

## History in 140 characters: Twitter to Support Reading Comprehension and Argumentation in Digital-Humanities Pedagogy

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### ABSTRACT

Click-bait headlines that tackle the modern phenomenon of social media often rail against the stultifying effects of too much Twitter. At the same time, productive educational use of Twitter in the classroom is a particularly germane area of study for digital humanists, who consider Twitter a central piece of their community-building practices. This case-study analysis addresses the use of microblogging by using activity theory to understand how social media can be harnessed to help students quickly appropriate the norms of professional historians in a discipline they often encounter as passive listeners in a large lecture course. Students reimaged Prokopios' biography of Justinian by Tweeting from three perspectives. In a preparatory exercise, students included substantive interpretive information in 66% of their Prokopios Tweets, and 18% of the Tweets had errors. After the activity, 73% of the Tweets were substantive and errors had been reduced to 8%. Twitter situated the goal of reading comprehension in a modern medium that requires rapid repurposing of content, explicit emphasis on the citation practices that govern published history research, and a clear purpose for their work—interaction with, dependence on, and fodder for the interpretive historical-perspective acts being performed by their peers, a co-construction of knowledge that closely mimics professional historical practice.

*Keywords:* digital humanities, digital history, social media, historical thinking, reading comprehension, digital literacy

### INTRODUCTION

Click-bait headlines that tackle the modern phenomenon of social media rail against the stultifying effects of too much Twitter (Macrae, 2014). These headlines are often references to academic research that questions whether social media can play a role in learning because social learners fail to analyze the “why” of a behavior they copy (Rahwan, Krasnoshtan, Shariff, & Bonnefon, 2014). On the flip side of that argument are researchers who have asked whether Twitter can be used to extend learning environments outside of the classroom or support informal or process-oriented learning via microblogging activities (Dhir, Buragga, & Boreqqah, 2013; Sample, 2010; Walsh, 2013).

Productive educational use of Twitter in the classroom is a particularly germane area of study for digital humanists, who consider Twitter a central piece of their community-building practices (Cordell, 2011; Grandjean, 2016). This case-study analysis addresses the use of microblogging by using activity theory to understand how social media can be harnessed to help students quickly appropriate the norms of the professional practice of history. Through co-construction of knowledge in a collaborative activity, students can

better engage with a discipline they encounter as passive listeners in a lecture course rather than as active participants (Barton & Levstik, 2003; Wineburg, 2001).

Three skills in particular are foundational for the discipline of history: primary-source close-reading, perspective taking and consistent citation practices (Project, 2016). These three skills interrelate in the practice of history and are fundamental to any other more nuanced understanding of the discipline (Díaz, Middendorf, Pace, & Shopkow, 2008; Grim, Pace, & Shopkow, 2004; Shopkow, Díaz, Middendorf, & Pace, 2012; Wineburg, 1991). Without close-reading skills, students lack evidence to draw on for the argumentation-evidence cycle that is at the center of disciplinary research in history. Without consistent citation practices, students lack the ability to participate in a conversation about historical argumentation. Without perspective-taking, students have difficulty formulating an argument about how and why the historical agents they encounter respond to historical trends set in unfamiliar historical contexts. These issues appear semester after semester and students themselves point out these issues on video. In one instance a student notes reading comprehension issues by saying “I’m so bad at reading this stuff” (T11,

S2F, 6:45)<sup>1</sup>; in another, a student struggles to understand why “people [talk about other people] like that?” (T2, S4F, 1:00).

To help students better learn these historical-thinking skills, we used activity theory to shape student learning during the intervention in three areas: a.) improved reading comprehension of a sixth-century imperial biography couched in the difficult, alien language of late antiquity; b.) using that basic comprehension of the biography to emphasize a deeper comprehension of authorial perspective; and c.) building a consistent understanding of citation practices and how those practices help historians engage in an argument-based discussion about historical trends.

## BACKGROUND AND DESIGN

The intervention was staged with 93 students in a 200-level history class that focused on cultural responses to outbreaks of bubonic plague at a large Midwestern public research institution. The active-learning shape of the classroom dictated a number of the rules and division of labor: 16 tables of 5-6 students, with one student responsible for controlling a built-in computer and 42” monitor. The technological affordances of the classroom made a fully digital experience possible, but did not necessarily recommend Twitter as a requirement initially. The flexibility of the all-digital experience thus required some careful choices from a nearly limitless set of initial design options, despite the classroom-imposed student group structure.

### Design and Theoretical Framework

Activity theory offers a systematic approach to these design choices that accommodates the integration of other learning theories (Danish, 2013), including constructivism and its emphasis on the role of student involvement in sense making (Jonassen & Rohrer-Murphy, 1999). Activity theory posits that a classroom is an activity system made up of many interacting elements. The core of this activity system is subjects orienting towards an object—or in other words, students and their goal. As they work to accomplish this goal, their work is mediated by a host of categories, including mediating tools, classroom and activity rules, and even participant expectations about division of labor. By situating learning in a sociocultural environment, activity theory can help predict the effects of changes to

classroom organization, student participation and technology interaction on student learning outcomes even in fluid classroom situations with many moving parts (Engeström, 1987; J. G. Greeno, 2006; Vygotsky, 1978).

