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Understanding micro-processes of community building and mutual learning on Twitter: a ‘small data’ approach

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This article contributes to an emerging field of ‘small data’ research on Twitter by presenting a case study of how teachers and students at a sixth-form college in the north of England used this social media platform to help construct a ‘community of practice’ that enabled micro-processes of recognition and mutual learning. Conducted as part of a broader action research project that focused on the ‘digital story circle’ as a site of, and for, narrative exchange and knowledge production, this study takes the form of a detailed analysis of a departmental Twitter account, combining basic quantitative metrics, close reading of selected Twitter data and qualitative interviews with teachers and students. Working with (and sometimes against) Twitter’s platform architecture, teachers and students constructed, through distinct patterns of use, a shared space for dialogue that facilitated community building within the department. On the whole, they were able to overcome justified anxieties about professionalism and privacy; this was achieved by building on high levels of pre-existing trust among staff and by performing that mutual trust online through personal modes of communication. Through micro-processes of recognition and a breaking down of conventional hierarchies that affirmed students’ agency as knowledge producers, the departmental Twitter account enabled mutual learning beyond curriculum and classroom. The significance of such micro-processes could only have been uncovered through the detailed scrutiny that a ‘small data’ approach to Twitter, in supplement to some obvious virtues of Big Data approaches, is particularly well placed to provide.

Keywords: Twitter; community of practice; digital story circle; informal learning; social media; small data

Introduction

Unlike other social network sites, such as Facebook or LinkedIn, Twitter was not originally intended primarily as a platform for community building, but as a tool for information dissemination (Gruzd, Wellman, & Takhteyev, 2011). However, an emerging body of research has been concerned to explore the possibility of communities forming on Twitter (Erickson, 2008; Gruzd et al., 2011; Huberman, Romero, & Wu, 2009; Java, Song, Finin, & Tseng, 2007; Loureiro-Koechlin & Butcher, 2013; Zappavigna, 2011); the platform’s particular character as

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a conversational medium (boyd, Golder, & Lotan, 2010; Bruns, 2012; Gillen & Merchant, 2013; Honeycutt & Herring, 2009; Zappavigna, 2011); the forms of identity construction and self-presentation that it induces (boyd et al., 2010; Marwick & boyd, 2010; Murthy, 2012; Page, 2012); and the ways in which it might support the construction of shared values and meanings (Rieder, 2012; Zappavigna, 2011; Zhao & Rosson, 2009).

This article contributes to this emerging field of research on ‘social life on Twitter’ by presenting a detailed case study of how teachers and students at a sixth-form college in the north of England used Twitter to help construct a ‘community of practice’ (Wenger, 1998). It takes the form of a detailed analysis of a departmental Twitter account, drawing on Twitter data and interviews. This emerged from a broader action research project that focused on the ‘digital story circle’ as a site of, and for, narrative exchange and knowledge production (Couldry et al., *in press*). Both the fieldwork context of our study and our interest in individual and community agency through storytelling allow us to approach Twitter from a ‘small data’ perspective, which contrasts with much of the literature about this platform.

Over 18 months, we worked with college staff and students to develop, implement and evaluate a series of interventions based on introducing different digital technologies as supports for narrative exchange and mutual learning. Our concern was not simply to incorporate such digital technologies into the curriculum, but more broadly to understand how they might contribute to opening up spaces for dialogue, in which students and teachers alike could be recognized as citizens contributing to ‘matters of common concern’ (Benhabib, 1996, p. 68). During our fieldwork we organized workshops for students and staff, worked with teachers to develop student briefs that incorporated digital technologies, and organized special one-off events including a storytelling evening and a Twitter event linked to the launch of a college radio station.

The departmental Twitter account that is the subject of this article developed alongside these more structured interventions. It came to our attention about halfway through the fieldwork and stood out as a seemingly successful example of dialogue and informal learning beyond the classroom. Intrigued by our initial observations and the enthusiasm of staff involved, we decided to track the development of this Twitter account, believing it could provide valuable insights into community building and mutual learning. Our interest is in social practices and processes; that is, the ways in which Twitter might be used to signal, reinforce and/or reconfigure already existing social relationships among teachers and students.

Community building, identity formation and learning on Twitter

Twitter’s predominantly public orientation and the asymmetrical character of its follower/followee relationships – any user can ‘follow’ any other, without the need for, or expectation of, reciprocity (Marwick & boyd, 2010) – make it a seemingly unlikely platform for forming or maintaining close social bonds, yet research has explored a number of ways in which Twitter might facilitate this. One strand has focused on the topology of community formations on Twitter, using mostly quantitative metrics to analyse network structures, degrees of connectivity, and so on. Java et al (2007, p. 60) define community on Twitter as ‘a group of nodes more densely connected to each other than to nodes outside the group’, while Gruzd et al. (2011) use a combination of quantitative (and some qualitative) measures to test Twitter against well-established definitions of ‘imagined community’ (Anderson, 1991), ‘virtual settlement’ (Jones, 1997) and ‘sense of community’ (McMillan & Chavis, 1986). Meanwhile Loureiro-Koechler and Butcher (2013) develop a three-layered conceptual model for community formation and convergence on Twitter according to which users gradually move from following others based on shared interest to friendship groups with close ties developed through offline and online interactions.

