

## **HIGHLY-NETWORKED ACADEMICS IN SOCIAL NETWORKING SITES: ACTIVITIES AND PRACTICES**

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### **Abstract**

The purpose of this paper is to understand academics' participation in social networking sites in general, and on Twitter in particular. Tweets from 48 highly networked PhD academics comprised the data corpus for this study. Tweets were analyzed using the constant comparative method to arrive at dominant themes describing social networking practice. Findings indicate that academics use the popular micro-blogging site to expand their students' learning experiences; share information, media, and resources; request assistance and provide help; and manage their identity. These activities occur in the context of social grooming, connecting and networking, and digital presence across multiple social platforms.

### **Introduction**

Online networks and communities are playing a fundamental role in the digital age. Social Networking Sites (SNS) in particular have attracted wide attention from scholars investigating online behavior as evidenced by recent research in the area (boyd & Ellison, 2007; Donath, 2007; Ellison, Steinfield, & Lampe, 2007; Golder, Wilkinson, & Huberman, 2007; Lampe, Ellison, & Steinfield, 2007; Steinfield, Ellison, & Lampe, 2008; Valkenburg, Peter, & Schouten, 2006). These emerging practices and technologies are being investigated from societal, political, and behavioral points of view, while also explored from varied disciplinary and methodological approaches (boyd, 2007).

Two issues have dominated the literature on SNS: (a) the use of SNS for education, and (b) youth participation in SNS. Specifically, prior research has explored issues relating to identity construction (boyd, 2007; Livingstone, 2008; Zhao, Grasmuch, & Martin, 2008); social capital (Ellison et al., 2007; Wellman, Quan Haase, Witte, & Hampton, 2001); privacy and information disclosure (boyd, 2007, 2008; Debatin, Lovejoy, Horn, &

Hughes, 2009; De Souza & Dick, 2008; Fogel & Nehmad, 2008); institutional uses of SNS (Connell, 2009); and applications of SNS in learning contexts (Quan-Haase, 2007; Selwyn, 2007).

The majority of the literature on SNS, however, concentrates on the social aspects of networked participation, with little empirical research on the applications of SNS in educational contexts (Greenhow, Robelia, & Hughes, 2009) and with little exploration of the complex dynamics of online social networking. The findings that exist on youth use of SNS reveal that the dominant educational practices involve the formation of formal (Selwyn, 2007) and informal (Greenhow et al., 2009) online communities, as well as information sharing on areas of common interest. As the ECAR study (Salaway, Caruso, & Mark, 2008) reveals, the majority of students use SNS for information sharing within their own online community while they also exploit the use of SNS as a “mechanism for communicating with classmates about course-related topics” (Salaway et al., 2008, p. 8). Greenhow and Robelia (2009) also note that youth used their online social networks for “essential social learning functions, including obtaining *peer support* for *creative endeavors* and *help with school-related tasks*. ”

While youth have attracted the greatest interest in SNS research, the rise of online social networking has had an influence on numerous other populations. One such population is PhD level academics. Specifically, the SNS literature has not focused on academics’ participation in SNS, even though academics present an interesting case study of social network participation, since:

- Online social networking has been heralded as an agent of change for the profession (Greenhow et al., 2009).
- Universities worldwide have instituted rules and regulations to guide faculty’s social network participation.
- Scholarship is increasingly moving online and becoming more social and conversational in nature (Oblinger, 2010) and academics would be well served to understand the affordances of Web 2.0 technologies for social scholarship (Greenhow et al., 2009)
- Academics may benefit enormously from understanding SNS practice and breaking away from institutional silos (Hanson, 2009; Nixon, 1996).

Importantly, while SNS have shown potential to transform numerous facets of learning, teaching, and scholarship (Greenhow et al., 2009), such opportunities cannot be capitalized without a deep understanding of how academics participate in online communities, especially as the possibility of a participation gap (Jenkins, 2006) is becoming increasingly evident. The purpose of this paper therefore is to understand academics’ participation in social networking sites in general, and Twitter in particular. Research questions of interest are: What do academics do on SNS? What kinds of

activities do academics engage with on SNS? What motivations guide academics' SNS activities?