Activity theory is often made visible via an activity triangle (Roth, 2004), which places the individual components of an activity into a visualization that highlights the socially constructed context around each of these individual elements. In a history classroom, these might include the sources students read, the tools they use and the rules they use to interact with those sources (Engeström, 1991). In history, for instance, the instructor’s objective—for students to recognize, understand and corroborate historical perspective in an argument about change and continuity over time—draws on mediating tools that include prior knowledge drawn from readings, disciplinary norms that govern historical thinking, and argumentation structures that govern how academic arguments are communicated.

Historically, the activity triangle has been used to represent the elements of an already-designed activity. More recently, however, the triangle has been harnessed as a tool to guide the addition of activities that support student appropriation of the instructor’s objective, as well as to provide a clear visualization of the cascading interactions between any newly added elements in an activity and existing elements (e.g. Engeström, Puonti & Seppänen, 2003). In this Twitter intervention, the activity triangle helped identify tools and rules that shifted the students’ objective for reading from memorization of names, dates and events—or “thin” basic facts (Geertz, 1994)—to more closely match the professional historian’s object, which is the use of historical data in context to understand historical perspective (“thick” or interpretive information) and make historical arguments (see **Error! Reference source not found.**).

The classroom environment, with its 16 computer-equipped tables of 6 students each, supported an active-learning approach that fosters student engagement with disciplinary practices in a direct encounter with those practices (Bransford, Brown, & Cocking, 2000). Interaction between individual and group in active learning draws on constructivism, as well as cognitive and sociocultural theories of learning.

Cognitive theories assert that people construct meaning through a dynamic process of actively relating new experiences to their prior knowledge (J. G. Greeno, 2006; James G Greeno, Collins, & Resnick, 1996). This

<sup>1</sup> Student utterances will be identified by table number, student order clockwise around the circular table starting at the monitor, with a gender reference, and then the time in the activity.

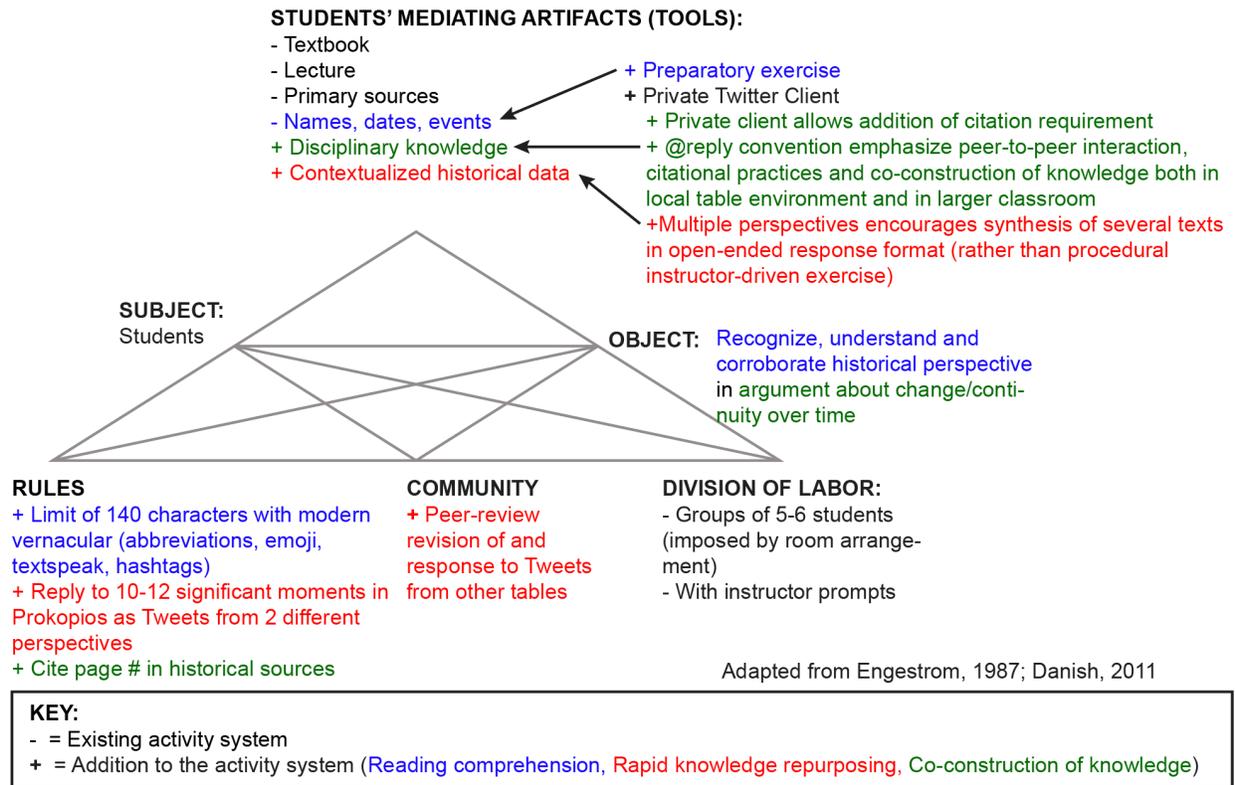


Figure 1. Additions to Twitter activity.

