Academic, social, and cultural learning in the French #bac2018 Twitter hashtag.

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Compliance with Ethical Standards

Conflict of Interest: The authors declare that they have no conflict of interest.

Ethical Approval: This research is based on public data and is therefore not considered by the institutional review boards of the University of Kentucky or Michigan State University as falling under their purview. However, as described below, we have applied established considerations for ethical internet research.

Informed Consent: As above, because this research is based on public data, it is not considered by the institutional review boards of the University of Kentucky or Michigan State University as requiring informed consent. Nonetheless, we have applied considerations for ethical internet research identified by bodies such as the Association of Internet Researchers and leading researchers in the field. In particular, prior to analysis, we removed all data coming from private accounts or that was deleted by its author (or Twitter) after its original composition. Furthermore, except in the case of public figures, we have made considerable effort to obscure the identities of all those who produced the data considered in this study.

Abstract

Despite the continued use of social media in educational contexts, there remains skepticism about whether platforms like Twitter can actually contribute to learning. In this paper, we argue that such skepticism is based on an overly narrow conception of learning that focuses on academic performance and disregards other manifestations. To advance this argument, we document use of the #bac2018 Twitter hashtag in the month leading up to the 2018 *baccalauréat* exams (the "bac"), which are significant not only for their role in the French educational system but for their connections with broader French society and culture. We found that participants engaged in sharing notes; slacking, doubting, and fearing; requesting retweets; preferring topics; complaining; connecting with bac heritage and experience; joking; and showing awareness of time. In keeping with the significance of the bac, we found that these practices within the #bac2018 hashtag were associated with not only academic learning but also social and cultural practices that are significant despite their absence from any formal curriculum. These findings underline the complexity and richness that characterizes learning—especially in digital contexts.

Keywords

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The continued use of social media for educational purposes (see Greenhow, Galvin, & Staudt Willet 2019) has been met with continued skepticism about its affordances for learning. For example, Barbetta, Canino, and Cima (2019) published a study in which using Twitter appears to have "reduc[ed] performance on a standardized test score by about 25–40% of a standard deviation" (p. 3). Barbetta and colleagues suggested that these results may indicate that "Web 2.0 platforms decrease students' performance" (p. 3), which stands in contrast to previous work's general optimism about these platforms (e.g., Greenhow, Robelia, & Hughes 2009).

While Barbetta and colleagues' findings make an important contribution, there are other ways to understand what it means to *learn*. It may well be the case that Twitter is not well suited to support learning as measured by a standardized test in a literature classroom, but with respect to social media and other digital technologies, it can be helpful to expand one's conception of learning beyond defined curricula and subject matters (Gee 2003; Greenhow & Robelia 2009). This broader conception of learning is part of a sociocultural view of learning as engaging with—and thereby acquiring—"[community] practices and participatory abilities" (Greeno, Collins, & Resnick 1996, p. 23). Even within a classroom setting, this sociocultural view offers important advantages over a conception of learning that limits its focus to academic performance. For example, Selwyn (2007b) suggests that young people must learn to become students at the same time that they learn the subjects they are studying, despite the fact that researchers tend to concentrate on the latter more than the former. Indeed, the 20th century saw the emergence of a number of theories conceptualizing a *hidden curriculum* (see Kentli 2009) that socializes and enculturates students independently of an official curriculum focused on subject matter knowledge.

In response, we present an exploratory examination of how participants use #bac2018 Twitter hashtag and what implications this presents for learning. On Twitter, hashtags are keywords or phrases that index posts on a particular topic—in this case, the 2018 offering of the French Republic's baccalauréat exams for secondary students. We will use a *literacies* framework to consider how social media activity might reflect different kinds of learning. Unsurprisingly, the importance of these exams led students to use the Twitter hashtag in efforts to support academic learning. However, the significance of the bac in France—and particularly among French students—drew attention to ways that hashtag activity connected with learning to participate in student or cultural communities. Our findings underscore the potential of social media to support learning. More importantly, they offer important insight into how learning on social media should be understood and framed: as perhaps distinct from common conceptions of (academic) learning and as situated in social and cultural contexts.

