Educator Communities of Practice on Twitter

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Abstract

As Twitter became a popular platform for social networking, educators gravitated to the platform for professional networking. Educators began to utilize the hashtag #edchat to denote their ongoing and growing conversations on education subjects. Educational institutions began to require teachers to participate in the platform or would grant continuing education credits for their participation. To determine if such sanction is merited, a qualitative exploration of the network of educators on the Twitter platform was performed. Posts to Twitter containing the #edchat hashtag were collected and a survey instrument was disseminated with the #edchat hashtag. Collected posts and their linked content were coded according to their content. Demographic qualities of the participants in the #edchat community were addressed as well as questions arising from coding, such as the nature of retweeting and the role of commercial entities in the community. From these codes a set of distinct categories of #edchat Twitter posts were analyzed and discussed. The themes of these posts were determined and related to the literature. The survey instrument allowed exploration of motives and perceptions of the impact of #edchat participation, and how these perceptions related to the themes of the collected posts. Participants in the #edchat conversations were found to be generating social capital and binding a community together through the weak ties of brief interactions. A community of practice was found to exist in the collected #edchat posts and survey responses.

Traditionally teachers have shared their pedagogical and content knowledge with other teachers in face-to-face, real-time interactions, primarily within the teachers' own schools and systems. With the advent of the internet, many of these teachers have turned to online networking to expand the scope of their professional learning networks and embrace the online social networking model for this purpose (Smith-Risser, 2013). On these networks, teachers exchange resources, methods, and techniques; teachers consult and collaborate with each other to such a degree that networks like Twitter are seen by many as a viable method of professional development and teacher education (Wesely, 2013).

As social networking via Twitter is being advocated to educators by academics (Holmes, Preston, Shaw, & Buchanan, 2013), state departments of education (Alabama Learning Exchange, 2014), system administrators (Esposito, 2009), and other educators (Schrock, 2014), it is commonly believed that Twitter, and to a lesser extent other social networks, are a treasure trove of resources and professional knowledge waiting to be gleaned by educators. Twitter users may *follow* other users, meaning they receive their updates automatically. Hashtags are a method of specifying subject matter on Twitter, created by the use of the octothorpe (colloquially referred to as the pound or number sign) and a short, subject-specific phrase (Doctor, 2013). The most popular hashtag among the educator community on Twitter is #edchat (Bearden, 2013). An

active community of teachers post regularly to the hashtag #edchat and they have two scheduled chat sessions each Tuesday. The members of the #edchat community are prolific posters on Twitter, with thousands of tweets each day.

#edchat

Educators active on the Twitter platform organized a community of teachers around the hashtag #edchat in 2009 (Frontpage, n.d.). Starting with a small group of educators desiring a hashtag to highlight their discussions of education policy and practices, a weekly chat session quickly coalesced around the hashtag. Topics for the weekly chat are determined by online polls organized by the founders and moderators. After the chats are complete, the tweets for each session are archived for review. By 2012, the weekly #edchat sessions had several hundred active participants and thousands of posts each week (Anderson, 2012).

The #edchat community used the hashtag more often than just during the weekly formal chats. Members of the community began to tag educational posts to Twitter with the #edchat hashtag beyond the regularly scheduled chat times, creating a resource of educational posts that grows daily. Membership in the #edchat community is open and fluid, with the conversation open to anyone posting the #edchat hashtag (Whitby, 2010).

Theoretical Frameworks

Three primary theories were used as a lens for exploration of the community. The first was social capital (Coleman, 1988), where benefits are accrued by social interactions. Granovetter's (1973) strength of weak ties, where a community becomes linked by tangential relations of its members, was the second lens for exploration. Finally, Wenger's concept of the community of practice, where a body of collective knowledge and best practices emerge from a community gathered around a specific topic (Wenger, McDermott, & Snyder, 2002), was used to explore the network. These theories give insight to the way the Twitter community members interact and how the members find value in the community. By exploring the value of social capital among the participants within the educator community on Twitter, as well as the way the strong and weak ties bond the community (Granovetter, 1973), the educator community may be better understood and evaluated.

Purpose of the Study

The purpose of this qualitative study was to (1) explore the activities and interactions of the community of educators who use Twitter hashtags as a tool to build communities for improving teaching and learning, and (2) discover how participation in this community benefits its members and the education community as a whole. With participation in the Twitter education community being legitimized by various means by administrative bodies, the value of the platform for its participants must be understood to determine if this official sanction is merited. Understanding what is being shared in the community and the perceptions of its members may lead to greater understanding of the community.