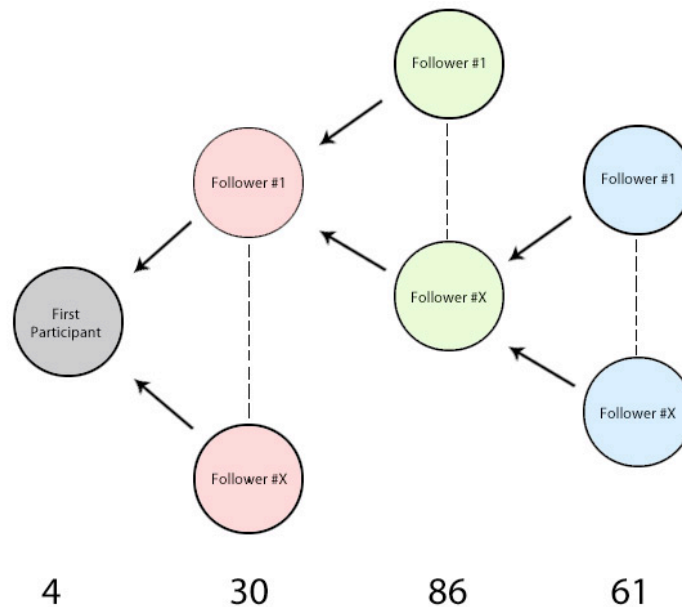
Twitter is a microblogging platform that allows users to share information, through brief (140 character) text updates, with others. Current research on microblogging focuses on the sociological aspects of this phenomenon (Huberman, Romero, & Wu, 2009; Hughes & Palen, 2009; Miller, 2008); general population practices within the platform (boyd, Golder & Lotan, 2010); the possible applications for corporations (Bohringer & Richter, 2009); and its potential uses for education (Du, Rosson, Carroll & Ganoe, 2009; Dunlap & Lowenthal, 2009; Ebner, Lienhardt, Rohs, & Meyer, in press). Yet, academic usage and practices in microblogging platforms remain an unexplored territory despite Twitter's growing popularity. Understanding academics' practices is vital in the effort to investigate the implications of online social networking for scholarship and education.

## **Method**

### **Participants**

We focus our investigation on twitter-participating academics. These individuals were selected based on the following inclusion criteria: they hold a PhD, are employed by a higher education institution at a teaching and/or research role, have a publicly available profile on Twitter, and are highly networked. We defined highly networked as those individuals whose twitter network consists of more than 2,000 followers. To select the individuals whose tweets would comprise the corpus for our study, we followed a five-stage approach. First we selected four highly connected individuals (based on a convenience sampling procedure). Next, we searched through all of their followers for other highly connected individuals that fit the inclusion criteria. Next we searched all their followers, and, finally, all their followers' followers. The process is shown in Figure 1.

Figure 1: Process of identifying highly connected individuals



The 4 original participants were followed by 30 highly connected individuals, 86 highly connected individuals in turn followed those 30 individuals, and 61 highly connected individuals in turn followed those 86 individuals. Due to the fact that these individuals are interconnected, the final sample consisted of 49 individuals. One individual was removed from the sample because he had not participated on twitter for more than 6 months. Our final sample, therefore, consisted of 48 participants.

Out of 48 participants, 41 were males and 7 were females. The least followed participant had 2,133 followers. The most followed participant had 89,039 followers. On average, participants followed 3,892 individuals (SD 11,288) and were followed by 8,898 others (SD 16,448). Two of these participants only use Twitter's web interface to provide status updates while the rest used a combination of Twitter clients such as TweetDeck, Tweetie, and twirl.

### Data Sources

Our data corpus consists of the latest 100 tweets from each identified participant, yielding 4,800 tweets in total. All data were collected on the same day. It is important to note however that participants posted these tweets over the duration of a nine-month period and that posting frequency varies between participants. Four participants wrote tweets in a language other than English (Spanish, Portuguese, and French), and these were removed from the sample.

### Data Analysis

We used the constant comparative method (Glaser & Strauss, 1967) to analyze the content contained in academics' tweets, arriving at salient categories and data patterns. Three researchers independently read and analyzed the data so as to (a) note emerging

patterns and, (b) to gain a broad understanding of academics' practices. The researchers then met seven times to discuss identified categories across tweets and to compare notes and collaboratively analyze data in search of common themes and meanings. Finally, the patterns were compiled and reanalyzed in order to confirm and disconfirm the themes across all academics. Analysis across and between the data continued until no more patterns could be identified. The resulting themes represent academics' dominant practices on social networking sites and are discussed below.

