The Social Side of Educational Policy: How Social Media Is Changing the Politics of Education

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Social media are online technology platforms that focus on synchronous and asynchronous human interactions with a local and global reach unprecedented in human history. The Internet and its architecture have enabled the development and use of these platforms, which are designed to support social interactions and give rise to a complex interplay between communication, social practices, and technology infrastructure, challenging existing “traditional” media sources. Social media are adding a new ingredient to and level of impact on the educational political and policy-making process that is still in its infancy in terms of research and relevance. In this chapter, we examine the high-level social side of social media (Twitter) in an effort to analyze, visualize, and make sense of the often hidden world of online interactions around educational policy. In addition, we look deeply into the ways in which messages and meaning are crafted in social media space around the Common Core State Standards, with special attention to the role of bots and how influence is wielded. This work offers insights into the what, who, how, and impact of transactions among “socially influential” individuals over time in this new social media/educational policy space and potential impact on educational policy-making and practice.

Rarely are we as scholars provided a forum in which to reflect on our work. We typically publish articles that come out a year after we submit them, and by the time they are in the world, we have moved on to other projects—and so the process goes. We consider this opportunity to reflect on our work on social media and consider what it means for the current discourse around educational policy to be a special opportunity, and one that we hope invigorates and catalyzes the conversation in this space.
It has been almost a year and half since we first published the updated version of our website hashtagcommoncore.com about the role of social media and its influence in wider educational policy debates focused on the Common Core State Standards (CCSS). However, the increasing role of social media in wider society, particularly around policy, is an important area to reexamine. In this reflective chapter, we share a bit more about our thinking and big findings from the project highlighting what we see to be the critical elements to attend to in this new era. We argue about the importance of the social in social media as a foundational grounding and how this new space is connected to policy and politics in education.

CCSS was one of the major education policy initiatives of the early 21st century, sought to strengthen education systems across the United States through a set of specific and challenging education standards. Once enjoying bipartisan support, the controversial standards became the epicenter of a heated national debate. In our work on the Common Core (Supovitz, Daly, Del Fresno, & Kolouch, 2017), which spanned 36 months, 190,000 users, and close to a million tweets, we examined the intense debate surrounding the reform as it played out on Twitter. By studying the Twitter conversation surrounding the Common Core, we shed light on the ways that social-media-enabled social networks are influencing the political discourse that, in turn, contributes to public policy.

We undertook this effort because we live amid an increasingly dense, technology-fueled network of social interactions that connects people, information, ideas, and events, which inform and shape our understanding of the world around us. In the last decade, technology has enabled exponential growth in these social networks. Social media tools like Facebook and Twitter are engines of a massive communication system in which a single idea can be shared with thousands of people in an instant (Rehm, Manca, Brandon, & Greenhow, 2019, this yearbook).

Twitter, in particular, represents a compelling resource because it has become a kind of “central nervous system” of the Internet, connecting politicians, journalists, advocacy groups, professionals, and the general public in the same social space. Twitter users can share a variety of media, including news, opinions, web links, and conversations in a publicly accessible forum. The Common Core standards have consistently generated a high volume of activity on Twitter. Hashtags (#) are used on Twitter to mark keywords or topics of interest to users, and hashtags related to the Common Core—in particular, #commoncore, #ccss, and #stopcommoncore (the three from which we drew our analyses)—have consistently generated 30,000–50,000 tweets per month over the period of our study. While topics tend to trend and fall on Twitter, debate using these three hashtags remained constant well into 2017.
To understand the Common Core network and the discussion coursing through it, our research combined social network analysis and linguistic analysis to produce a distinctive combination of lenses that allow us to examine the debate both from the outside in, and from the inside out. Pairing social network analysis and linguistic analysis provided us a unique vantage point to gain insight into the ways in which social-media-enabled social networks are producing and disseminating the political discourse that influences public policy.

The powerful thing about social network analysis is that it makes visible the patterns of communication in social networks that are otherwise invisible to either those interacting within the networks, or those observing them from the outside. Regardless of whether they are networks of neighbors talking across backyard fences, friend networks on Facebook, or professional networks in business, social networks are mostly invisible to the naked eye. Even though specific dyadic relationships may be experienced, the full network context in which they are embedded may not be visible to any single actor without a social network approach. Despite being unseen, the ideas, opinions, and information streaming through these networks can be very consequential, in terms of both the content and with whom it is being shared. These sources help form our beliefs and opinions, which form the basis for our convictions and subsequent actions.