Methodology

To observe the interactions of the education community on Twitter, public posts on Twitter containing the education specific hashtag #edchat were studied. On Tuesdays, predetermined topics are discussed. To ensure these predetermined topics did not influence the posts collected for this study, Tuesday posts were not considered. A total of 1,486 posts containing #edchat were collected during the collection window. These posts were either original posts from or retweets of 1,333 individual Twitter accounts.

An electronic survey was circulated containing the #edchat hashtag, allowing for the collection of data on the actions in, and perceived benefits of participation in, the Twitter community for a sample of educators. The survey asked, in closed response questions, for basic demographic data, the nature of the respondents' professional responsibilities, and basic questions about their experiences on Twitter and specifically within the education community on Twitter. Open-ended questions were used to glean more in-depth and personal responses regarding their perceptions of the education community on Twitter. Surveys on Twitter stand the potential of being seen by thousands of educators with hundreds of surveys returned (Carpenter & Krutka, 2014). Despite this potential reach, for this study 27 survey instruments were returned.

NVivo 10 Qualitative Research Software, produced by QSR International, is capable of saving tweets from Twitter based on several criteria, including by hashtag, search terms, or username. Due to the high volume of traffic containing the #edchat hashtag, posts from five 1-hour windows of traffic were saved for analysis. These 1-hour windows were determined with a random number generator, first by randomly selecting a day and then an hour of that day. The survey instrument was distributed using the #edchat hashtag and was posted to Twitter daily using the #edchat hashtag for the period of two months.

Data Analysis—Collected Tweets

NVivo 10 Qualitative Research software allows the collected tweets to be coded and sorted. A set of codes was developed through analysis of a pilot sample of Twitter posts, and the individual tweets coded and categorized. Some of these codes were later collapsed for discussion, while other topics emerged during coding. Demographic survey data were compiled, so descriptive statistical analysis of the data could be generated. Open-ended responses were coded using a coding schema based on previous studies of Twitter education communities. Interview responses were coded in similar fashion using the NVivo 10 software.

Coding

Coding was performed with a set of codes describing the type of content that was shared within individual tweets (Saldaña, 2009). Codes were determined by collecting 247 tweets over the course of 1 hour and coding these tweets according to the type of content within the tweet or to which the tweet linked. The pilot sample was coded to an evolving group of codes. Each tweet could be coded with multiple codes if the post or the content linked to it merited. After the tweets were coded, they were then recoded using the developed codes and the two trials of coding compared for consistency. The coding between trials was consistent with four tweets differing in their coding between trials (and those tweets were coded with either an additional tweet from the initial coding pass or did not include one of the multiple codes).

The survey instrument was generated to allow exploration of the perceived use and value of participation in the education communities on Twitter beyond the actions in the communities

observed in the collected posts to Twitter of the #edchat community. Respondents were asked to define their role in education, they were given multiple choices as well as the opportunity to self-define their own role. The respondents were also asked about the amount of experience they have in education as well as the length of time they had used Twitter to network with other educators. The age of respondents was also collected to determine if there were trends in the survey respondents' Twitter activity in relation to their age.

The survey gave the respondents a list of common activities within the #edchat community on Twitter, such as sharing and resharing resources, following links to others' shared resources, engaging in professional dialogue with individual educators on Twitter, participating in scheduled Twitter chats using a hashtag, and seeking assistance from other educators on Twitter. The respondents were given the option to classify how often they participated in these activities across five categories: daily, regularly, often, sometimes, or never. Respondents were also asked a multiple-choice question regarding their offline relationships with the educators they interact with on Twitter and if these interactions took place exclusively online or if these interactions also had a face to face component. The survey instrument also asked respondents to describe the benefits they receive from participation on Twitter as a professional educator. Respondents were provided several choices about the kinds of interactions and information shared on Twitter by educators and could choose as many as applied or provide their own response.