While such studies focus primarily on the *form* that communities take on Twitter, others have been more concerned with the construction of shared values and meanings, looking at how social bonds are *achieved* through users' imaginative adaptation of platform-specific communicative conventions. boyd et al. (2010) examine how the practice of retweeting 'contributes to a conversational ecology in which conversations are composed of a public interplay of voices that give rise to an emotional sense of shared conversational context' (p. 1), while Honeycutt & Herring (2009) analyse the use of the @ symbol for constructing conversational coherence in an otherwise 'noisy' environment. Zappavigna (2011) explores how hashtagging, by rendering Twitter talk *searchable*, enables users to 'affiliate with a copresent (Goffman, 1963), impermanent, community by bonding around evolving topics of interest' (800). In such a perspective, affiliation is not just about connecting; it is a semiotic activity concerned with meaning-making. Rieder (2012) demonstrates how shared meaning is both the precondition and outcome of the work that Twitter users do, using the concept of 'refraction' to show how Twitter users draw on pre-existing cultural 'webs of significance' (Geertz, 1973) to interpret an issue, collectively producing shared values and understandings.

Our focus here is somewhat different: rather than examining how communities form *on* Twitter, we are interested in how an already existing community of teachers and students *use* Twitter to strengthen social bonds in ways that both presuppose and remediate existing 'offline' relationships.

There is a growing literature on the use of Twitter in education. Research in this vein has, however, tended to focus on the effectiveness of Twitter as a tool for formal learning, for example to improve linguistic competency (Vazquez Cano, 2012), memory of concepts (Blessing, Blessing, & Fleck, 2012) or the delivery of large-lecture courses (Elavsky, Mislán, & Elavsky, 2011). Where studies have explored the use of Twitter to stimulate more informal learning processes and social relationships (e.g. Junco, Elavsky, & Heiberger, 2013; Junco, Heiberger, & Loken, 2011; Kassens-Noor, 2012), these have still tended to be framed primarily as a means to improving learning outcomes. Our interest is broader: to explore whether and how Twitter can sustain a community among teachers and students that supports collective forms of learning beyond curriculum and classroom. In doing so we take cue from the tradition of critical pedagogy, which emphasizes dialogic forms of learning and takes students' experiences as a starting point (Freire, 1972; Giroux, 2001).

Key concepts

We employ two key concepts as heuristic devices: 'community of practice' (Wenger, 1998, 2000) and 'digital story circle' (Couldry et al., *in press*). Founded on an understanding of learning as social participation – an 'encompassing process of being active participants in *practices* of social communities and constructing *identities* in relation to these communities' (Wenger, 1998, p. 4, emphasis in original) – the concept of 'community of practice' is helpful because it understands community not simply as a network of connections or as based on similar interests, but as something that is *achieved* through sustained interaction and shared practice oriented towards common goals. Members of a community of practice are bound together through a sense of *joint enterprise*, establish relationships of *mutuality* through their interactions and produce a *shared repertoire* of communal resources (Wenger, 2000, p. 229). This 'social definition of learning' (Wenger, 2000, p. 226) provides a framework for understanding teachers' and students' use of Twitter as social practice oriented towards collective learning and identity formation, as opposed to *individual* identity (e.g. Marwick & boyd, 2010; Murthy, 2012).

The notion of the *digital story circle* was at the heart of our broader research project, which aimed, through multi-method action research involving a number of partners, to explore the social and digital conditions for narrative exchange and knowledge production. The concept of the story

circle has been used by proponents of digital storytelling (Hartley & McWilliam, 2009; Lambert, 2013; Lundby, 2008; Thumim, 2009) to describe workshops in which groups of people meet to produce and exchange digital stories. Such digital storytelling provides a means for people to 'give an account of themselves' (Butler, 2005; Cavarero, 2000) and be recognized as having 'a constructive contribution to make to a concrete community' (Honneth, 2007, p. 139). Recognizing the inherently combinatorial nature of digital communication and the multiple forms that digital narratives may take (particularly in a medium like Twitter), we wanted to explore what a *digital* story circle – understood as 'a set of agents, processes and infrastructural conditions that enable narratives to consistently emerge and be acknowledged through exchange and mutual interaction' (Clark et al., *in press*) – might look like. The socially embedded use of Twitter (a medium with its own peculiar conversational properties) provides a rich testing ground for exploring the conditions for, and character of, a digital story circle as well as its potential to support mutual learning.