Looking closely at the Common Core tweets using linguistic analysis is similarly revealing. By examining how participants articulate and frame the Common Core reform, how they craft metaphors to represent their views, and what lexical choices they make, we gain insight into the psychology that motivated their participation in the conversation. Linguistic analyses can provide a deeper understanding of participants’ underlying motivations, their levels of conviction, and even their state of mind. We conducted linguistic analyses on individual tweets, the body of activity of particular actors, and even social groups to better understand how interest groups build coalitions in the social media era and what we can learn about policy and politics in this new space.

We investigated the Common Core debate through the lenses of both social network analysis and linguistic analysis, and we based our work on data from almost 1 million tweets sent over 2 1/2 years by about 190,000 distinct actors. We have organized this reflective chapter to provide the reader with a background on the social side of social media, the role of politics, and the big lessons that we took from the project, which have applicability to the role of social media and policy in the modern world.
DATA, DATA EVERYWHERE AND TOO MANY DROPS TO DRINK

IBM estimates that we create 2,500,000,000,000,000,000 bytes of information each day. The volume of that amount of data is impressive, but the velocity at which it is created is equally staggering. Data velocity estimates suggest that for every minute of every day, 204,000,000 emails are sent; 72 hours of YouTube video are uploaded; 216,000 Instagram photos are posted, and, most important for our research, around 300,000 tweets are tweeted. The volume and velocity of the data are incredible, but the variety of the data is equally staggering.

Within any 24-hour period, the data generated can include text, audio, video, clickstreams, sensors, and a host of other forms entered by human, machine, or bot. Out of all that production, IBM estimates that 90% of the data are “unstructured,” meaning that they are a seemingly random collection of photos, videos, tweets, and logs that are not ordered in any particular manner, nor organized for easy analysis—which makes the job of working in this space challenging. The volume, velocity, and variety of data generated on the Web provide an incredible research opportunity. Because we live in an increasingly connected and interconnected world, we need new and unique ways to start to make sense of it all and search for important signals in the noise. To find these signals, we drew on network science to guide our research.

THE “SOCIAL” IN SOCIAL MEDIA

Our first question is: How do we parse out and make sense of the information flow and meaning making that take place within the growing social media space? Our argument is that, given the ubiquity of online activity and its incorporation into our “real-world” lives, it makes increasingly less sense to think about “offline and online” worlds (Rainie & Wellman, 2011). This has led us to argue that in reality, the offline and online experiences just reflect a larger social continuum in which individuals interact, access resources, and make sense of their world. The important idea from our vantage point is the need to better understand the “social” aspect of social media.

We are social, meaning-making creatures and have been since the dawn of time. In fact, our survival and evolution were based squarely on the idea that we looked out for one another and worked together to shelter ourselves, hunt for food, and raise families. While we did so in a decidedly offline manner, our lives today are just as social, even though in many ways we have traded bricks for bytes and face-to-face for screen-to-screen.
Today, when we seek shelter, we turn to members of the TripAdvisor tribe to support our efforts. When hunting for food, we may take advice and insight from the highly valued Yelp clan. Consider how much of our daily lives and how many of our decisions take place and are influenced by others in a social space. This is not to say that we don’t reach out to tribe members in the “real world”; of course we do, but now we have access to a larger set of actors who are connected and can provide us resources. In this iteration of our research, we have taken this social idea to the next level by portraying the set of social ties and the tone of messages exchanged to seek insights. We intentionally chose to privilege the social side of social media and use a sophisticated set of network methods to reveal the often hidden world of relations and make sense of what is being transacted.

From a social network perspective, we are interested in the structure and pattern of relationships that form as individuals interact in a given space. The network perspective is grounded in pairs, or dyads. The interactions between two individuals and triads, which form the building blocks of networks, can expand to include thousands and even millions of individuals (James, 1990). Examining the structure that results from these interacting dyads can lead to insights about socially influential actors, subgroups of people, and even individuals who are on the periphery of the network. Our starting point for this work is the relationship, and that differentiates our work from other equally important endeavors that may start from a more individual perspective.

A DUAL PERSPECTIVE

In previous iterations of our research, we focused almost exclusively on the network aspect of the work, and as our thinking and analytic capacities grew, we knew we needed to examine the collective set of interactions and specific individuals. In this sense, our current work weaves together both a sociological and a psychological approach to provide a different level of insight than we may be able to receive from privileging just one perspective.