suggests that several factors—students’ prior knowledge of Byzantine history, their familiarity with how ancient Greek reads in translation, and their experience with the haphazard organization of ancient history—would affect their ability read a very difficult source. The primary source for the activity was Prokopios’ critical biographic account of the rule of Emperor Justinian, who was Byzantine emperor from 527 to 565 BCE and whose accomplishments include building the Hagia Sophia, completely overhauling the Roman legal code, and reconquering portions of Italy, France and Spain that had been in “barbarian” hands for several decades (Prokopios & Kaldellis, 2010).

To address these prior-knowledge issues, we first needed an activity that provided basic familiarity with the specifics of a text (Shapiro, 2004). The organizational structure of Prokopios’ sixth-century text makes this a challenge. The structure is more like the intertextual non-sequential reading that appears in online reading situations rather than that of a sequential modern textbook on which many reading-comprehension studies are performed (Hartman, 1995). This lack of structure requires the rapid and flexible construction of knowledge, and hypertext (unstructured linking

strategies that highlight significant connections between different texts) is particularly valuable in improving reading comprehension in these ill-structured domains (Spiro, Feltovich, Jacobson, & Coulson, 1992). Intentional connections between elements of this unstructured text would support rapid repurposing of information so students could simultaneously absorb basic details from Ancient Greek translated into modern English as well as begin to understand the seemingly tangential structure of Prokopios’ chapter organization.

Next, studies on the synthesis of specifics from a single text connected with other details across ill-structured related texts drawn from multiple source suggested that we needed to support students as they repurposed synthesized information creatively. Social-studies reading comprehension in particular is often dependent on students’ pre-existing ability to incorporate multiple reading strategies, to engage with unfamiliar vocabulary, and to synthesize background and contextual information both from the text and from outside sources like lecture or additional reading (Cromley & Azevedo, 2007). That suggests a feedback loop between basic reading comprehension and the transformation of basic comprehension into constructed

information that can be applied for disciplinary purposes (in our case, perspective-taking). We needed to support both basic absorption of material in the text and provide a mechanism for its reuse, to enforce the significance of detail and its role in a synthetic analysis of the text. Construction of structured knowledge from ill-structured text pushes readers to filter the text for information germane to the current task and then to test their summary by creatively reshaping and synthesizing those moments of interest (Ward, Smith, & Finke, 1999) into different forms without losing the central meaning of the original text. That suggested several iterations of the perspective-taking exercise, rather than a single perspective drawn from Prokopios' own words.

This reshaping and synthesis of student reading can be done in small-group discussion, which helps students co-construct knowledge by asking them to negotiate the meaning of a historical text by presenting and defending their own opinion using evidence (Fielding & Pearson, 1994). However, the cognitive flexibility required for online reading comprehension argues for a smartphone-enabled (Lan, Tsai, Yang, & Hung, 2012) digital component that expands the sphere of discussion to incorporate online reading and discussion (Hou & Wu, 2011) with other groups who are themselves simultaneously engaged in their own in-class face-to-face small-group discussion. Finally, this collaboration both in small groups and across groups supports reading comprehension when it takes the form of sustained open-ended discourse (Nystrand, 2006) and requires substantive, rather than simple procedural, response (Nystrand & Gamoran, 1991) rather than a format with responses predetermined by the instructor. All three of these reading-comprehension requirements led to Twitter as a platform that would require the communication of both thin facts and thick contextualized information (Silver, 2009) in a structured but flexible open-ended digital discourse that encouraged sustained collaborative interactions between groups of students unmediated by predetermined instructor responses.

The addition of Twitter as a tool highlighted the medium's ability to support sustained citation practices. Social science reading comprehension points to the importance of regular checks on student reading comprehension (Vaughn et al., 2013), a practice that parallels the professional historian's practice of engaging in peer review. Peer review frames the historian's argumentation in a series of checks and balances to both primary-source comprehension and the way that

comprehension is used to support argumentation. Citations make these peer conversations, and the research checks and balances such conversation provides, visible by providing access to the original content in parallel with the new interpretation of the original content.

The citation-requirement element shaped our choice to build a private platform. No major public social media platforms require a citation, and we wanted to require citations so that students could find, read and assess their peers' contributions to the social-media activity as they would if they were engaged in writing a series of related journal articles. The citation requirement, coupled with the sometimes titillating nature of Prokopios' work (a similarly intentional choice to foster student interest), suggested that a private alternative to Twitter would be helpful.