Methodology

Given its network structure and the vast quantities of naturally occurring data that it (ostensibly) makes publicly available, Twitter lends itself to the kinds of analytical approaches that have characterized the so-called turn to Big Data in the humanities and social sciences. Operating within this paradigm, Axel Bruns and colleagues have sought to establish systematic quantitative methodologies for studying Twitter based on standardized metrics (Bruns, 2012; Bruns & Burgess, 2012a, 2012b; Bruns & Stieglitz, 2012, 2013). Combined with network analysis and data visualization techniques, such metrics can be used to map out large-scale communication patterns and network structures.

Although undoubtedly useful, Big Data approaches are also problematic. boyd and Crawford (2012) outline a set of 'critical questions' for Big Data, two of which are particularly relevant here. First, Big Data changes the definition of knowledge. By privileging large-scale quantitative approaches, it sidelines other forms of analysis and limits the kinds of questions that can be asked: this has important normative and political consequences. Second, 'Big Data loses its meaning when taken out of context' (670). Although network analysis can reveal connections and patterns, it has little to say about their meaning and context; nor are such networks necessarily *equivalent to* personal and social networks (boyd & Crawford, 2012; cf. Mahrt & Scharkow, 2013; Rieder, 2012) – a limitation that also applies to studies that define 'communities' on Twitter in terms of their morphology.

Developing in parallel is an eclectic field of *qualitative and mixed methods* research, including studies that use linguistic and semiotic analysis (Gillen & Merchant, 2013; Zappavigna, 2011, 2012), interviews with Twitter users (Marwick & boyd, 2010; Zhao & Rosson, 2009) and content analysis (Honeycutt & Herring, 2009; Lasorsa, Lewis, & Holton, 2012; Ross, Terras, Warwick, & Welsh, 2011).

The methodology adopted for our study can be situated within this emerging field of 'small data' research – combining basic quantitative metrics, close reading of selected Twitter data and qualitative interviews – and was informed throughout by our wider action research-based fieldwork with the college. As part of this wider project, we conducted around 70 hours of participant observation alongside a total of 22 staff interviews, four student focus groups and 18 individual student interviews. Of these, one student focus group (with two boys and two girls aged 17–18) and two staff interviews (with a teacher and the head of department) focused specifically on the departmental Twitter account.

We analysed a corpus of 4546 tweets, captured from the home page of the departmental Twitter account ('CollegeDept' hereafter) using the NCapture add-on for NVivo, containing

tweets and retweets made by CollegeDept between 10 March 2012 and 10 March 2013. This was supplemented by a second dataset captured using the search string 'From:CollegeDept OR @CollegeDept', containing a total of 1753 tweets sent from and to this account between 24 October 2012 and 10 March 2013. The shorter time span covered by the second data set is due partly to limitations of the Twitter API (this only returns tweets sent in the last seven days in response to search queries, whereas up to the last 3200 tweets can be captured from the home page of any given user). An additional obstacle was a technical problem with the NCapture application, which prior to 24 October 2012 prevented the capture of search results. These obstacles are illustrative of the many constraints faced by researchers seeking to capture publicly available Twitter data (boyd & Crawford, 2012). Our Twitter data set is therefore partial, as we only have complete access to tweets sent by students to CollegeDept from 24 October 2012. However, contextual data indicates that teachers carried out a stated intention (interview with teacher) to retweet tweets received from students; therefore we can plausibly claim that our larger data set provides a reasonably comprehensive view of staff–student interactions.¹

Data on followers and interactions with the CollegeDept account suggest that this initiative reached a significant proportion of the approximately 475 students in the department. At the beginning of our data collection period, the CollegeDept account had 221 followers, increasing to 340 by 10 March 2013. Although we cannot with complete accuracy ascertain the identity of these followers, it is reasonable to assume that the majority were students. Between 24 October 2012 and 10 March 2013 (the period covered by our second data set), a total of 662 tweets mentioning @CollegeDept were sent by 171 users. Although a core group of students was more engaged than others (the 10 most active users sent 38% of tweets), a sizeable number (86) sent two or more tweets, indicating a degree of interaction. Using NVivo to conduct initial quantitative analysis, we established the total number of tweets per month and week as well as the proportion of tweets containing @mentions, #hashtags and URLs, and identified the most active users and most frequently used hashtags. These metrics provided the grounds for selecting data for more detailed qualitative analysis. Adopting a purposive, theoretically informed sampling approach, we first chose to focus on particular weeks that could be seen as either typical (weeks with an average number of tweets) or exceptional (weeks with a higher than average number of tweets), our assumption being that this would provide insights into both routine and unusual communication patterns. Eight separate weekly subsets (four average, four high-volume; each containing between 97 and 250 tweets) were extracted from NVivo and subjected to close reading. Clues (Alasuutari, 1995) arising from this initial analysis were used to search out other, related interactions. Additionally, we identified particular Twitter exchanges on the basis of information provided in interviews, and were thus able to triangulate the two types of data.