## Findings

Qualitative analysis of the data revealed seven broad themes described in turn.

### **Expanding Learning beyond the Confines of the Classroom**

While traditional teaching approaches limit learning experiences and interactions within the confines of the classroom, the educators who were part of this study exhibited behavior consistent with contemporary learning approaches. Specifically, social constructivism and connectivist approaches to learning seemed to be the philosophies behind tweets that focused on participant's postings. For instance, participants asked others to help their students with questions they had ("One of my [class groups] needs help on understanding why people give. If inspired, please take 1 min [to comment] [URL]") and showcased student work ("Kinda impressed by my students, who collaboratively wrote this: [URL]"). Implicit in the act of asking others to assist with student learning is the idea of distributed cognition where a participant understands that cognition is distributed across members of his/her twitter community and capitalizes on the environment and expertise of others, introducing learners to a community of individuals who are knowledgeable about the topic of study.

Second, educators seem to use Twitter as a tool for opening up their classroom to the world in particular and for open education in general (open education refers to the practice of freely sharing, reusing, and remixing knowledge and resources for learning). A persistent practice that we observed related to educators sharing classroom activities with others and directing others to web-based artifacts that were being used in the classroom (e.g., "Slides for Monday's lecture in [class name] [URL]") or developed for classroom assignments (e.g., "post updated with more video [. . .] by students [URL]" and "[University Name] students look at how [City Name] cleaned up the city's graffiti [. . .] [URL]"). It is important to note that individuals were frequently directed to materials that were developed by the learners. In other words, unlike proposals within the literature that suggest that incorporating online public writing may yield positive outcomes due to the possibility of an assumed authentic audience, these educators took an active role in introducing their students' writings to a real authentic audience (e.g., "I'm proud of my student @student [Blog post Title and URL]"), encouraging participation, and requesting from students to engage in conversations with the audience. Whereas the possibility of an authentic audience may provide the impetus to request learner participation in online learning spaces, it is the actual presence of an authentic audience that is willing to engage with learners that matters.

Finally, while our data include examples of Twitter being used as a directive teaching tool (e.g. “[Class Name] Good example of video to tell a story [URL]” and “Suggest you contact [Person’s Name] at [Organization] – [Email address]. Send me private e-mail if there’s anything else”), this is not a persistent or dominant microblogging practice. The reasons for this are varied and may include educators’ teaching philosophy and Twitter participation not being a classroom requirement. In the instances where resources are shared with one’s class, the standard practice is to use a predetermined hashtag assigned to the course.

### **Information and Media sharing**

Sharing resources, information, and media related to education is the dominant practice of academics’ microblogging participation. The majority of the tweets analyzed related to academics sharing digital artifacts with others, such as information (“Online tutoring is another way that students can improve their success in high school and college. Check out [URL]”) or media (“Simulating a cyber attack: [URL]. A massively multiplayer semi-reality game”). Additionally, while participants shared items related to their professional endeavors (“OpenCulture is one good resource for open content in general, @user”), they also shared items related to their non-professional life (“Quick Thoughts Song to Rock for the Night [URL]”). Participants used four approaches to share items with others:

- Sharing with all of their followers (“interesting book that takes on rational choice, complete w/chimps: [Book Name] [URL]).
- Sharing with all of their followers while at the same time bringing it to the attention of specific individuals (“Yes, this year’s Horizon Report has a tag of [TAG], @user”).
- Sharing with all of their followers while at the same time bringing it to the attention of individuals or groups following a hashtag (“Best Practices in Virtual Worlds Teaching’ guide released — URL #SecondLife”).
- Forwarding information (e.g. “RT @user: @user did you see my tweet on learning myths earlier today?”). Forwarding information on Twitter is referred to as retweeting. Frequently, messages are indicated as retweets by being prefaced by the letters RT, as in the example above. It is also important to note that personal commentary is often attached to forwarded messages (“Need data. RT @user My hyp[otesis]: increased usage of social networks will reverse gender gap w/ women growing more content”).

Information sharing was also prominent in the situations where academics in the sample participated at a conference. In these situations, participants would share activities from the conference (e.g., “Watching [person name] keynote at [conference]. Such charisma! [URL]”) or relevant information (“#[conference name] For those who attended my session — we have the data up. Will get mp3s and synthesis up soon: [URL]”) while

assigning a predetermined hashtag to the tweet so that others could track information related to the conference.