For that reason, we chose a custom-built web application based on Twitter that emphasized peer-to-peer interaction but had a built-in limit for the character count students could use to express fully formed ideas. Twitter's public, but threaded, reply structure also emphasized the necessity of citations and reinforced the function of scholarly dialogue as the ultimate outcome of combining reading comprehension with historical perspective taking. Students input Tweets in a form with three required fields and were able to view the class's collected Tweets from a "view all tweets" link on the input page (see **Error! Reference source not found.**), simplifying the move between the collaborative sense-making process and the argumentation-synthesis process. A "reply" arrow with each Tweet made this co-constructed knowledge process even more seamless (see **Error! Reference source not found.**).

## New Tweet (Prokopios as Social Media)

Username:

Tweet: 140

Citation:

[View all tweets](#)

Figure 2. Private Twitter entry form.

\_xxProkopimpxx\_ (Aug 29, 7:09)

just saw theo jump out a window with no pants..... anty wtf u doin gurl thats yo kid!!!! #thatjustainright (1.20)

@InsideByzantion (Aug 31, 7:21)

@\_xxProkopimpxx\_ The true story is that Antonina and her son were caught in the basement, he didn't escape through a window. (1.20)

@ByzantionDrama (Aug 31, 7:08)

@\_xxProkopimpxx\_ JUST SAW ANTONINA THROW HER INFANT SON OUT HER WINDOW!! CLICK HERE TO SEE THE WHOLE VIDEO #MomOfTheYear (1.20)

Figure 3. Private Twitter feed display.

Finally, the emphasis on citation and peer feedback coupled with the effects individual prior knowledge can have on learning outcomes suggested a multi-stage activity with preparatory work that engaged as many students as possible with the text—and therefore the information contained in it—using a simpler version of the activity in order to provide a baseline from which to measure learning gains. In class session 3 of a 16-week semester, students were placed into 16 random groups. Each group used the private Twitter-like feed and a different page from a 16-page excerpt written by Prokopios, a sixth-century Byzantine court functionary. Using that page, students collectively produced a first-person Twitter narrative of Prokopios' very critical biographic account. Day 1 did not require students to check the accuracy of their work or familiarize themselves in depth with more than 1 page of the primary source.

## Methods

The intervention for which we collected data took place very early in a 16-week semester (the first class session of week 2). At the beginning of class, students were placed into what would become their permanent groups for the remainder of the semester. We then filmed two tables for a 40-minute interaction with the Twitter stream they had created in different, random groups during the preparatory activity. As with the preparatory activity, each table made use of a different page in Prokopios but were asked to focus on two different reactions to the Tweets their classmates had previously produced for that page from Prokopios' perspective. The first reaction asked students to reword or respond to existing Tweets as though they were gossip columnists—in order to exaggerate the perspective presented in the primary source. In the second reaction, students were asked to reword or respond to existing Tweets as though they were

investigative journalists committed to a more objective “balanced” view of the events—in order to place the perspectives presented in the first two Tweets in context. In each case, students had to re-read the Tweets their classmates had produced, find the source material for those Tweets on their assigned page, and then move outside of their assigned page to find corroboration, support and refutations of that narrative for the purposes of gossip or news reporting.

For this case study, I coded the Twitter stream for thick/thin Tweets and inaccuracies. I also identified and transcribed instances in the video of group discussion at Tables 2 and 11 that indicated implicit or explicit failures and successes in reading comprehension, perspective taking and citation references.

## DISCUSSION

### Tweet Stream Overview

Of the 83 Tweets generated in the preparatory activity, 55 or 66%, had substantive thick content. Fifteen Tweets, or 18% of the Tweets, contained inaccurate information, of which four mischaracterized the relationship between Antonina and her step-son/lover Theodosius as a blood relationship instead of an adoptive relationship.

In the response activity, 85 (73%) of the 116 responses that responded to content in the original had thick content. Nineteen of these elaborated on thin Tweets generated during the preparatory activity. Of the remaining 31 response Tweets, 5 are thin largely as a consequence of students responding to thin Tweets.

Only eight of the response Tweets contained inaccurate information, for a percentage of 8%. As with the original Tweets, four fail to differentiate between Theodosius as son or stepson but only two expressly say the two are related by blood. Seventeen (15%) of the

response Tweets explicitly correct misunderstandings, including 5 Tweets intended that address Antonina and Theodosius's relationship. It is particularly encouraging to see more students correcting misinformation about Antonina and Theodosius than holding it, since this is a persistent misunderstanding of Prokopios.

### Qualitative analysis

Both tables included at least one student who indicated a perceived lack of reading comprehension, either as a failure to understand the language itself or as a failure to understand why the author used the language or described the events they did. For instance, two minutes into the activity, one student asked of the historical text, "Why do people even write like this? I don't understand the past" (T2, S2F, 2:15). Another student expressed a similar sentiment, though directed inward at herself rather than outward at the author: "I'm so bad at reading this stuff." (T11, S2F, 6:51). The interaction between different elements of the activity design in this Twitter exercise successfully supported students as they addressed these perceived and actual lacks of reading comprehension.