Conceptual Framework

In this section, we lay out a conceptual framework for *learning* that equates it with acquiring *literacies* that are developed through participation in *communities*. Since at least the 1990s, the field of *new literacies* has provided a sociocultural framework for understanding learning (Knobel & Lankshear 2014). Whereas literacy is typically considered in singular, universal terms as command of reading and writing, a (new) literacies framework recognizes multiple "socially recognized ways of generating, communicating and negotiating meaningful content through the medium of encoded texts within contexts of participation" (Lankshear & Knobel 2006, p. 64). In other words, any meaningful practice or significant body of knowledge within any social context (Gee 1989) or academic discipline (Gee 2003) can be thought of as "a literacy."

Some of these literacies may correspond to defined academic subjects, while others may be specific to the social context from which they emerge. For example, in Curwood's (2013) examination of literacies present in online spaces dedicated to the *Hunger Games* franchise, she noted that successful participation in these spaces required adolescents to both "recognize the use of literary techniques" and "understand what the community values in terms of interaction and participation" (p. 421). While the first of these skills may also be valued within an adolescent's English/Language Arts classroom, the second may be unique to the online space. Nonetheless, as both are meaningful practices valued within a particular social context, both of these qualify as *literacies* and their acquisition as *learning*.

Given this understanding of learning, Greenhow and Robelia (2009) have suggested that when considering social media, "adult-driven discourses ought to consider not just 'academic' literacies... but also young people's 'nonacademic' communicative literacies" (p. 1131). Similarly, Greenhow and Gleason (2012) have argued for considering "'tweeting' as a literacy practice, comprising both traditional and new literacies" (p. 464). While literacies scholars acknowledge that a given literacy may ultimately lack value (e.g., Gee 2003), they maintain that a more expansive view of learning can be critical for acknowledging authentic learning absent from formal curricula, including learning happening among underprivileged groups (Gee, 1989). Furthermore, much of the learning that humans engage in is divorced from formal contexts—but can be accounted for through a literacies framework. Thus, practitioners and scholars of education cannot fully understand learning (or its broader social implications) by limiting the phenomenon to the demonstrable acquisition of subject matter content.

As previously stated, literacies are acquired by participation in communities. This builds upon Lave and Wenger's (1991) famous suggestion that "learners inevitably participate in

communities of practitioners" (p. 29) and that participation in the activities (i.e., literacies) of the community results in both learning and greater status within the community. Building on this framing, Gee (2003) proposes flipping the traditional question of education researchers on its head: Rather than ask *whether* something is being learned, he suggests assuming that those participating in a social context *are learning something* and instead asking *what are they learning?* Gleason (2013) built on this reasoning by suggesting that literacy acquisition happens through actively participating in Twitter conversations. Thus, to use the #OWS hashtag is to acquire literacies associated with the Occupy Wall Street movement (Gleason 2013), and should therefore be considered learning. Likewise, tweeting about feminism is practicing feminist literacies, and therefore learning to become part of that community (Gleason 2018). These assertions do not preclude further questions about how and whether these literacies overlap (or don't) with those valued in formal curricula. Nonetheless, considering social media as a site for learning and social media activity as meaningful invites education stakeholders to consider what they teach us about what education looks like.

Literature Review

Education researchers have long been interested in social media as a space for learning and teaching. Indeed, van Osch and Coursaris (2015) noted that between 2004 and 2011, a plurality of the social media research they surveyed was associated with educational topics. Greenhow and Lewin (2016) have argued that social media is "a space for learning with *varying attributes of formality and informality*" (p. 7, emphasis in original). That is, although social media can be (and has been) used as both an instructional technology within formal institutions of education and a vehicle for informal self- or group-directed learning, it also calls into question the boundaries between these phenomena. We note that a literacies focus is useful across all of

these settings. That is, although our conceptual framework is particularly well-suited for documenting and explaining learning in informal settings, Gee (2003) argues that the kinds of disciplinary knowledge (ideally) taught in schools can also be thought of as literacies. Furthermore, Gee (1989) notes that there exist many literacies "connected to schools (different ones for different types of school activities and different parts of the curriculum)" (p. 11). Thus, a literacies framework can help account for meaningful practices that are taught and learned in schools without ever appearing on a syllabus, such as "the informal, cultural learning of 'being' a student" (Selwyn 2007a, p. 18).