Two open-ended, free response questions were included in the survey. The first of these addressed what the responding educators viewed as the primary benefit of their professional interactions on Twitter. The second of these questions addressed the perceived value that participation in the education communities on Twitter had on the respondents' classroom, school, and system. This allowed respondents to self-report the perceived value of the network to themselves and their communities in their own words. Open-ended questions were divided by common themes. The gathered survey responses were then analyzed through the lens of Wenger's (1998) community of practice. Elements of the three components of the community of practice (domain, community, and an emerging set of knowledge and norms) were sought and documented from the survey data.

Discussion

Of the 1,486 tweets, 555 posts were original posts from 395 different Twitter accounts. The remaining 931 posts were retweets, verbatim quotes of other users' tweets (boyd, Golder, & Lotan, 2010). These retweets came from 788 different accounts and were retweeting posts from 292 accounts. Among the three varieties of posts collected (original posts, retweeting posts, and the original posts that were retweeted), 142 accounts were active in more than one variety of post. For example, an account may make an original post within the collection window and also be retweeted by another account in this window. Considering the accounts posting original tweets, accounts retweeting other accounts, and accounts being retweeted, a total of 1,333 accounts were represented in the 1,486 posts collected for the study.

The 14 coding categories used for coding the tweets collected for this study were status, assistance, chat promotion, Follow Friday, memes, question, recommendation, resource, techniques, news, reflection, research, student work, and philosophy. While the 14 coding categories grew organically from analysis of the captured posts, several of the codes were similar enough in their content to be discussed together. For example, the codes recommendation,

resource, and techniques all involved endorsing of tools or strategies within the classroom, either by an explicit endorsement or the implied endorsement of the sharing of the resource. While questions and assistance existed separately as coding codes, both are asking the #edchat community for advice, opinions, or action. The codes chat promotion and Follow Friday are both used to recommend Twitter content of interest to others in the #edchat community, though in different ways.

Just as multiple codes were collapsed into a single theme for discussion, some posts merited discussion apart from the original codes. For example, most of the posts recommending tools or strategies linked directly to digital content or tools on the internet. A subset of these posts recommended non-digital resources, meriting exploration of the variety of offline content and resources shared via the #edchat hashtag. Some posts captured were from posts that self-identified as representing a commercial entity. These commercial posts reflected varying strategies of promotion and community engagement, requiring exploration of these posts on their own. The large percentage of posts that were verbatim reposts of other #edchat content invited further exploration of the information that the community retweets. The 14 original coding categories evolved to a slightly modified set of categories for the purpose of discussion: status, questions and assistance, chat promotion and Follow Friday, student work, memes, news, reflection, research, philosophy, retweet, tools and practices, offline content, and commercial posts.

Themes

Several themes emerged from the collected posts to the #edchat hashtag on Twitter. While the posts themselves with the #edchat hashtag were coded, with the codes evolving to categories, these themes cut across many categories. The themes were reinforced in many of the free response questions to the survey instrument and reflected elements of the theoretical lenses of this study. The primary themes of these posts were active learning, continuous learning, online resource sharing, and global interaction.

Active learning. Active learning as a theme emerged from the posts that fell into several categories. Memes and maxims shared by educators promoted the value of students being proactive and creating rather than just memorizing and repeating. Philosophy posts echoed these sentiments, as well as the research that participants in #edchat chose to share. Tools and resources were focused on student creation and the fostering of student voice and choice. In many posts across almost every category, the concept was advanced that students should create and be active participants in the learning process. Posts to Twitter with the #edchat hashtag promoted an educational model where student voice and choice were paramount. Students were to create, discuss, think critically, and learn actively. When members of the community would recommend tools and techniques to each other, they were more often than not tools of digital creation and ideas to construct relevant lessons to the subject matter with these tools. Teachers encouraged each other to listen to the needs of their students, as well as allow the students to use their diverse set of skills to create artifacts for grading. According to these posts, students should rise above the typical constraints of a written assignment and teachers should cultivate their abilities to communicate across a variety of platforms and media. While the teachers shared tools and techniques, they were reinforcing a set of social goals and best practices, as Wenger's community of practice would (Wenger et al., 2002). The development of community orthodoxy predicted by Wenger and Snyder (2000) emerged as the community embraced the value of active learning and promoted its use.

Continuous learning. Continuous learning emerged as a theme from the philosophy category of posts, as well as the memes shared by #edchat participants. Tools and resource posts encouraged teachers to continue discovering to improve teaching and learning. Open-ended survey responses lauded the value of a personal learning network to allow teachers to continue to develop and the "self-directed growth and learning" the #edchat network allowed. The #edchat participants valued the ability to improve their own skill set and model continuous learning for their students.