First, the rule that students use respond to 10 or 12 previously generated Tweets directly drew on the affordances of the mediating tool—in this case, the call-and-response format that is the hallmark of both Twitter and of our Twitter-like tool—to improve students' reading comprehension. This interplay between tool and rule provided an opportunity to revisit specific moments in the text they might not have recalled or fully understood the first time. In these cases, students went on to demonstrate some key point of information that suggested their perceived lack of reading comprehension was oriented not toward a lack of memorization but toward a lack of context in which to place the information from the text in order to understand its

significance. The student who described herself as being "bad at reading this stuff" was able to clearly articulate the relationship between Theodora (Justinian's wife), Antonina (Theodora's closest friend), Belisarios (Antonina's husband) and Theodosius (Antonina's lover). In the preparatory exercise, students from one table misspelled Belisarios. In the first response to this tweet, done by Table 10, students noted that Antonina was more worried about making Theodora happy than her husband (see **Error! Reference source not found.**)

In the process of looking up the circumstances surrounding Antonina's need to please Theodora, a student noticed a reference to Theodosius two Tweets later in the timeline.

**T11, S4F:** "How is Theodosius tied to Theodora?" (11:43)

**T11, S2F:** "Cause like Theodosius had the affair with Antonina and Antonina is Theodora's best friend. All these names sound the same."

This interaction was prompted by Student 4 looking at a Tweet generated during the preparatory activity about Theodosius. The question provided some context into which Student 2 could map the Tweet to the original language in the text, noting and placing the two names in context, and then again in the Tweet the group constructed as a response.

Second, the activity design forced a deeper engagement with the text at an individual level, both to the benefit of each student and to the benefit of their peers. In some cases, the acknowledgement of reading comprehension failure included an admission that the student simply had not read a portion of the text: "I, like, didn't read it though" (T2, S3M, 19:06). That same student can be heard reading the text aloud on camera over the course of the next 4 minutes, and his peers' responses to his reading aloud require them to go back to

**wantonthoughts** (Aug 29, 7:03)

and this ho had @bellasario WHIPPED #sorrynotsorry (1.14)

**@boringAf** (Aug 31, 7:26)

@@weliketolie to what extent will Antonina go to please Theodora (1.14)

**@weliketolie** (Aug 31, 7:14)

@wantonthoughts ANTONINA TRYING TOO HARD TO PLEASE THEODORA?? (1.14)

Figure 4. Table 11 disambiguation of Antonina, Theodora, and Theodosius.

**Table 11** (Aug 29, 7:04)

When @Theodora literally treats @Theodosios like a pig for no less than four months..and he dies #RIP\_Bruh #WorstQueenEver #JustWow (3.09)

**@NotAndersonCooper** (Aug 31, 7:20)

Theodora tortures Theodosios but this does not kill him. #truth (3.09)

**@TheGreat\_Weasel** (Aug 31, 7:05)

Our empress @Theodora hanged her best friend's lover, @Theodosios for at least four months until he died. #JustWow ((3.09))

**Figure 5. Table 11 corrects a previous Tweet.**

the original text and re-engage with it.

While there are other activities that can push students to reread the text, the Twitter activity's response rule required students to engage with specific sections of the text that had been pre-selected by another group rather than choosing a passage at random within their group and finding a way to shoehorn it into the conversation. In the previous example, we can clearly see the effect the activity's division of labor has on an individual student's learning, with one student in a smaller 5-6 person group interacting locally at their table and with their primary source to generate responses to Tweets, which in turn governs that group's integration into the larger classroom community via the Twitter stream that had been generated at the whole-class level.

The collaborative nature of this sense-making as it contributed to reading comprehension is also visible in the video data. In one series of utterances, a student at table 2 drew on the Tweets she helped construct at a different table during the preparatory exercise, using it to frame her response to an inquiry at her current table about punishment in Prokopios.

**T2, S1F:** "Do you guys know of a specific reference later on that demonstrates what happens?" (6:04)

**T2, S3M:** "There's a guy who gets locked in a basement for 2 months and one guy gets hung from a ceiling."

**T2, S4F:** "If we go to my group, I think my group talked about it."

Table 11 provides a similar example that directly involves manipulation of the Twitter tool during a response to an inaccurate Tweet (see **Error! Reference source not found.**).