Finally, participants in this sample shared information relating to new technological tools that they seemed to find interesting or worthwhile. For example, one participant noted that “WoW has never appealed to me, but Glitch might. Worth keeping an eye on: [URL]” while another notes that “the Golden Age of Video mashup is amazing (about 50+ vids rhyming with a beat): [URL].” Given that the sample includes numerous academics that may be considered to be early-adopters of technology, it is natural that technological innovation is a topic that appears frequently in the sample.

### **Requesting Assistance and Offering Suggestions**

Participants not only utilized their Twitter network to enhance their students’ learning, but they also used it to enhance their own knowledge and learning as well. Being part of a networked community comprised of colleagues and individuals who presumably follow others partly due to shared interests, it is easy to understand how Twitter participation can foster informal and just-in-time learning. For instance, academics request suggestions relevant to teaching (e.g., “What’s your favorite example of open content in schools? I’m looking for cases for Monday’s session,” and “Request: for my class [...] am looking for examples of good individual journalist FB Fan Pages”) or their practice (e.g., “are you a teacher who uses Twitter in some way in the classroom [or outside the classroom]? Can you tell me about it? I’m very curious!” or “Trying to create online read-only concept map with live hyperlinks. Webspiration just publishes an image of the map. What else is there?”, or “prepping for a few long trips, looking for some good edtech presentations to listen to. . .any suggestions?”). Additionally, participants seek to enhance the quality of their work (while at the same time informing others of the work that they are doing) by requesting information relating to scholarship and research (e.g., “Do you know of any privacy loopholes on Facebook? I’m writing a chapter on this now. I appreciate pointers: [email address removed]”, and “Can anybody suggest articles on the benefits to young gay & lesbian teens of access to online information on homosexuality?”).

Providing assistance, feedback, and input to others is another characteristic of academics’ participation on Twitter. For instance, participants have answered questions (e.g., “Easy one, @user. If there's one class [school name] should add it's [class suggestion]” and “It depends on where they are in life. RT @user1: @user2 Question from Spain. Do you think executives prefer power, money or happiness?”), and provided resources to others (e.g., “Here’s one case of students creating open content: collaborative blogging and video creation, [URL], @user”). In another example, a participant directs a user to an example and offers to provide further material if that is needed: “@user [URL] is one example — if you want to see my syllabus, let me know.”

### **Digital Identity and Impression Management**

The ability to create and manage profiles on social networking sites has given rise to digital notions of self-presentation and impression formation. The topic of digital identity management has appeared prominently in this research, with study participants using tweets to draw attention to their work and professional endeavors: (“Brief article on my

lecture at XYZ College last night. Students there were great: [URL]” and “on my way to XYZ University to give a talk at the ABC Group: [URL]” and “Amazed I’m still getting X# hits a day on this slideshow: [URL] Thanks for all the comments!”). Twitter participants also seem especially keen to share interviews that they gave:

- My ABC theory ... in an interview I did with the editor of [blog] at [URL]
- Listen to or read my interview on [topic]: [URL]
- Worth repeating: XYZ periodical interviews me at [URL]

Tweets that highlight colleague achievements (“Love @user’s recent answer. . . [URL]”) and institutional events/successes (“Congratulations to A B who just accepted a position at the [XYZ University and Department Name] [URL]”) can also be seen as actions that serve to manage impressions: such “public displays of connection” (Donath & boyd, 2004) validate status and connection identity. The following tweet demonstrates this idea: “Back from a fine conversation with @user, talking about education and mobile devices, art, creativity. I always learn from [User’s Name].”

Outside of their professional practice, participants also draw attention to their personal accomplishments (e.g., “Very exciting to be interviewed for this article, [URL], especially since I feel passionate about this topic”). A current practice for example relates to individuals taking one photograph per day in an attempt to document their lives and enhance their photography skills. One of our participants draws attention to his accomplishment in relation to this practice by noting, “I made it to the end of [Month] without missing a day of #photos365! Here’s my month: [URL].”