This particular approach to sampling and analysis was chosen over more conventional methods of qualitative Twitter research such as extracting a random sample of individual tweets and coding such tweets to establish broader categories. Our interest in understanding *context*, *narrative exchange* and *process* precluded such an approach. We attempt instead a 'thick description' (Geertz, 1973) to provide nuance and richness not available from a Big Data perspective.

Community building

The CollegeDept Twitter account was opened in December 2011, at the end of the initial phase of our fieldwork, which had thus far involved a live storytelling event and a set of social media workshops, including on Twitter, for students and staff. The account was set up against a backdrop of increased interest in, and discussion of, the use of social media to extend interactions among students and staff beyond curriculum and classroom, yet it developed largely independently from our

more direct interventions. Interestingly from the perspective of our broader research questions, the staff and students who convened around the CollegeDept Twitter account seemed able to overcome many of the constraints that inhibited the development of digital infrastructures for narrative exchange at the college's institutional level (discussed further in Clark et al., *in press*). In this section, we explore some of the possible reasons for this, focusing on the use of the CollegeDept account to foster a sense of community and group identity.

Constructing a shared space

Initiated by the head of the college's Humanities department, the Twitter account was explicitly conceived as a tool for community building:

Our head of department, Lisa, came up with the idea as a way of lifting the profile of humanities in the college and also to create a sense of community [...] a place to discuss, share ideas [...], have discussions and talk that was beyond the four walls of the classroom. (Robert, philosophy teacher)²

Even among a spatially contiguous group of teachers and students, digital technologies can extend the spatio-temporal reach of social relations, so contributing to community formation. In a large department, whose members do not all interact face-to-face on a regular basis, the creation of a mediated communication space enables a degree of visibility and mutual awareness not achievable through face-to-face communication alone (Thompson, 1995). Conceived from the outset as a collective effort, the CollegeDept account was maintained by a core of four enthusiastic teachers, who deliberately used this rather than individual Twitter accounts to interact with their students – even when such interactions were ostensibly only relevant to a particular class or subject group. In its simplest form this involved sending tweets directed at specific subsets of students:

GOOD luck to our Sociology crew this afternoon, go and smash that exam!!
AS Economists – Beijing pollution at hazard level | @scoopit <http://t.co/DmDALrPP>

As a consequence of this, students who followed the CollegeDept account were regularly exposed to information and interactions that were *not directly related* to their subject area. While at first glance this might be perceived as irrelevant 'noise', such tweets seemed, on the contrary, to contribute positively to a sense of department-wide community:

They do just tell you about everything, not just philosophy, about all of the humanity departments as well. (Kate, student focus group)

[The Twitter account] makes the whole humanities department as a whole seem more like one whole unit rather than all the separate subjects. (Maria, student focus group)

The department-wide reach of the account also was perceived by staff as fundamental to its success – as Department Head Lisa emphasized, this facilitated a momentum that supported a sense of community:

We've not gone on individual Twitter accounts, we're combined, we're a joint effort and because of that it means that there is always something that you can talk about, and there's always something going on somewhere within the team.

Beyond single tweets to share information or offer encouragement, teachers and students also used the CollegeDept account to document and announce activities of particular student

groups. For example, a college geography trip to a nearby neighbourhood that had recently undergone regeneration, announced by a morning tweet linking to a group photo:

Off the Geographers go on their trip to [neighbourhood] [image URL]

This was followed during that day by 11 tweets from CollegeDept and 52 tweets from students (addressed to CollegeDept), all linking to photographs taken during the field trip, for example:

Me and @studentTwitterID admiring our new home #geographytrip @CollegeDept [image URL]

At one level, such Twitter reports of activities are acts of self-affirmation, a way of saying ‘We are here! Look at us!’ (cf. Murthy, 2013, pp. 27–30). But the practice of documenting students’ experiences through a collaboratively produced Twitter ‘photo essay’ also can be seen as a means to strengthen bonds among the students involved, collective narration affirming group identity. Further, the public sharing of images via Twitter also served to *validate* students’ practice. Simultaneously public and oriented towards a specific group, this kind of communication highlights the peculiar parameters of community formation in networked publics (boyd, 2008, 2011).

Community in public?

‘Like many social network sites,’ Marwick and boyd (2010, p. 122) write, ‘Twitter flattens multiple audiences into one – a phenomenon known as “context collapse”’. Typically, a Twitter user’s followers will include diverse groups of people – acquaintances, friends, family members, colleagues – who they would not normally bring together offline. This presents the challenge of managing impressions and self-presentation while navigating multiple, overlapping audiences at once (Marwick & boyd, 2010) and complicates efforts to build community among a very specific group of people. The tension that this produces is particularly acute for teenagers who constantly have to negotiate the very different expectations placed on them by friends, parents and teachers (boyd & Marwick, 2011).