Posts to the #edchat community called on teachers to model the concept of the life-long learner. While compelling students to pursue their interests and cultivate their skills, the community expresses the belief that a teacher should model this behavior (Forte, Humphreys, & Park, 2012). Teachers should continue their learning and #edchat and the many personal learning networks (PLNs) of the teachers using the #edchat hashtag are encouraged as an avenue for this learning. As teachers strive to continue the growth of their own knowledge, they are cultivating the collective knowledge Wenger would expect of a community of practice (Wenger et al., 2002). Encouraging the #edchat community as a whole and the smaller PLNs for an avenue of this growth, the network is also encouraging the formation of community (Hiscott, 2013). Teachers generate the bonding capital among their PLN (Sun & Shang, 2014) as well as the bridging capital and strength through weak ties (Friedkin, 1980) as members of these communities interact with each other (Forte et al., 2012).

Global interaction. The global interaction theme emerged from posts across categories and the open-ended survey responses. Many of the survey respondents lauded the geographically diverse nature of the #edchat network on Twitter. Philosophy posts referred to the global nature of the community while tools and resources posts suggested ways for students to interact with other classrooms across the world. The international nature of the Twitter #edchat interactions encouraged the educators to bring this global nature into the classroom.

Teachers using the #edchat hashtag view isolation as an impediment to learning, both for teachers and students. By reaching out to other regions and nations, teachers and students may find alternative solutions, procedures, and methods. By exposure to this diverse knowledge base, teachers and students may determine which is the best suited for a particular problem. This attention to a global community not only allows the members of the community to find the best practice for a particular issue, but consulting a diverse set of ideas is itself a best practice (Pariser, 2011). This also helps the network foster its communities and forge the weak ties of distantly connected teachers into a strong global community building social capital (Hofer & Aubert, 2013). Teachers often have leveraged the internet to fight the perceived isolation of the classroom (Carpenter & Krutka, 2014), and by using Twitter and the #edchat hashtag educators are reaching out beyond the walls of their classrooms and geographic confines of their system to work with this global network.

Online content sharing. The final theme of online content sharing was seen across the #edchat conversations in posts that represented almost every category. Open-ended survey responses celebrated the sharing of resources and links to content off of the Twitter platform and this appeared in a majority of posts captured for the study. Accounts existed for the express purpose of curating links to the #edchat conversations. The theme of online content sharing is so ubiquitous in #edchat that it would be impossible to discuss #edchat without addressing these internet links.

Links to content away from the Twitter platform were in almost two-thirds of posts collected for this study, as is consistent with previous research (boyd, Golder, & Lotan, 2010).

Open-ended responses to the survey instrument lauded the #edchat community and its resource sharing. This link sharing has been noted on the platform in previous studies (Holmes et al., 2013) and is commonly seen as one of the values of the hashtag-based education communities (Forte et al., 2012). These links hold the collective knowledge base of the community of practice and the repeated sharing and retweeting of these links reinforces the practice of the individuals in the community.

Survey Responses: Demographics

Twenty-seven individuals responded to the survey. The responses to questions regarding education roles and experience of the respondents indicated that most were veteran educators who had been participating in the network of educators on Twitter for some time. Twenty-one respondents to the survey were veterans of education circles, reporting that they had used Twitter to interact with other educators for longer than two years. Respondents were predominantly education veterans with only four having less than five years of experience as an educator and seven respondents having over 20 years of experience in education. This experience is reflected in the reported age of the respondents: With 13 respondents reporting their age as 40 to 49 years, nine respondents reporting their age as 30 to 39 years, two respondents reporting their age as 20 to 29 years, two respondents reporting their age as 50 to 59 years, and one respondent reporting their age as 60-years-old or older.

Twelve of the respondents were classroom educators, with seven indicating they were in elementary classrooms and five indicating they were secondary educators. Four respondents indicated they were technology coaches and two responded they worked in post-secondary environments. One respondent was a pre-service teacher. The remaining respondents self-described as a variety of roles, such as consultants, parents, and student facilitators. One of the remaining respondents identified as an *edupreneur*: a portmanteau of educator and entrepreneur used to identify someone within a school or system who develops programs or products to reach institutional goals (Lavaroni & Leisey, 2015).