Variations in formality are reflected in the literature on students' use of social media. In Greenhow and Askari's (2017) review of 24 articles on the use of social network sites in education, they found seven focusing on out-of-school contexts as well as eight addressing classroom contexts and "students' use of social network sites for: enhanced creativity; new literacies or language learning; engagement in subject matter materials; enhanced student-student and/or student-teacher communication; academic collaboration; and demonstrated thinking skills" (p. 633). Three additional articles were focused on explaining how social media could bridge formal and informal learning. The remaining articles in the review focused on primary and secondary teachers' use of social media for professional learning. This latter body of work is large enough that it was taken up again in a subsequent review of literature on the use of social media by teachers (Greenhow, Galvin, Brandon, & Askari, 2020), which noted that the body of literature addresses their use of social network sites in both formal and informal teacher professional development. This review also looked at research on teachers' use of social media as part of their classroom teaching, suggesting that social media have been integrated by teachers

across academic disciplines (including English, science, mathematics, world languages, social studies, physical education, and religion).

Gao, Luo, & Zhang's (2012) review of the literature on microblogging in education is particularly useful for this study given its focus on Twitter. While they acknowledged that Twitter was used in less-formal learning settings (i.e., at a professional conference) and in a primary school classroom, it is noteworthy that 18 of the 21 articles they reviewed were focused on Twitter's use in post-secondary settings, including in language, instructional design, new media, and business classes. Gao et al.'s (2012) review also noted that Twitter was used in order to increase participation, extend learning "beyond pre-scheduled class times" (p. 789), expand the scope of the content learned, make learning more interactive, and connect formal and informal learning.

Although researchers have acknowledged the reality of informal learning through social media, much of the literature continues to emphasize implications for formal educational settings. For example, in the wake of the COVID-19 pandemic, researchers have suggested that social media may be useful for supporting teachers' transition to emergency remote teaching (Trust, Carpenter, Krutka, & Kimmons, 2020) and pedagogical activities during that teaching (Greenhow & Chapman 2020; Aguilar 2020). Acknowledging the richness of students' informal learning and asking what the implications are for schools is a long-standing part of research informed by a *literacies* perspective (e.g., Gee 2003). For example, Greenhow and colleagues' (2019) question "What should be the role of social media in education?" draws on learners' broad use of social media across levels of formality to support intentional designing of social media activities into a broader, formal framework. Similarly, Galvin and Greenhow (2020) have

suggested that because students are clearly "writing online prolifically" (p. 57), it is only natural to ask what the implications are for formal classroom settings.

Research Context

As previously noted, the context for this study is the #bac2018 Twitter hashtag, which is associated with the 2018 baccalauréat exams for secondary students in France. Before explaining these exams, we first note the significance of the French setting of this research. While research on social media and education documents learning in many countries, the United States continues to receive a disproportionate focus (Greenhow et al. 2020). Fully understanding how social media and learning interact—and understanding how broader social and cultural factors interact with both—requires consideration of this phenomenon within a range of geographical and cultural contexts.

The baccalauréat (or *bac*) refers both to a diploma recognizing French students' completion of their secondary studies and to the series of exams required to earn that diploma. There are multiple versions of the bac (general, technical, and vocational), each of which offers different *tracks* based on combinations of weighted exams on different topics. Earning the bac is typically required for beginning university studies or entering certain professions.

The bac's importance extends well beyond being an academic qualification. El Atia (2008) describes the bac as culturally significant—an "artifact of France" that dates back to Napoléon Bonaparte (p. 144)—and as socially important—a "symbol to the transition from adolescence to adulthood" (p. 144). The recognized importance of these exams can be seen in the December 2018 "blockading" of over 180 high schools by students upset over proposed reforms to the bac (Bordas 2018).

Given the importance of the bac in France, it is not surprising that each year's baccalauréat exams have their own Twitter hashtag, with #bac2018 organizing the conversation around the 2018 bac. For Le Douarin (2014), the pressure of the bac makes their students' use of digital technology during their final year particularly interesting. Indeed, just as Le Douarin's work found that students use technology to support both their studies and their social relationships, we expected that the #bac2018 Twitter hashtag would serve a range of different purposes.

Present Study

In this study, we carried out an exploratory examination of the #bac2018 Twitter hashtag as a site where French secondary students—and other stakeholders—employed *literacies* (i.e., meaningful practices developed and used in a particular social context). In particular, we asked: *How are participants using the #bac2018 hashtag*? In keeping with our conceptual framework, we begin with the assumption that because those engaging with #bac2018 are participating in a given social context (in this case, a Twitter hashtag associated with the bac), they are necessarily learning something through engaging with meaningful practices (in this case, tweets) associated with the context. Our purpose, therefore, is to provide a preliminary documentation of what #bac2018 participants are *doing*, explain what they are therefore *learning*, and suggest what this *implies* for education broadly.