### Living Social Public Lives

Twitter is often dismissed as a platform of dull updates and meaningless soliloquies. Our research however indicates otherwise. Taken literally and out of context, academics’ twitter updates may appear as if serving no real purpose, but seemingly unimportant tweets serve significant social purposes. Tufekci (2008, p. 546) made a similar observation when conceptualizing social networks as replicating the functions of social grooming (Dunbar, 1998): (gossip, small-talk, and people-curiosity) as “an activity that is essential to forging bonds, affirming relationships, displaying bonds, and asserting and learning about hierarchies and alliances.” All academics selected to participate in this study post tweets that can be categorized as social grooming. Examples of what may be construed to be meaningless chatter, but serve important social commentary, include the following:

- We made it to Minneapolis this morning. Next stop Montana for some skiing [Link to map pinpointing current location]
- I ♥ *Sailor & Widow* by Keren Ann [Link to song]
- My parents are coming in today — I don’t get to see them nearly enough — the kids are really excited.
- Going to check out a kennel we may leave our dog at when we go to DC. Not at all happy at the thought of leaving her for three days. . .
- Getting ready to watch *Away We Go*.
- Tonight’s reading: Nick Harkaway, *The Gone-Away World*



- XYZ and I celebrated our \_\_\_\_ wedding anniversary yesterday!
- Happy birthday @user
- I don't want a snow day. Teaching [course name] is generally the high point of my week
- mmmmm earl grey. . .
- If you missed it, I posted pix Sunday of my latest painting: [URL]

Tweets like these inform others of the sender's intentions and current activities, and introduce opportunities to explore shared interests, goals, mindsets, and life dispositions/aspirations.

### **Connecting and Networking**

While shared social experiences may allow serendipitous bond formation, academics in our sample also sought to actively connect and network with people, while also acting as “connectors” between people. For instance, one individual sought recommendations for one of their students, “Does anyone out there know a person at [company name] who would be interested in meeting with a big-thinking/hi-skilled developer/jurno student?” while another user sought connections for a new teacher, “Anyone out there want to connect with a new teacher? @user is just starting out in her career at [URL] school.” Others gave recommendations, “Current and aspiring [profession] should consider following @user1 and @user2” while others introduced new users, “New blogger birthed from [conference name]. Why don't you drop by and wish her well with a comment [URL].”

Finally, the notion of connecting with others goes beyond recommendations and suggestions. It also touches upon connecting with other individuals and engaging in serious discussion with topics that these individuals feel passionate about, as exhibited by the following tweets:

- @user I just lost my first doc. student to financial circumstances. It may be the first of many. Higher ed. is in trouble.
- @user I don't know where u teach but many of my students pay for college and seriously know it. on top of loans.
- I asked the [. . .] reporter why she didn't mention any of this in her account: URL. Her answer was: I'm not a media critic.

### **Presence across Social Platforms**

Across the tweets analyzed we saw evidence of presence across multiple social platforms. Study participants highlighted their participation in other online social networks, directed others to information/media that they posted in other online spaces, and alerted others of activities that occurred in other spaces. For instance, users connect social networking services and auto-update their status with activities that occur in services outside of Twitter (e.g., “I favorited a YouTube video — A Brief History of Pretty Much Everything [URL]”), or, direct followers to other sites where further information can be

found about their specific activities (e.g., “New Blog Post: [Post Title removed] [URL]” or “Morning Readings: [Link to Image of Book cover taken with a smartphone and uploaded on an image sharing website]”). These activities indicate that the academics in the selected sample maintain an active presence on the web and are able to traverse, consolidate, and reinforce their digital presence.

## Conclusion

Social Networking Sites (SNS) have gained wide attention in both the academic literature and popular press. Studies of participation in SNS have sought to understand the practices and activities of youth (boyd, 2008; Ellison et al., 2007), while also highlighting important issues of consideration with regards to the rise of the networked and participatory mode of communication such as the participation gap (Jenkins, 2006), digital identity (Suler, 2002; Zhao et al., 2008), and information and media literacy (Buckingham, 2005; Livingstone, 2008). In this paper we presented findings related to academics’ practices in social networking sites. In the context of this study, we found that academics’ participation in SNS is a complex human activity where personal and professional issues blend. Furthermore, we presented evidence that suggest that Twitter is not a platform of dull updates and meaningless soliloquies as participants in this study actively engaged in social grooming, identify building, networking, and assistance provision/requests. While this research provides an important step in understanding social network participation for scholarship purposes, numerous issues deem further investigation including the development of academics’ digital identities and the role of scholars in networked spaces.

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