The challenges presented by ‘context collapse’ are compounded in a highly regulated educational institution where teachers felt anxious about maintaining professional boundaries between public and private. Such concerns were widespread across the college in the early stages of our fieldwork. As one teacher in a different department, who had set up her own individual Twitter account for communicating with her students, put it:

It’s often referred to as a safeguarding issue, that there’s potential for problem and, at the moment, I haven’t followed any students back. Students are following me but I’m not following them and I’m going to leave it that way. (Jean)

Some students expressed similar concerns, responding to a survey question aimed at gauging interest in using social media for learning-related activities:

I’d be happy to use apps and things but not social media that is my life out of college and I would like to keep it that way. (student)

For teenagers whose access to physical sites of gathering (such as bars, cafes and public spaces) is heavily restricted, social network sites provide valued spaces for peer sociality that are relatively free from adult interference (boyd & Marwick, 2011). Unsurprisingly, many teenagers are reluctant to open up such spaces to wider interactions, and ambivalent about social media’s incorporation

into institutional learning strategies, with their risk of wider surveillance. In the case of the CollegeDept Twitter account, efforts to negotiate ‘context collapse’ sometimes translated into students developing strategies to separate different realms and so avoid losing ‘kudos’ among their peers:

I had a few that said that they were going to tweet, ‘I’m only doing this for college purposes.’ [...]. We were doing something recently on successes and failures of Brezhnev, so I said it’s part of their work to wrap it together, to kind of tweet out some of the successes and failures of Brezhnev’s foreign and domestic policies. So some of them were doing it at like three in the morning or something like that, so people didn’t pick up on it. (Lisa)

On the whole, though, the CollegeDept account stood out as an example of students and teachers overcoming such concerns. An important precondition for this was pre-existing relations of trust among staff:

It was something that we agreed [...] in one of our meetings. We use it [Twitter] how you feel comfortable using it and that’s it. So if it’s just for work, that’s it, then that’s fine, but I think giving each of us ... it becomes our own personal point at which we’re comfortable with that time which we’re willing to engage. (Robert)

Also crucial for generating such trust (on the part of teachers) was the collective character of the CollegeDept account. In contrast to teachers who operate individual Twitter accounts (such as Jean, quoted above), staff in the humanities department benefited from a safety net provided by the collective responsibility and mutual accountability of a joint account. In this way (paradoxically) the *public and shared* character of Twitter enabled staff to feel comfortable engaging in more *personal and informal* modes of communication:

One of the reasons why I think we get a lot of followers is because we do share things which as a teacher, there has to be a professional divide between personal and work, and that’s a divide that has to be kept, but it’s also quite a grey area, but because all of us are signed into the Twitter feeds, and because there’s that accountability, you do feel that you’re able to share a holiday pic, or, ‘Look what happened to me today!’ [...]. They [students] love that and that’s what they like because it’s something personal that you’re sharing, but it’s the ability to be able to share it that’s safe. It’s completely public, it’s completely accountable, and it’s quite nice that isn’t it [...] they no longer see you as the teacher that’s going to tell you what to do. (Robert)

Personal modes of communication are fundamental to *community* building, creating bonds among students and staff that cannot be formed on the basis of institutionally defined relationships alone. We found many examples of teachers sharing seemingly mundane information and humorous quips via Twitter:

Lisa is having an exciting time. Bought a windscreen wiper haha
How do they get the olympic flame past customs? They confiscated my lighter once.

While easily dismissable as ‘pointless babble’ (Pear Analytics, 2009), such *phatic* communication (Jakobson, 1960) helps create a sense of informality and proximity, from which a community of *practice* can more broadly be built.

Micro-processes of recognition and pedagogy

How, concretely, can Twitter be used to establish the sense of joint enterprise, mutuality and shared repertoires that underpin a community of practice? Above, we saw how teachers and

students could overcome anxieties around privacy and establish a sense of collective purpose through personal modes of communication. We now examine in closer detail how the CollegeDept account enabled forms of learning beyond curriculum and classroom. This depended on micro-processes of recognition and a breaking down of conventional hierarchies.

At the basic level, the CollegeDept account provided a useful tool for extending learning into ‘real-world’ contexts. Teachers would regularly tweet links to relevant articles and web resources:

Geographers – This looks great. Change the way you want to see the world map, have a go yourself
<http://t.co/zgu97Lwh>

AS Medieval revision: Events and consequences of the Fourth Crusade quiz | @scoopit [[scoop.it URL](#)] (NF)³

Students would use Twitter in the same way:

@CollegeDept <http://t.co/70Ri7GkZ> – jaguar land rover to open plant in Beijing in 2015 – closer to marketplace/cheaper SEZ?