Survey Responses: Twitter Activity

Respondents indicated they were engaged with the #edchat community in several ways. All respondents reported sharing resources to the community. Fourteen respondents indicated they shared a link to online education resources via Twitter daily or often. Another eight respondents indicated they shared links to resources regularly, and four respondents indicated they shared links to online resources only sometimes. The respondents also indicated they reposted resources they discover through Twitter, with 12 respondents reporting they retweeted links daily or often and another 11 respondents indicating the retweeted links regularly. Most respondents also reported posting to Twitter with education hashtags, with one indicating never making such posts and 22 indicating they posted with education hashtags daily, often, or regularly.

In reporting their interactions with other members of the education community on Twitter, only one respondent reported never providing help or assistance to other educators on Twitter and two reported never asking for help or advice on the platform. While no respondent reported helping other teachers or asking for help daily, 14 indicated they asked for help often or regularly and 15 reported they attempted to help other educators often or regularly.

Education hashtags are also used to turn Twitter into a real-time discussion similar to a chat application. Similar to #edchat's two scheduled Tuesday chats, hundreds of smaller Twitter

education communities schedule regular chats. While four of the respondents reported they never participate in these chats and another four indicated they did so only sometimes, 19 respondents reported that they did so daily, often, or regularly. These teachers were engaged in the education community on Twitter and interacted with their fellow educators there.

Respondents' engagement in the #edchat community is not limited to the Twitter platform. Five of the respondents indicated that the interaction with the educators they have met through #edchat are only through digital platforms such as social networks and email. Sixteen respondents reported interacting with their Twitter cohort face to face while six indicated that they have many face-to-face interactions with other members of the community.

Survey Responses: Benefits of Twitter

Respondents were provided a list of potential benefits that would come from participation in the educator community on Twitter and asked to choose all that they believed applied, as well as given the opportunity to provide their own response. All 27 respondents indicated they used the educator community on Twitter to find news about the field of education. Twenty-five indicated they used the community to find resources and information for classroom use. The community was also a source of collegial support to many of the respondents. Twenty-four respondents responded they used Twitter to find other teachers with similar interests and issues. Over half responded they find the emotional support of the community to be an asset.

Respondents were asked to provide their own response to a question regarding the primary benefit to their interactions with other educators on Twitter. These responses were viewed through the lens of the community of practice and its three components: domain, community, and practice. As the responses were coded, other themes were also identified. A community of practice gathers around a domain, and in the case of the Twitter #edchat community the domain is education, the practice of teaching, and the improvement of learning. The mention of this domain appeared in five of the responses directly. For example, an administrator replied in part, "Knowing others are trying to transform education too." Another response, this time from a teacher educator, included the statement, "Being part of a global education community lifts all of our voices." An elementary educator stated, "Using Twitter, my eyes have been opened to different view points [sic] on topics of interest to educators, such as grading, homework, and use of technology."

The community found on Twitter for those in the education domain was an element of 19 of the 27 responses. An elementary educator responded that Twitter gave her a place for "discussing and sharing ideas, understanding the norms of the profession, job searching and networking, support." A post-secondary educator stated that the education community on Twitter allowed them to "connect, learn, share, and affirm . . . in that order." A new elementary educator stated that Twitter offered them "encouragement--especially as a new teacher. I don't get support from my admin." Being part of a community not limited by geography was cited by several respondents, including a secondary educator in their 30s who responded "the ability to interact with a geographically and culturally diverse group of educators with whom I can share ideas and widen my own knowledge is the primary benefit."

Six of the respondents specifically mentioned the concept of a PLN. The PLN, an aspect of a connectivist learning environment, is a group of resources such as mentors, colleagues, collaborators, and content where the learner becomes an active and contributing participant. Learners in a PLN also derive emotional satisfaction and validation from the bonds they form with their fellow learners (Pettenati & Cigognini, 2007). An elementary educator in their 40s

expressed "My PLN is INVALUABLE!" at the end of her response. An administrator stated the primary benefit of professional interactions on Twitter to be "a PLN that is global." These teachers view the community as supportive and part of the professional growth.