**T11, S4F:** "It says 'worst queen ever' but wasn't she empress?" (9:37)

**T11, S2F:** "Copy it and then do the reply and then put it back in."

**T11, S4F:** "Get rid of worst queen ever. 'Our empress Theodora treats'...."

**T11, S2F:** "...like something worse than a pig. Wait, can we say that?"

**Instructor:** "You can lie, but the lies need to be based on primary source"

**T11, S3M:** "So we can keep the part about how he died."

The exchange, which continued with all 6 students at the table engaging in the conversation to clarify exactly how Theodora tortured (but did not kill) Theodosios, shows students responding to a Tweet collaboratively constructing both surface knowledge—Theodora was an empress, and her torture of Theodosios didn't kill him—and also more substantive knowledge. They were able to differentiate between Theodora's formal role as empress, which gave her power over citizens in a wider geographic area over her citizens, and the aspersions Prokopios cast on her public reputation, which made rumors of Theodosios' believable.

**@worriedctzn** (Aug 29, 7:05)

Hahaha maybe people will use these tweets l8r. #rt4follow (1.09)

**@TrustyRoman** (Aug 31, 7:27)

**@@worriedctzn** This just in: more writings have been discovered speaking out against the throne of Justinian. ((1.5n4))

**Figure 6. Table 2 tries to corroborate a previous Tweet.**

The explicit dependence on citation practices as both a practical necessity and as a mechanism for communicating and advancing ideas is also consistent across tables.

**T2, S3M:** “Does anyone remember what that citation was off the top of their head?” (20:34)

**T2, S1F:** “No”

**T2, S5M:** “We can go get it.”

Later on, the same group extends their use of citations drawn from the main text and begins to look at the citations provided by Prokopios’ modern translator (also a historian). One Tweet from the preparatory exercise describes Prokopios’ goal as a warning for future rulers to behave.

The students begin an extended conversation about how to corroborate the Tweet, prompted by the fact that they were currently engaged in the practice of newsmaking, not gossip-column writing.

**T2, S5M:** “If we could find something that, like, says that Prokopios is using a written record, like in the footnotes or something.” (22:52)

**T2, S4F:** “That would be good....”

**T2, S5F:** “I don’t know if that would be in footnotes or where that would be.”

**T2, S3M:** “Right there, not necessarily what you were saying, ....”

**T2, S5M:** “People will read it later?”

**T2, S3M:** “but it’s talking about how Prokopios wasn’t the only one that was against the government.”

Here, the two rules in the activity--a combination of citation and perspective taking—pushed students to add a new historical-thinking skill to their mediating tools, one we did not explicitly address in the activity: corroboration. It’s also of note that the student who identifies the footnote that provides corroboration was the student who engaged with the text for the first time during the activity itself.

The extended conversation following Table 2’s search for footnotes points to the cascading effect each element in an activity triangle has on the other elements. The integration of reading comprehension fostered by the activity’s citation and perspective-taking rules, the direct requirements of those citation practices and perspective-taking, the collaborative open-ended discussion governed by both the division of labor into small groups and the larger community classroom provides a system in which students can co-construct knowledge in a variety of ways. As they transitioned

from corroborating a peer Tweet via the footnotes provided by the translator to the task of responding to a Tweet, they struggled and conversation stalled. The struggle was mitigated by an implicit appeal to their role as newspaper reporters: “You could start it with ‘This just in’, like....” (T2, S1F, 24:34). Although the students had yet to figure out what they would say, the perspective-taking element of the activity provided a starting point, from which the students jumped back to the earlier conversation in which they corroborated Prokopios’ perspective.

In the 5 minutes that follow, every voice is distinctly apparent at least twice as Table 2 figures out how to construct their Tweet. Their first order is to transition from “this just in” to their main headline, but they quickly move to the question of how to cite a footnote (they had been working with only page numbers). As with the shorter footnote search that preceded it, the conversation around how to cite a footnote transitioned from comprehension to collaboration to perspective taking. The final utterance in the 5-minute block of uninterrupted conversation, between 24:34 and 30:30, is from S5, who says “Take notes where we don’t trust [Prokopios].” The wide-ranging conversation over a single Tweet highlights the students’ new understanding that effective perspective-taking also means questioning a primary source’s perspective, the importance of tracking exactly where they disagree with Prokopios, the value of the classroom’s physical structure in their collaborative activity (the students use a table mic to call an instructor to the table for consultation on the footnote citation), and the role their own collaboration had in their efforts to make sense of what they read in Prokopios.

The involved conversation at table two highlights a final feature of the Twitter exercise: improved student engagement. (Nystrand & Gamoran, 1991) notes that the limited engagement around procedure responses can actually interfere with student learning gains in reading comprehension studies. Setting a perspective-taking exercise in the world of social media, and asking students to employ historical data in service of several different perspectives, encouraged their involvement in the exercise in ways traditional discussion may not have. Some of the student utterances were lukewarm:

**T11, S2F:** “How about one more? Why not. We’re here. We have time.” (14:30).

However, the students could simply have stopped, having finished the required number of response Tweets. They chose to keep going. Another student (T2 S3M)

provided a more enthusiastic response: “Oh, I’m a reporter now. This is kinda fun.” (19:48). Finally, students who had limited their involvement engaged despite themselves. Fourteen minutes into the exercise, T11 S4F broke off from group discussion and began reading other table’s Tweets on the big monitor. Her laughter is indicative of enjoyment, and it, along with an additional comment (“That’s pretty good!”) marks the point at which she went from a mostly passive observer, with contributions in only one 30-second interval previously, to being one of the stronger voices in her group’s discussion of their Twitter responses.