@BreakingNews: Magnitude 6.9 earthquake strikes off Japan’s northern island of Hokkaido – @USGS <http://t.co/ngTQLJdG> @CollegeDept

Twitter enabled students to take an active role as co-producers rather than just recipients of knowledge. Crucial to students sharing information in this way was teachers’ routine practice of *retweeting* all tweets directed at the CollegeDept account. This was a practical solution to limitations posed by Twitter’s information architecture: in contrast to Facebook, which offers the facility to create group pages where all members can leave comments for everyone to see, Twitter does not enable the creation of demarcated communication *spaces*. While most tweets are public, what each user sees on Twitter will be different; there is no central ‘place’ where related tweets from different users can be gathered.⁴ Consequently, tweets sent by students to @CollegeDept, while publicly searchable, do not appear on the CollegeDept Twitter homepage. Retweeting gathers students’ tweets in one place, making them visible to CollegeDept’s other followers:

I would just retweet whatever they put on there because [then] other people can get hold of it [...] I retweet them all so it comes on our timeline and students who follow us can find it easier. (Robert)

Retweeting, however, is about more than information sharing; it is also a means to ‘validate and engage with others’ (boyd et al., 2010, p. 1). The following typical exchange illustrates this:

Student1: Before China’s new leaders are announced, here’s a guide to the Communist Party’s governing structure <http://t.co/bSY37Q4k> @CollegeDept

CollegeDept: RT @Student1: Before China’s new leaders are announced, here’s a guide to the Communist Party’s governing structure <http://t.co/bSY37>

CollegeDept: @Student1 nice!

Here, a student has decided to share a resource relevant to his fellow students. Aware of the *shared repertoire* (Wenger, 2000, p. 229) established through his teachers’ habit of retweeting, the student knows that by directing his tweet at CollegeDept, teachers will share it with his peers. Attaching ‘@CollegeDept’ at the end of the tweet, the student catches the attention of a teacher, who retweets his tweet and immediately follows up with a further tweet praising his contribution. Retweeting can be seen as a form of public acknowledgement (boyd et al., 2010), and

(reinforced by the follow-up tweet) validates the student's status as a knowledge source. Such practices, whose very banality makes them both easily readable and repeatable, *enact* the process of acknowledging others as having 'capabilities of [...] value to a concrete community' that for Honneth (2007, p. 139) is core to recognition.

Such micro-processes of recognition signal a shift in emphasis from teaching to mutual learning. This was further reinforced by teachers encouraging students to share college work online:

Andy: I know my sociology teacher made us do these posters for a topic and then she kind of gave us an incentive to put them on Twitter so anyone else could see them [...]

Maria: It's a good way to share resources, isn't it, really?

(student focus group).

Twitter also was used frequently as part of classroom activities, typically for revision. Teachers adapted previous analogue activities (summarizing information into bite-sized chunks) by asking students to tweet revision notes:

When I do it I load up the CollegeDept website with a Twitter feed onto the screen as well, so that they can see their tweets popping up on the board, and they all comment on it, and it becomes a discussion then between the people in the room and what people are tweeting. And it also becomes a discussion between other classrooms, because I'll repeat the activity in other lessons and we can scroll through, especially if I hashtag up something like that, they can scroll through what other students and how other students have summarised or have expressed information. (Robert)

Students became strongly involved in such processes. An instructive example was philosophy students' use of Twitter to make revision notes. This started out as a classroom activity, with students summarizing key concepts in 140 characters or less, for example:

Spinoza: 'All men are born ignorant of the causes of things.'

Determinism: The claim that everything is part of a causal chain, subject to laws of nature: cause and effect so we are not free

Some students continued to tweet philosophy notes outside of college hours. Two even set up special Twitter accounts as parodies of philosophers and staged debates. Here are 'John Stuart Mill' and 'Immanuel Kant' in conversation:

Millismint: I love twitter, it gives me so much unrestricted and uncensored freedom. I could even lie, what do you think of that @Kant_Kool? #1-0

Kant_Kool: @Millismint try an universalise that! You'd not know If your followers were telling the truth if they said they liked you! #logic

Philosophy discussions also took place between students and teachers over Twitter. This is an extract from a debate over a few hours one Saturday afternoon:

CollegeDept: I think that Kant has quite a few fans among the [Department] student body. (NF)

Student2: @CollegeDept this surprises me, we can do better than Kant!