Method

In this section, we describe our use of digital research methods to collect data from the #bac2018 hashtag and our use of more traditional methods to analyze those data.

Data Collection

In keeping with growing trends in educational technology research (e.g., Authors 2021; Gleason 2013, 2018; Kimmons & Veletsianos 2018), we focused this study on digital data retrieved directly from social media platforms. We used Twitter Archiving Google Sheets (Hawksey 2014) to collect tweets containing the #bac2018 hashtag during the month prior to the beginning of the exams on 18 June. This process resulted in the identification of 8,523 *original tweets*, by which we mean the original instance of any tweet (including replies, quote tweets, etc.) as opposed to a repost of someone else's tweet (i.e., a *retweet*). In November 2018, we then used the *rtweet* package for the R programming language (Kearney 2018) to clean the data and collect useful metadata, including the total number of times each post had been retweeted up to that point. Because human analysis of all original tweets would have been impractical, we then considered sampling strategies.

We elected to limit our focus to the 1% of original tweets (n=85) that were retweeted the most as of November 2018 (when we collected tweet metadata). Our purpose in our sampling strategy was to most parsimoniously represent the breadth of actual activity in the #bac2018 hashtag. Because of Twitter's *retweet* function, our collection of original tweets is only a part of the overall story of that activity; indeed, research on other educational hashtags has shown that retweeting to one's own network is often a more common experience than posting original tweets (Authors 2017; Staudt Willet 2019). In our dataset, the average original tweet was reposted by 22.46 users and presumably read by yet more: considerable activity not represented within the original posts themselves. Furthermore, the median original tweet was actually not reposted by additional users, suggesting that only a relatively small number of tweets were reposted (a large number of times). Thus, randomly sampling original tweets would have provided a distorted view of #bac2018 activity, giving tweets that were seen, interacted with, and retweeted

thousands of times the same weight as a tweet that—conceivably—no one besides its author saw or interacted with.

In contrast, the top 85 most-retweeted posts represented 160,005 of the 199,953 demonstrable instances of the tweets in our dataset as of November 2018 (i.e., 8,523 original tweets and 191,430 retweets of them). Thus, coding the top 1% of original tweets was functionally equivalent to analyzing 80% of activity after accounting for retweets, ensuring broad representation of the phenomenon as actually experienced—and despite a large dataset. In short, if a Twitter user saw only one instance of one tweet containing the #bac2018 hashtag, there is a high probability that it was one of the tweets we coded.

Data Analysis

To facilitate analysis, the first author translated our data from French to English. The fourth author, a native speaker of French, checked and corrected translations and, when appropriate, provided contextual details.

We then began analysis by collectively reviewing the 85 tweets and—as a group of all four authors—discussing common themes. We used an inductive method of category development, in which categories were created on the basis of the textual (and media) properties of the tweets. This involved creating categories to put similar tweets together (treating each tweet as an indivisible unit) in line with qualitative data analysis (Lindlof & Taylor 2011). This also follows Gleason's (2013) example of a thematic analysis of tweets.

Based on that discussion, the first two authors then developed nine mutually exclusive codes that described how participants were using the #bac2018 hashtag. Using that coding scheme, they then individually assigned a single code to each tweet. Lindlof and Taylor (2011) note that the "major purpose of codes is to characterize the individual elements constituting a

category" (p. 248). Therefore, we sought to use these codes to locate the patterns in the tweets

we had categorized. The codes were mutually exclusive to ensure that we coded for key

meanings; to ensure that each tweet only corresponded with one code, we developed a detailed

code book that anticipated possible confusion and provided specific guidance.

To check for the reliability of the coding scheme, the first two authors coded all tweets.

The coders agreed 75.29% of the time and achieved a Cohen's kappa score of .72, which can be

understood as *substantial* (Landis & Koch 1977). Nonetheless, the coders resolved all

disagreements, combined two codes that proved too similar, and asked the other authors to

review and approve their work. The resulting eight codes (along with descriptions and examples)

can be seen in Table 1.