## FINDINGS

The primary finding of this study tackles a reshaping of the history curriculum that repositions history in the public eye as a discipline in which analysis and argumentation reign, rather than the memorization of names, dates and faces (Grossman, 2016). Many of the standard assessments, formative and summative alike, in higher-ed history classrooms depend on identification of significance. For instance, in a lecture on civil rights in modern U.S. History, a student might be called on to identify W.E.B. Du Bois and briefly note his significance as a way of assessing whether the student did assigned reading. While it does require some interpretation of historical context, this identification exercise is individual in its approach, limited in its context, and narrow in its appeal for student participation and engagement.

The activity design that governed our Twitter exercise, on the other hand, situates the object of reading comprehension in the context of a mediating tool that mimics modern social media. This mediating tool supports rules that require rapid repurposing of content, perspective taking, and explicit citation practices that govern published history research, which in turn offer students task relevance both for their work in the history classroom and as they engage with social media outside the classroom. Even the preparatory exercise demonstrates considerable engagement, that, in this exercise, helped support improved reading comprehension. While The quality of Tweets improved during the perspective activity, 66% of the original Tweets still had substantive thick content that contained multilevel informational and interpretive information. Students connected to and learned from Prokopios’ text in this Twitter perspective exercise in part because it was filtered through a medium that makes sense, but also because the medium provides a clear purpose for their work—interaction with, dependence on, and fodder for

the interpretive historical-perspective acts being performed by their peers, a co-construction of knowledge that closely mimics professional historical practice.

## REFERENCES

- Barton, K. C., & Levstik, L. S. (2003). Why don't more history teachers engage students in interpretation? *Social Education*, 67(6), 358-358.
- Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). How people learn: Washington, DC: National Academy Press.
- Cordell, R. (2011). How to Start Tweeting (and Why You Might Want To). *ProfHacker*. Retrieved from <http://www.chronicle.com/blogs/profhacker/how-to-start-tweeting-and-why-you-might-want-to/26065>
- Cromley, J. G., & Azevedo, R. (2007). Testing and refining the direct and inferential mediation model of reading comprehension. *Journal of Educational Psychology*, 99(2), 311-325. doi:10.1037/0022-0663.99.2.311
- Danish, J. A. (2013). Designing for Technology Enhanced Activity to Support Learning. *The Journal of Emerging Learning Design*(1).
- Dhir, A., Buragga, K., & Boreqqah, A. A. (2013). Tweepers on Campus: Twitter a Learning Tool in Classroom? *Journal of Universal Computer Science*, 19(5), 672-691. doi:<http://dx.doi.org/10.3217/jucs-019-05-0672>
- Díaz, A., Middendorf, J., Pace, D., & Shopkow, L. (2008). The history learning project: A department “decodes” its students. *The Journal of American History*, 94(4), 1211-1224.
- Engeström, Y. (1987). *Learning by Expanding: An Activity - Theoretical Approach to Developmental Research*. Helsinki: Orienta-Konsultit Oy.
- Engeström, Y. (1991). Non Scolae Sed Vitae Discimus: Toward Overcoming the Encapsulation of School Learning. *Learning and Interaction*, 1, 243-259.
- Engeström, Y., Puonti, A. & Seppänen, L. (2003). Spatial and temporal expansion of the object as a challenge for reorganizing work. In D. Nicolini, S. Gherardi & D. Yanow (Eds.), *Knowing in organizations: A practice-based approach*. Armonk: Sharpe.
- Geertz, C. (1994). Thick description: Toward an interpretive theory of culture. In M. Martin & L. C. McIntyre (Eds.), *Readings in the philosophy of social science* (pp. 213-231): MIT Press.
- Grandjean, M. (2016). A social network analysis of Twitter: Mapping the digital humanities community. *Cogent Arts & Humanities*, 3(1). doi:10.1080/23311983.2016.1171458
- Greeno, J. G. (2006). Learning in Activity. In R. K. Sawyer (Ed.), *The Cambridge handbook of the learning sciences* (pp. 79-96). New York: Cambridge Univ Press.
- Greeno, J. G., Collins, A. M., & Resnick, L. B. (1996). Cognition and learning. *Handbook of educational psychology*, 77, 15-46.