Survey Responses: Outcomes of Twitter

The final question on the survey instrument was another open-ended question: "What outcomes do you believe that participation in the professional educator network on Twitter brings to your classroom, school or system?" In this question, two of the three factors of a community of practice, the domain of education and the community in which they interact, are referenced in the phrase "professional educator network." The third factor, the emerging set of group content knowledge and best practices, was found in 26 of the 27 responses to the question.

An administrator responded that the education community on Twitter "exposes us to others who do what we do and allows us to learn from them, share our experiences, and get better at what we do because of our increased knowledge," portraying the information shared in Twitter education conversations as a two-way street. This participant was aware that as they are learning from other educators, they are also sharing their practice with the community, in turn allowing the community to build a knowledge base and improve teaching and learning.

Theoretical Lenses

The mechanisms of social capital, where members of a group or community gain benefits from their interactions among their colleagues, are at work in the generation of tangible benefits from the actions of the educators interacting on Twitter. Granovetter's (1973) theories on the strength of weak ties also play an important part in the relational interactions of the educators on Twitter, allowing a network of individuals to coalesce into a community. However, the exploration of the #edchat community in this study was performed primarily through the lens of Etienne Wenger's (1998) community of practice. In a community of practice, a discipline draws together a group of practitioners who create a network of connections that develop into a community in which a body of best practices and perception of the future development of the domain may emerge.

Social Capital

Social capital exists in two varieties. Bonding social capital brings members of a group together in solidarity and coalesces a group with strong bonds within a community. Bridging social capital encourages more ancillary members of a group to have greater participation within group dynamics (Sajuria, van Heerde-Hudson, Hudson, Dasandi, & Theocharis, 2015). Twitter not only allows for bonding social capital to create strongly bonded groups, but creates bridging social capital to allow for the inclusion of ancillary members of the network and their ideas to the community. From this community of individuals and groups, the members of the community may find value generated from their interactions.

Bridging social capital may be seen in multiple aspects of the educator community on Twitter. The convention of Follow Friday, where members of the community recommend other members to follow, brings other voices into the conversation and attempts to promote their sentiments as valid contributions to the community. Likewise, the posts that recommend other smaller and more specialized education conversation hashtags bring in the voices of these conversations into the mainstream of the monolithic #edchat hashtag.

Bonding social capital is seen in the frequent retweets of the education community. By allowing the message of #edchat participants to be shared and reshared among the community, it allows participants to give endorsement to and increase the scope of dissemination of the ideas and information shared by others. This facilitates members of the community finding those who have similar interests and ideas while strengthening the bonds between them.

Survey respondents provided evidence of both varieties of social capital. Several indicated their PLN as one of the great benefits of their participation on Twitter. These small groups have bonding social capital and the bonds of these small groups of educators are important to their members. Respondents also gave responses detailing the bridging social capital of the network. Respondents extolled the ability of the network to allow teachers to reach beyond the familiar and find ideas and collaborators from different regions and countries. The influx of new ideas, techniques, and methods into their practice was of value to several respondents, a form of bridging social capital.

The Strength of Weak Ties

A community comprises individuals and their relationships with the other members of the community. These relationships may be defined as strong or weak, depending on the number of interactions between parties, the emotional intensity of the interactions, and the mutual tangible benefits of the relationships. In a large community, there will be more relationships with weak ties than strong ties. The weak ties of those who interact through others with a bridging stronger relationship bond facilitate a strength within the community as a whole (Granovetter, 1973).

There are many ways for members of the educator communities to interact. Some survey respondents excitedly spoke of the strength of their PLN and the value of the relationships they have formed with other members of the community. Others specifically cited the professional and emotional support offered by others in the community. These are strong ties, which individuals may use to facilitate interactions with the other members of the community with whom they may not have direct ties. The collaborative aspects of the community are also facilitated by the strong bonds of individual PLN. The individual #edchat posts also reflect the weak ties of the community creating a strong bond among its members. Participants in #edchat recommend community members for others to follow and other hashtag-based conversations that may be of interest. The community retweets posts it finds important and these posts find wide dissemination, allowing participants to discover these retweeted posts through those in the community that may be followers of other colleagues or simply followers of #edchat and its related hashtags.