[insert Table 1 near here]

Results

In this section, we describe each of the eight ways that we saw participants using the

#bac2018 hashtag. In keeping with our conceptual framework, identifying ways that people

participate in this social context indicates ways in which learning may be happening—a subject

we will address in the Discussion section. Table 1 indicates the number of tweets that were

coded as relating to each practice, provides an example for each code, and indicates the number

of original tweets (and the corresponding number of total instances) associated with each code..

Sharing Notes

The most common code (in terms of original tweets) described tweets in which

participants shared resources, advice, or subject matter knowledge related to the bac. Notes

usually took the form of a *thread*—multiple tweets connected together to make an extended point

or share several resources. In these tweets, students exhibit peer teaching behaviors by compiling

study notes and tweeting links to them. Other tweets gave advice on how to prepare for the bac or what to expect from particular tracks within the bac. By using the hashtag to help each other comprehend the course materials, they extend typical studying behaviors to new, social media spaces. For example, in this tweet—"I see that #Bac2018 and more specifically the #BacPhilo are coming up 😄 As a result, I'm going to share with you the notes that allowed me to have a 18/20 in philosophy even though philosophy was synonymous with naptime for me during my senior year 👨‍🎓😇1 RT = ONE SAVED HIGH-SCHOOLER 🎓"—a former student who had taken the bac the previous year shared the notes to which he attributed his success on the philosophy exam. Notably, this particular tweet received 23,651 retweets, the highest number of any tweet in our sample. In this code, students learn the content in their own way while interacting with their peers in a familiar social media setting.

Slacking, Doubting, and Fearing

The second-largest code described tweets that expressed concern about an individual or a group's failure or lack of preparation for the exams. One such tweet asked, "Am I the only one who's studying but feels like they aren't getting anywhere? #Bac2018." It seemed the student came to Twitter to share their worry about exam preparation. Other tweets were often humorous. For example, some students joked about how little they knew going into the bac or even that they were procrastinating by reading tweets about the bac instead of studying for it. However, they could also be much more serious, with one student expressing seemingly real concern about disappointing their parents.

Requesting Retweets

This code described tweets containing variations of the message "retweet or you won't pass your bac." The retweets were also used as a way of sharing luck among the students, as in

this tweet, "RT for good luck #bac2018. We also used this code to designate tweets that commented on or criticized this meme. As noted in Table 1, this meme was relatively successful, making up more total instances than any other category.

Preferring Topics

In these tweets, students identified topics that they would prefer to have or not have on their test. The bac is divided into different subjects depending on a student's track, and a number of topics may appear for each subject. For example, "I hope it'll be a color-by-numbers on the math bac #Bac2018" is a humorous riff on this practice, though a more serious request might suggest that the history-geography exam should not include maps.

Complaining

Tweets that expressed frustration with the bac exams or with other students were also present in our data. Some of the complaints were about the structure of the test, including the subjects offered or the way that they were weighted. Other tweets were more general complaints about the demands of the test (e.g., "damn, who invented the History/Geography test, they're a real SOB, when is someone capable of learning more than 20 chapters and 7 maps anyway #Bac2018"). There were several tweets complaining about the history-geography exam, mostly about the difficulty in studying for it. Some tweets were also resentful complaints about high-performing students.

Connecting with Bac Heritage and Experience

This code encompasses tweets that acknowledge or demonstrate the role of the bac in French society. Indeed, it is a testament to the importance of the bac—and its Twitter hashtag—that several high-profile members of French society, including Jean-Michel Blanquer (then-Minister of National Education) and, as seen in Table 1, Jamy Gourmaud (a well-known

educational television presenter). Some of the tweets also mentioned aspects of bac history or commented on the events that defined the bac experience. For example, one student tweeted a 1990 video of students saying they hadn't studied much, commenting that little had changed since. They noted, "happy to see that in 28 years of Bac nothing has changed for students about studying lmao" Participants also commented on changing calculator policies and on the difficulty of the registration form to be completed before writing the test. All these details showed that these students recognized their participation in the bac as an experience common to students across the country and throughout its history.

Joking

This code was for tweets that were judged as intending to amuse the reader—without fitting into any other code. Participants regularly used humor in their #bac2018 tweets, but tweets coded in this way did not, for example, show doubts or complain about the bac in a humorous way. Rather, they focused uniquely on humor, including memes, videos, or jokes about preparing for and taking the test. For example, one tweet—"Kindergarteners, let me give you some advice: start studying history/geography #bac2018"—was a humorous take on perceptions of insufficient preparation time. Another humorous tweet embedded an ad from a French company that used a joke product—water bottles with baccalauréat cheat sheets printed on the labels—to connect with the bac season and thereby drum up publicity. Although there were relatively few of these tweets, Table 1 shows that they enjoyed collective popularity in terms of total instances.