- Grim, V., Pace, D., & Shopkow, L. (2004). Learning to use evidence in the study of history. *New Directions for Teaching and Learning*, 2004(98), 57-65. doi:10.1002/tl.147
- Grossman, J. (2016). History isn't a 'useless' major. It teaches critical thinking, something America needs plenty more of. Retrieved from <http://www.latimes.com/opinion/op-ed/la-oe-grossman-history-major-in-decline-20160525-snap-story.html>
- Hartman, D. K. (1995). Eight readers reading: The intertextual links of proficient readers reading multiple passages. *Reading Research Quarterly*, 520-561.
- Hou, H.-T., & Wu, S.-Y. (2011). Analyzing the social knowledge construction behavioral patterns of an online synchronous collaborative discussion instructional activity using an instant messaging tool: A case study. *Computers & Education*, 57(2), 1459-1468. doi:<http://dx.doi.org/10.1016/j.compedu.2011.02.012>
- Jonassen, D. H., & Rohrer-Murphy, L. (1999). Activity theory as a framework for designing constructivist learning environments. *Educational Technology Research and Development*, 47(1), 61-79.
- Lan, Y.-F., Tsai, P.-W., Yang, S.-H., & Hung, C.-L. (2012). Comparing the social knowledge construction behavioral patterns of problem-based online asynchronous discussion in e/m-learning environments. *Computers & Education*, 59(4), 1122-1135. doi:<http://dx.doi.org/10.1016/j.compedu.2012.05.004>
- Macrae, F. (2014, Feb 5, 2014). Is Twitter making you STUPID? Social networking sites are making it hard for people to think for themselves. Retrieved from <http://www.dailymail.co.uk/sciencetech/article-2551578/Is-Twitter-making-STUPID-Social-networking-sites-making-hard-people-think-themselves.html>
- Nystrand, M. (2006). Research on the Role of Classroom Discourse as It Affects Reading Comprehension. *Research in the Teaching of English*, 40(4), 392-412.
- Nystrand, M., & Gamoran, A. (1991). Instructional Discourse, Student Engagement, and Literature Achievement. *Research in the Teaching of English*, 25(3), 261-290.
- Project, A. T. (2016). 2016 History Discipline Core. Retrieved from <https://www.historians.org/teaching-and-learning/tuning-the-history-discipline/2016-history-discipline-core>
- Prokopios, & Kaldellis, A. (2010). *The Secret History with related texts*. Indianapolis: Hackett Pub. Co.
- Rahwan, I., Krasnoshtan, D., Shariff, A., & Bonnefon, J.-F. (2014). Analytical reasoning task reveals limits of social learning in networks. *Journal of The Royal Society Interface*, 11(93).
- Roth, W.-M. (2004). INTRODUCTION: "Activity Theory and Education: An Introduction". *Mind, Culture, and Activity*, 11(1), 1-8. doi:10.1207/s15327884mca1101\_1
- Sample, M. (2010). Practical Advice for Teaching With Twitter. *Prof Hacker*. Retrieved from <http://www.chronicle.com/blogs/profhacker/practical-advice-for-teaching-with-twitter/26416>
- Shapiro, A. M. (2004). How Including Prior Knowledge As a Subject Variable May Change Outcomes of Learning Research. *American Educational Research Journal*, 41(1), 159-189. doi:doi:10.3102/00028312041001159
- Shopkow, L., Diaz, A., Middendorf, J., & Pace, D. (2012). The History Learning Project "Decodes" a Discipline: The Union of Teaching and Epistemology. In K. McKinney & M. T. Huber (Eds.), *The Scholarship of Teaching and Learning In and Across the Disciplines* (pp. 93-113). Bloomington, IN: Indiana University Press.
- Silver, D. (2009). The Difference Between Thin and Thick Tweets. *silver in sf*. Retrieved from <http://silverinsf.blogspot.com/2009/02/difference-between-thin-and-thick.html>
- Spiro, R. J., Feltovich, P. J., Jacobson, M. J., & Coulson, R. L. (1992). Cognitive flexibility, constructivism, and hypertext: Random access instruction for advanced knowledge acquisition in ill-structured domains. In T. M. Duffy & D. H. Jonassen (Eds.), *Constructivism and the technology of instruction : a conversation* (pp. 57-76). Hillsdale, N.J.: Lawrence Erlbaum Associates Publishers.
- Vaughn, S., Swanson, E. A., Roberts, G., Wanzek, J., Stillman-Spisak, S. J., Solis, M., & Simmons, D. (2013). Improving reading comprehension and social studies knowledge in middle school. *Reading Research Quarterly*, 48(1), 77-93.
- Vygotsky, L. S. (1978). *Mind in society: the development of higher psychological processes* (M. Cole, Trans.). Cambridge: Harvard University Press.
- Walsh, B. (2013). Teaching With Twitter - Part One. Retrieved from <https://bmw9t.github.io/blog/2013/11/02/twitter-1/>
- Ward, T. B., Smith, S. M., & Finke, R. A. (1999). Creative Cognition. In R. A. Sternberg (Ed.), *Handbook of creativity* (pp. 189). Cambridge: Cambridge University Press.
- Wineburg, S. S. (1991). On the reading of historical texts: Notes on the breach between school and academy. *American Educational Research Journal*, 28(3), 495-519.
- Wineburg, S. S. (2001). *Historical thinking and other unnatural acts: Charting the future of teaching the past*. Temple University Press.



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