Part II: Tweeting assignments (due at the beginning of class on the day your author is discussed).

You will be randomly assigned to tweet about three different economic thinkers. For each thinker, you should compose a tweet or series of tweets that convey the main idea(s) of the author. You may either write the tweet in your own style or in the style of your author. You may use direct quotes from the readings or write your own tweets. The tweet should include both the class hashtag (#xxxxx) and either a note or hashtag identifying the author about whom you are tweeting.

For the authors you tweet about, you will also write a short (1-2 paragraph) summary of your tweet and how it relates to the reading. The tweets are due at the beginning of class on the day we discuss the readings. The summary should briefly explain your tweet and how it relates to the author or reading. For authors whom we discuss on multiple days, you are responsible for tweeting multiple times.

Grading:

Tweets will be graded on a four-point scale. A simple grading rubric is below.

Expectation:	Should include:	Possible Points	Points earned
Tweet Completed	Tweet and summary complete and submitted on time	1	
Quality of Hashtag(s)	Hashtag(s) are relevant, informative, and logical. Class hashtag (#xxxxx) included.	1	
Quality of Analysis and Summary	Interesting and insightful comments grounded in the readings. Tweet well-supported by the summary.	1	
Quality of Writing	Easy to read with no errors in grammar or usage	1	