Showing Awareness of Time

Although it was the smallest code emerging from our analysis, time was another factor for people tweeting about the 2018 bac exams. These tweets indicated disbelief on how close the

test was to the date of the tweet, usually out of excitement or dread. Some tweets also included nostalgia, stemming from students' recognition that their high school years were almost at an end. For example: "Every year you see others take the BAC then comes the time when it's your turn #bac2018." This awareness of time alludes to their seeing the bac as a rite of passage and the culmination of the high school experience, a necessary part of their education and culture.

Discussion

If participating in Twitter conversations can be considered a kind of learning (Gleason 2013, 2018), then identifying the conversations students—and others—are participating in will indicate *what* they are learning. In the following sections, we categorize our findings into broad categories of learning. That is, we summarize what #bac2018 participants are *doing* and explain what they are therefore *learning*—which, in conjunction with our literacies framework, may not correspond with the way learning is often conceived of in classrooms. However, throughout these sections, we suggest what this *implies* for education; in particular, we articulate the benefits for teachers of both 1) acknowledging the existence of several kinds of learning and 2) considering how social media may support each of those kinds of learning.

Academic Learning

Given that #bac2018 was a Twitter hashtag focused on formal exams, it should come as no surprise that it served as a space for studying formal academic subjects. That is, the information shared and literacies practiced in the #bac2018 space included those associated with the content areas defined and delimited by the French education system. This mirrors Le Douarin's (2014) description of bac-takers' uses of online and digital technologies to supplement their formal lessons. Indeed, the most frequently-appearing activity in terms of original tweets—*sharing notes*—typically involved students' taking notes or resources that they had collected in

schools and sharing them with other students via the Internet. That this practice is the most common among the most widely shared #bac2018 tweets makes it especially significant. While most internet users are familiar with the concept of online content "going viral" (i.e., being widely shared), one would be forgiven for not expecting a student's photographed philosophy notes to be shared over 20,000 times.

Participants' use of #bac2018 for academic learning illustrates the way the way that social media can bridge formal and informal learning contexts (e.g., Greenhow & Lewin, 2016). Therefore, teachers need to be cognizant of the potential social media holds for their students' learning experience. In the case of the data that we have collected, students have shown that they extend their acquisition of disciplinary literacies from the classroom into social media spaces. Teachers may make the most of this potential by *being informed* about where students are learning online. They may ask students what social media spaces they find useful for learning about certain topics and then engage with those spaces. This does not mean they have to engage with those spaces in the classroom; rather, if teachers research and review the activity happening within those spaces, they will be able to recommend useful spaces to their students, warn them against unreliable spaces, or otherwise explicitly discuss potential connections between classroom learning and learning through social media.

However, it is also possible to extend students' learning from social media spaces into the classroom. For example, teachers can engage their students in discussion about what they are learning through social media. This is a great opportunity to start conversations in the classroom space about what information students are consuming and sharing. For example, if a misconception on a topic is trending, the opportunity for a teachable moment presents itself. Whatever approach they take, teachers should be cognizant that social media platforms are not a

"this" or "that" mindset. Instead, they can view social media platforms as a complementary tool for information sharing and seeking. In particular, content from social media threads should be shared in the classroom to enhance and supplement—not set—the curriculum.

Social Learning

Our findings also demonstrate the presence in #bac2018 of learning that is associated with schooling but distinct from curriculum. As Selwyn (2007a, b) noted, social media spaces can support the "learning of being a student, with online interactions allowing roles to be learnt, values understood and identities shaped" (Selwyn 2007b, p. 4). For example, although *Preferring Topics*, *Complaining*, and *Showing Awareness of Time* are not likely to be formally taught, they are undoubtedly a key part of the student experience. Furthermore, participation in #bac2018 may be fostering a sense of student connectedness (see Dwyer et al. 2004; Authors 2016) or community that extends beyond the classroom walls to a shared public, mediated space. Students engaging in practices such as *Joking* and even *Slacking, Doubting, and Fearing* are connecting (and commiserating) over a typical student experience being shared across the country.