Domain

Social networks like Twitter have been shown to facilitate the professional ties of their participants (Cardon & Marshall, 2015) and to this end, the originators of #edchat created the hashtag so that other educators would not miss out on the education discussion on Twitter (Anderson, 2012). Participants describe themselves as being from a variety of education stakeholder groups: teachers, administrators, instructional coaches, parents, vendors, consultants, preservice teachers, and students. The discussions using the #edchat hashtag revolve around education. This includes the practice of teaching, the ways students learn and the artifacts they produce, education research, learning theories, and the evolution of education both as a practice and an institution. While users of the #edchat hashtag may not have an explicit mention of education in their Twitter biography or a reference to their teaching career in their username, all

discussion using the hashtag captured for this study discussed some aspect of education, making it the clear cut domain for this community.

Survey responses demonstrated the domain of education bringing users of Twitter together. Respondents referenced education, students, classrooms, and the practice of teaching throughout their open-ended responses. They also indicated that Twitter is a location for discovery of tools and techniques for their classrooms and schools, as well allowing them input into the discussion of the evolution of education.

Community

A website or platform does not make a community, but a community is created by people exploring their domain and pursuing goals together. They form relationships with others involved in their domain and share information relevant to their shared interest. Online platforms have been shown to facilitate the formation of these communities among like-minded professionals (Maness, 2006). While they may practice the craft of their domain independently to varying degrees, they develop the tools of that craft in shared spaces and as a collective determine its progression and evolution (Wenger, 2011). The educators on Twitter are using their hashtag-based discussions to form this sort of community, as evidenced by the collected posts with the #edchat hashtag.

The community is exploring the domain of education on many fronts. They routinely share strategies and resources for use in the classroom as well as management of the administrative and clerical duties of working in an education institution, in addition to posting reflections on the success or failure of these strategies and resources. They routinely share news articles and research regarding education with each other. Philosophies of education and learning are often a topic of discussion as well as discussions of ongoing education research.

Educators on Twitter also routinely share aphorisms and image-based maxims regarding challenges and goals within education. Memes and images are shared to provide other educators with encouragement in the face of common issues in the classroom. These educators also use the #edchat hashtag to ask each other advice and for assistance and recommendations.

The community, as Wenger (2011) defined it, is perhaps most apparent in two common varieties of posts made by educators. The first contained recommendations of other education chat hashtags and users to follow. While #edchat is the most commonly used education-related hashtag, there are hundreds of smaller, more specialized communities discussing education esoterica and niche topics. These hashtags often appear with posts using the #edchat hashtag to reach educators who actively follow or participate in these smaller education discussions. These extra hashtags with #edchat posts also raise awareness of these smaller and more focused Twitter discussions in the #edchat community. Many times, participants in these smaller education discussions post with the #edchat hashtag in an overt manner to advertise the discussions occurring around these hashtags. Other times, educators on Twitter participate in Follow Friday, the tradition of posting a list of interesting accounts to follow with the hashtag #FF or #FollowFriday. By posting a list of educators who post interesting and intriguing material with the #FF and the #edchat hashtags, these lesser known accounts and chats are introduced to the monolithic #edchat community. This brings other topics of discussion and other voices into the larger group and allows different varieties of information and other voices to receive focus within the community. This makes the network larger, more diverse, and allows new relationships to form.

The second variety of posts illustrating the reach of the community and allowing greater propagation of information through the network is the retweet, a verbatim repost of another user's Twitter post. It may either be denoted by "RT" added to the post by the user doing a retweet or automatically by Twitter. A retweet is a common way of pushing a post out to an account's followers that may not follow the original account. It is also seen as an endorsement of the material contained within the post. Most of the Twitter posts captured for this study were retweets, endorsing and further disseminating the posts of other members of the educator networks on Twitter and the #edchat community.

The community was cited many times in the open-ended responses to the survey and was seen as a source of resources and differing perspectives. It reassured teachers to hear of the way things were done in places beyond their own school and system. The PLN, a term for a community of cooperative learning and growth, was cited specifically by several respondents. The sharing of resources and the refinement of the craft of teaching were also specifically noted by respondents, concepts cited by Wenger (1998) as identifying the professional community.

Practice

Research has shown that the social connections of networks of professionals facilitates the sharing of resources (Yoo, Choi, Rho, & Choi, 2014) and the cultivation of the practice of teaching, This, along with the continuous development of an evolving set of best practices is the third element of Wenger's community of practice (Wenger, 2011). Twitter posts using the #edchat hashtag during this study not only posted research and philosophical positions regarding the practice of teaching and learning, but shared a myriad of tools, resources, strategies, and techniques for use in the classroom and education institutions. Maxims were shared that, while brief and many times humorous, reflected attitudes about teaching, learning, and teacher or stakeholder interactions that illustrate the community's ideals. Survey responses evidenced teachers in the Twitter educator community seeking to refine their practice and other perspectives on the profession that allow their own philosophy and techniques to progress.