CollegeDept: @Student2 Why, what exactly are your objections to Kant's philosophy? (NF)

Student2: @CollegeDept i think his theory isn't coherent and almost erratic

CollegeDept: @Student2 Assertions are not persuasive. You need to make an argument. (NF)

Student2: @CollegeDept i'll do my best with the charac. limit! he's disillusioned, and he doesn't try to accomod. those who don't agree with theory

The Department had managed to create a space in which – despite anxieties about privacy and context collapse – it felt ‘safe’ for students not only to contribute information but also to debate, joke and even disagree with their teachers.

To enable this, it was important that teachers had set an example of how to communicate, drawing on their long-term trust established among colleagues. In contrast to many institutional Twitter accounts that are controlled to ensure a coherent brand identity, these teachers seemed to have little regard for projecting a unified institutional position. Evidencing how the Twitter account itself became a ‘safe’ dialogical *space*, teachers would debate amongst themselves whilst logged into the CollegeDept account:

- Lisa: Amusingly we’ll have conversations between us as well, sometimes, haven’t we?
 Robert: Yes, between members of staff, yeah.
 Lisa: The kids quite like it
 Robert: Yeah there’s been debates and arguments between members of staff over the Twitter
 Lisa: Yes, between @CollegeDept and @CollegeDept
 Robert: Which they [students] find amusing

In one exchange, which extended across 17 tweets and lasted over two hours, two teachers debated the virtues and flaws of Marxist economic analysis (see below). The debate begins with Lisa – well-known within the department for her left-leaning sympathies – posting a link to a YouTube video of a David Harvey lecture on ‘The Crises of Capitalism’ (1). Another teacher, Nathan, logs in half an hour later, contradicting Lisa’s position (2). Both teachers use the CollegeDept account, Nathan signing with his initials (NF) to distinguish his tweets from Lisa’s.

Their exchange (conducted on a Friday night, the normal party night for most young people and their teachers!) continues with a mixture of political arguments, factual references and gentle ‘digs’ – the two teachers clearly have had similar debates before and can predict each other’s responses. Crucially, *students* feel able to join in. We reproduce this exchange in full:

No.	Twitter ID	Tweet	Time
1	CollegeDept	Finally! A relatively easy to follow MARXIST explanation of the current economic crisis. Watch this, and comment http://t.co/dbUEOgTv	19:23:15
2	CollegeDept	@CollegeDept *sigh* I’ve lost count of the no. of times i’ve been told of the imminent collapse/crisis of capitalism since I was a kid (NF)	19:55:37
3	CollegeDept	@CollegeDept Cleverly put together vid though. (NF)	19:57:15
4	CollegeDept	Perhaps this will also add to the debate. A few years old but after the current crisis began. http://t.co/5KgDuVlt (NF)	20:07:07
5	CollegeDept	@CollegeDept *sigh* tired of neoliberalism and excuses for what went wrong and why the poorest should pay for their excessive greed :-)	20:54:20
6	CollegeDept	@CollegeDept Is this Lisa then? If you read the economist article you’ll find that globally there is less poverty than ever. (NF)	20:58:15
7	CollegeDept	@CollegeDept We should not be so euro-centric/developed world in our outlook. (NF)	20:59:55
8	CollegeDept	@CollegeDept I seem to remember Marx made this mistake and therefore got all of his predictions wrong *grin* :-)	21:01:17
9	CollegeDept	@CollegeDept if your suggesting that developing countries do better under free market capitalism, historical figures dont suport this.	21:13:28
10	CollegeDept	With interventionist strategies, the developing countries in Africa and Latin America grew (per capita) much faster than since the 1980s.	21:15:48

(Continued)

Table (Continued)

No.	Twitter ID	Tweet	Time
11	CollegeDept	1.6% vs. 0.2% in the case of Sub-Saharan Africa and 3.1% vs. 1.1% in the case of Latin America	21:16:51
12	CollegeDept	@CollegeDept Compared to what? Lack of free markets is the problem as Geographers can attest. Not a failure of markets but states (NF)	21:19:34
13	CollegeDept	@CollegeDept Meaning what? Where are these from and what are you comparing? (NF)	21:23:06
14	CollegeDept	As much as I like this I do need to go out for a bit :-)) see you later!	21:24:09
15	CollegeDept	Free markets are a myth, they do not nor have ever existed. Therefore can not be cited as a reason for economic failure.	21:25:43
16	CollegeDept	@CollegeDept Marxists would know all about myths. Not being a 'true communist' is also not an excuse for their total failure then. (NF)	21:27:21
17	CollegeDept	@CollegeDept See you later, it's always fun, lol. (NF)	21:28:23
18	Student3	@CollegeDept Like a small business, small economies need a start up, but it can't be sustained forever. Ergo, it isn't a...	21:36:34
19	Student3	@CollegeDept a switch to some form of 'free' market capitalism is perhaps necessary to sustain growth in the long run.	21:38:32
20	CollegeDept	@Student3 Indeed. Command economies are very unproductive and inefficient, all economists and students of the USSR know this. (NF)	21:40:41
21	Student4	@CollegeDept @Student3 'we pretend to work, they pretend to pay us' command economies summed up in one sentence.	21:46:03
22	CollegeDept	@Student3 @Student2 Lol, so by this logic then Marxism would work fine if we lived in a 'pretend' world *grin* (NF)	21:49:50
23	Student4	@CollegeDept Why do KGB men always come in threes? One to write a report, one to read it, and one to check up on the 2 intellectuals.	22:10:58
24	CollegeDept	@Student4 Lisa will love that one! (NF)	22:11:31
25	CollegeDept	@CollegeDept @Student4 lol very good!! :-))	00:37:34