Although teachers are often—and understandably—focused on the academic learning described in the previous section, there are benefits to recognizing the existence of *social learning* (and its connections to social media). The social learning evident in our data and discussed by Selwyn (2007a, b) is less about becoming an effective student and more about sharing the student experience. However, merely recognizing a concept of *learning to be a student*—independent of learning academic content—may inspire teachers to dedicate some of their class time to teaching *school literacies* (study habits, time management, etc.) that are absent from the syllabus but nonetheless key to learning.

Furthermore, teachers may also benefit from encouraging students to find their own social media spaces in which to share their experiences with each other, even if they would not approve of all of all of the complaining and joking happening therein. Indeed, Greenhow and Chapman (2020) suggest in the context of pandemic-driven emergency remote teaching, "it can be difficult for students to feel a sense of camaraderie and community in formal learning management systems which emphasize content delivery and are controlled by their teacher" (p. 344), but that social media may be helpful for recreating on the internet student practices that would usually exist in classrooms, school hallways, and cafeterias. Linvill, Boatwright, and Grant (2018) have also noted that students have used social media as a space for expressing *dissent* about instructor ideology; while teachers and students may not wish to adopt this informal practice formally, there may yet be ways to take inspiration from students' use of social media in this way.

Teachers should also recognize that social learning in the sense of adopting a role in a social context is not limited to the role of students in the context of schools. In Gee's (2003) discussion of learning as the acquisition of literacies, he suggests that classrooms are too often focused on the acquisition of facts (e.g., the mere memorization of the periodic table) and too rarely focused on the adoption of the identity associated with a discipline (e.g., thinking and acting like a scientist would). Not only would teachers' recognition of social learning help make this shift in the classroom, but social media may prove to be an important tool for teachers in this vein. For example, Greenhow and colleagues (2019) suggest that "social media can enhance students' *connection to communities*" in which they "explore identities" (p. 180). Similarly, Chapman and Marich (2021) discuss how teachers have used Twitter to help students in the social learning of the role of (digital) citizen (see also Greenhow & Chapman 2020).

Cultural Learning

Cultural learning is another activity that is present in schools even if absent from the formal curriculum. As previously described, the bac is more than just a typical student experience—it is closely tied to the French Republic itself. Indeed, tweets that we coded as *Connecting with Bac Heritage and Experience* involved news stories about the delivery of the exams to local high schools, satirical bac prompts mocking French president Emmanuel Macron and his agenda, and well-wishes to students from a prominent television presenter. Prinsloo (2014) notes that human practices often "draw on background know-how, habits, and disposition that often are not based on or explicitly communicated as beliefs or rules" (p. 487)—these tweets show how the #bac2018 hashtag served as a place for acquiring and demonstrating the background knowledge needed to be recognized as a graduate of a French *lycée*.

In addition to *learning to be French*, our data ==suggests== that participants were also *learning to be on the internet*. The *Requesting Retweets* practice can be understood as a *meme*, or a "group of digital content units sharing common characteristics of content, form, and/or stance" (Shifman 2014, p. 176). This particular meme bears similarity to Boyer and Liénard (2006)'s description of cultural rituals "intuitively recognizable by their stereotypy, rigidity, repetition, and apparent lack of rational motivation" (p. 1). Even though students understand that retweeting a post will not affect their performance, there remain compelling cultural reasons to participate in the ritual. Furthermore, some of the tweets in this code (and others) made reference to memes that originated elsewhere on the internet but were repurposed to make sense within the context of the bac, thereby demonstrating familiarity with online culture.

As with the social learning we have previously discussed, a teacher who conceives of their job as primarily focused on the acquisition of academic content might be forgiven for

overlooking *cultural learning* as a phenomenon that happens within the classroom. Yet, an American teacher considering the (presumably) unfamiliar experience of French students taking the baccalauréat would likely have little trouble recognizing particular ways in which that educational experience is embedded in that cultural context. Just as El Atia (2008) describes the bac as an "artifact of France" (p. 144), teachers may benefit from critically considering how *what* they teach and *how* they teach it are artifacts of local culture—and, if needed, making necessary adjustments.