Techniques and resources were among the most common posts made to the #edchat conversations. While most of these were not overtly recommended, proactively posting these tools so other teachers may use, investigate, or evaluate their effectiveness in the classroom served as a tacit endorsement. Many posts shared links to digital tools, aggregated lists of digital resources, or exploration of school-based usage of a digital platform. By raising awareness of these resources and their usage, posting accounts allowed the community to determine the efficacy and usefulness of the resources to teaching and learning. Non-digital strategies and classroom techniques were often shared as well, allowing teachers to attempt to leverage these solutions and techniques in the classroom.

While the posters to the #edchat discussion were sharing tools and resources, the common themes in the implementation of many of the shared resources indicated values held by the community in regard to effective teaching and instruction should be. Tools encouraging students to create were shared and discussed often. The members of the #edchat community are seeking and sharing resources that will free the classroom from the industrial model of a teacher explaining a topic and then assessing through a test or written questions. The community values giving the student agency and voice by allowing students to create assessment requirements. When the student is given a choice on the media and presentation in response to a question or prompt, it is seen as increasing engagement and efficacy of the instruction.

Beyond forging a vision of instruction, the community also promotes a system of values for teachers. Student inclusion is seen as a priority by the community and the maxims and tools promoted by the #edchat conversations encourage teachers to engage all students and be accepting of the divergent communities interacting in educational institutions. The ability to evolve and embrace change is also a top priority in the articles and techniques posted to #edchat conversations. As more mobile and distance based technologies come into mainstream use, the community encourages teachers to reflect on the ways these changes will change our perceptions of what a school should look like and how it should operate. A running theme in the posts made with the #edchat hashtag was community members' views that being attached to industrial age educational models and goals is seen as a hindrance to the future of students and education as an institution. Teachers, administrators, and elected officials who are resistant to change are anathema to the progress that forward-thinking teachers are struggling to achieve. Through their posts, the teachers on #edchat are not just providing other teachers with the most current tools for their classrooms today, but modeling a mindset for professional and institutional growth.

Implications

Participation in the education community on Twitter has been encouraged by individual educator advocates and has gained institutional endorsement with many administrators encouraging use of the platform and systems and granting continuing education credits for educators' participation. Posts collected for this study and survey responses indicate that participants in the conversations regarding education on Twitter are generating both bridging and bonding social capital, creating a community, and developing a set of forward thinking best practices and standards. A community of practice has emerged in the #edchat conversations. This community is of value to education, allowing education stakeholders to take part in a real-time global conversation about how to best educate students, both now and in the future.

These conversations, via an open and public platform, allow anyone to join, contribute, and benefit. The dialog between educators is occurring on a proprietary platform tied to a commercial entity, making them subject to forces outside the realm of control of the community. Changes to the platform may have significant impact on the networks from which the community of practice arises. The elements that have led to the growth of the community of practice on Twitter, such as a low barrier to entry, easy signifiers of the domain, conventions to cultivate community, and the simplicity with which information is shared, must carry over into next generation platforms.

Conclusions

The educator community on Twitter, communicating with the #edchat hashtag as well as the myriad related #edchat groups, has used the weak ties of a multitude of casual relationships to create the strong ties of community. This community draws from their interactions, social capital to both draw themselves together in tight-knit groups and bring others from the periphery of the network into the general discourse of the community. Those educators using the #edchat hashtag gather in a community to discuss the domain of education and from this community an emerging set of standards and best practices have emerged. These practices are encouraging student-centered, active learning in the classrooms and systems and schools where students, teachers, parents, and administrators have a voice in the curriculum and procedures of a school.

The community of teachers facilitates the spread of ideas and lessens the isolation of districts and schools that have traditionally had little communication and collaboration with other education institutions. The Twitter platform and the hashtag #edchat are cultivating an educator community of practice. The knowledge of this community is a rich resource for teachers, and the potential for the collective voice of educators this community is developing aid in the crafting of educational policy where the concerns of teaching and learning are addressed in a forward-thinking manner.

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