Lisa and Nathan could have conducted this debate face-to-face or via individual Twitter accounts. Instead they did so in full view of their students, projecting 'backstage' conversations to the front stage. Such interactions by teachers performed the informal expectations of a Twitter account, encouraging students to participate. Here, two students following the debate joined in (18 onwards), making both serious political points (18, 19) and jokes (21, 23) intended as a gentle dig at Lisa's Marxist inclinations. Lisa, in turn, logging onto the Twitter account later that night, signalled her appreciation (25).

Here Twitter banter creates a space for a collective 'geek' identity (Ito, 2009) to emerge, enabling students to participate in a debate about 'serious' topics in a knowingly ironic way. This identity was also performed through the use of 'geeky' hashtags as markers of in-jokes, for example '#brezhnev' in jokey discussion by students familiar with the late Soviet Union President Brezhnev. Through jokiness, and an irreverent context endorsed by teachers, students appeared to feel able to tweet study facts without losing 'kudos'.

In multiple ways, then, more and less complex, teachers and students used Twitter exchanges to recognize each other as producers of valid information and opinion, with implications for pedagogic relationships well beyond the classroom.

Conclusion

We have shown through our detailed analysis how in the large college we studied particular groups of teachers and students used Twitter to create a shared space for dialogue beyond curriculum and classroom, working with (and sometimes against) Twitter's platform architecture. Through

distinctive patterns of use, they created a space for community building, with students and teachers (on the whole) overcoming (justified) anxieties about professionalism and privacy. This was achieved by building on high levels of pre-existing trust among staff and by performing that mutual trust online in a way that gave confidence to students too. Through sustained Twitter interactions that both presupposed and remediated ‘offline’ social bonds, teachers and students collectively constructed shared meanings, values and identities that facilitated community building.

Twitter can enable information sharing and collaborative learning. The degree of trust established through the informal/personal character of communication taking place via Twitter must vary between contexts, but in the institutional context we studied in depth, it enabled students as well as teachers to engage in irreverent exchanges about philosophy, politics and history that both valued. It made learning about such subjects fun. Complementing existing research on how Twitter can be used to improve formal learning outcomes, our study shows how this platform also can support informal collaboration and mutual learning that extends beyond institutionally defined relationships.

Perhaps the most significant aspect of the CollegeDept Twitter account is how it was used by teachers to acknowledge students as knowledge sources and contributors to debates, particularly through their practice of retweeting. As with any community of practice (Wenger, 1998), acknowledging others as having relevant skills helps build that community; it also, more deeply, serves to recognize others as valuable human beings with the capabilities to contribute to that community (Honneth, 2007). Twitter, in banal but easily repeatable ways, provides a space for establishing and publicly democratizing habits of mutual recognition, so serving, under the right conditions, to stabilize communities of learning among students and their teachers that extend beyond the boundaries of the classroom and the regulated curriculum. Thus, in the socially embedded use of Twitter within this particular context, it is possible to detect the emergence of something like a digital story circle – a constellation of agents, processes and digital infrastructures that enables narratives to emerge and be recognized.

The significance of such micro-processes could only have been uncovered through the detailed scrutiny that a ‘small data’ approach to Twitter, is particularly well placed to provide. While quantitative metrics can provide important insights into the *form* that online communities might take and the extent of their interactions, an ethnographic and hermeneutic approach is needed to understand *how* Twitter and other digital platforms become embedded within particular contexts and used by social agents for their own purposes. Given current widespread concerns about how social media platforms are reconfiguring sociality (e.g. Van Dijck, 2013), further such research could usefully explore whether, and to what extent, social actors are capable of exerting agency in ways that are genuinely empowering.

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Notes

1. We discuss the significance of this retweeting practice below.
2. Names have been changed to protect anonymity.
3. As this tweet illustrates, teachers also began using scoop.it, an online curation site that can be linked to Twitter, to collate content relating to specific topics. The initials ‘(NF)’ in this example indicate the particular teacher responsible for this tweet.

4. Hashtags, of course, were developed by early Twitter adopters as a response to this, as an easy way to render conversations about a particular topic searchable (Bruns & Stieglitz, 2012a, 2012b; Zappavigna, 2011).

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