Likewise, our findings demonstrate that social media activity is also culturally-situated—that is, full understanding of the posts that we studied required familiarity with French culture. Teachers addressing culture in the classroom—perhaps to explicitly challenge or expand beyond the influence of local cultures—may therefore find social media to be a valuable tool. For example, Eamer, Hughes, and Morrison (2014) found one social media platform "enabled students to easily share details about their cultural heritage… bringing an acute awareness to the diversity in the class" (p. 66). Alternatively, Chapman and Marich (2021) commented on two teachers' uses of Twitter to connect their students with (respectively) people in other parts of the country or across the world. Finally, while internet culture may not be the focus of any formal curriculum, teachers who can find ways to relate it to the curriculum may be able to better connect with students.

Future Research

While a *literacies*-focused conceptual framework acknowledges many kinds of learning, it also acknowledges that not all of these kinds of learning are useful or desirable (e.g., Galvin & Greenhow 2020; Gee 2003). Although this exploratory study has established #bac2018 as a site where academic, social, and cultural learning appear to be taking place, further research is

needed to determine the extent to which participation in this space supports the learning outcomes valued in formal schooling. Most pressingly, educators may wish to know whether participation in informal note-sharing spaces leads to higher achievement on major assessments like the bac or if the test advice shared on social media is of any real value. However, our findings have highlighted a number of practices that educators could profitably investigate with a narrower focus and a longer timeframe—and even suggest other potential avenues of exploration. For example, given students' expressions of school-related doubt and fear through #bac2018, researchers might consider whether and how *emotional learning* happens through social media.

Conclusion

Twitter activity surrounding the French *baccalauréat* in the month leading up to the exams provides a compelling example of what it means to learn through social media. Students used this platform to exchange notes and resources as they continued their studies, but also engaged in activities that helped them develop *literacies* (i.e., meaningful practices) valued in social and cultural contexts. The co-existence of these different kinds of learning underlines the importance of broader views of learning—especially when considering social media. The #bac2018 hashtag serves as a reminder that learning may be academic, social, or cultural—not only on social media, but also in classrooms.

Acknowledgements

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Table 1

Description and Distribution of Codes

Code	Description	Example	Number of Original Tweets	Number of Total Instances
Sharing Notes	Tweets that give advice, share information, or link to notes.	L-track students of Twitter who are taking the bac this year ... seeing as I'm nice I'm going to give you my citations (with some plans/analyses if I have them) + some advice for the #BAC2018 [embedded photo of notes]	18 (21.18%)	38,620 (24.14%)
Slacking, Doubting, and Fearing	Tweets, either humorous or serious, that express concern about performance on the bac or that	Before the test, they'll try to reassure us with: "Don't worry if you worked hard during the year, there's no reason you wouldn't pass the bac!!" except that makes things even worse because we	13 (15.29%)	11,296 (7.06%)

		know we didn't do anything		
call attention to how little work a student has done or is doing to prepare.		all year #bac2018		
Requesting Retweets	Tweets that invite other participants to retweet the original post, tying the act of retweeting to success or failure on the exam.	RT this tweet, or you won't pass your #Bac2018 🙄. You've been warned, remember this tweet!	11 (12.94%)	47,640 (29.77%)
Preferring Topics	Tweets that identify topics that students would prefer to have or not to have on their test.	#Bac2018 The perfect prompt: Major subject in history: Memories Minor subject in geography: Map of Brazil	10 (11.76%)	11,803 (7.38%)

Complaining	Tweets that express frustration with the bac or with other students.	Damn but I don't see the point in studying 20 history-geography essays just for one of them to show up in a prompt I'm sick of this bac #bac2018	10 (11.76%)	8,245 (5.15%)
Connecting with Bac Heritage and Experience	Tweets that acknowledge the bac's role in French society and history or comment on bac norms and practices.	#baccalauréat candidates, ready to give everything you've got this week? Break a leg, everybody ! 🤓 #Bac2018 [embedded video from a famous educational TV presenter, commenting on the history of the bac and wishing students good luck]	9 (10.59%)	11,918 (7.45%)
Joking	Tweets that are humorous and do not fall into other categories.	Girls, there's no point in studying for the bac, the future is in marrying a rich guy. #bac2018	8 (9.41%)	26,716 (16.70%)

| Showing Awareness of Time | Tweets that comment on how close the bac is, usually out of excitement or dread. | remember all the "the bac is in 6 months", "the bac is in 3 months"... lol THE BAC IS TOMORROW #bac2018 | 6 (7.06%) | 3,767 (2.35%) |