A more integrated (sociological and psychological) perspective as to how an important educational policy plays out in social media space provided us with additional analytic purchase. A great deal of work attends to the psychological/individual aspects of actors, which has been critical in our understanding of a host of phenomena. This important research focuses on beliefs, perceptions, expertise, education, pathology, and so on, all rooted within the individual. Although the context may
be considered, generally speaking, it is not necessarily a core focus of a more psychological approach. We may consider elements such as beliefs and emotions as properties of the individual, and we can examine these properties in an attempt to understand behavior, outcomes, and those instances in which things go or don’t go according to plan. Efforts from this scholarship and practice have produced critical insights and helped to construct a predominant view of the world in which most events are explained through properties of the individuals.

Although the more psychological approach is grounded in the individual, a sociological perspective focuses more on the interaction of individuals with others in groups or beyond. At its core, in an overly simplified version, the idea of the social connections starts with a pair or dyad of individuals and then branches out to a triad and on to a larger system (James, 1990). The important idea here is that networks of connections surround all of us and create a much larger social eco-system, which may influence us in ways in which we are unaware. This notion is what drove much of our previous work and still serves as the foundation of this effort; the difference is that we are now adding in concepts and work from the psychological tradition and mixing these two perspectives. Our aim was to unlock what we hoped would be important and unique insights that go beyond what each perspective could bring on its own.

ROBUST AND CONSISTENT NATURE OF THE NETWORK

One of the most striking findings from this iteration of the research was the consistent amount of activity around the Common Core over the entirety of the project. When we started, we were not sure that the tweet activity would be as active, but to our surprise, activity remained strong well into 2017. One of the integral elements of our work was that we were not “creating” networks based on our opinion of how actors may or may not, or should or should not, be connecting; we were “observing” their behaviors in social media space. Focusing on the behaviors of the actors and the subgroups of actors they formed also revealed a few interesting patterns of “behaviors” that, from our vantage point, were worth noting.

One of those patterns was that the subcommunities we identified were strong and consistent. These factions—meaning having more in-group ties than cross-group ties—that we observed in our first cut at the data remained, and we noted the rise of a couple of subgroups that we had not seen initially. The factions that we identified were not based on our a priori descriptions, but on their observed social behavior of tweeting, retweeting, and mentioning. We also noted that many actors actively and intentionally used their networks as vehicles to move ideas and opinions.
NETWORK INTENTIONALITY

Our work at its core also draws on social capital. Two dimensions of social capital have been suggested: structural social capital and cognitive social capital (Nahapiet & Ghoshal, 1998). The structural aspect of social capital addresses the network of social relationships that surrounds an individual and offers opportunities for the exchange of resources, which we have drawn on to examine key influencers and structural communities. The cognitive aspect of social capital encompasses the norms, values, attitudes, beliefs, and narratives of an actor, influencing meaning making and the ultimate actions of that particular individual (Krishna & Uphoff, 2002). We have also included ideas from psychology to enable us to think more deeply about cognitive social capital and round out our analysis.

The cognitive aspects of social capital are believed to affect the formation of social relationships (Obstfeld, 2005). For example, in a school undergoing major reform, it is possible that educators’ interpretations of, and beliefs about, the change process may differ—first about the specific reform effort itself, and second about the people they need to approach to understand the new expectations and exchange the necessary information about the reform. This in turn may affect the way in which educators collaborate, and with whom, in terms of making sense of the reform effort.

This idea about the role of social influence on beliefs—and, ultimately, behavior—is well demonstrated by Christakis and Fowler (2009) in their outstanding book Connected, and in numerous articles. They argue in a number of excellent pieces that many aspects of our lives are socially influenced, including in such diverse areas as happiness, weight gain, and smoking. So, it also follows that our connections in social space may also influence our beliefs on such topics as the Common Core, or the role of government in our lives, as we have demonstrated in our research. The way in which individuals think about certain shared topics (e.g., their values, norms, beliefs, relationships) may shape and reflect their social behaviors and the behaviors of others with whom they are connected. We are influenced not just by those with whom we have a direct connection, but also by those individuals who are one or more steps away from us, or even those we want to have as our friends (Giordano, 2003; Granovetter, 1973). This is what it means to be a part of an interdependent system; it is the interplay between the individual and the collective that yields nuanced insights.

One could argue that actors in the network engaged in a form of “network intentionality” (Moolenaar et al., 2014), meaning that individuals
have varying degrees of intentionality when seeking relationships, serving as a source of advice, brokering relationships between disconnected others, and using social connections to move messages; some act on their networks more or less than others (Burt, 2005). This idea suggests that an individual has agency in terms of forming, brokering, and dissolving social relationships given his or her own perceptions and understandings of what makes for a “good” network to reach goals. We are not merely reacting to the set of relationships that surround us, or blindly influenced; we actually can choose to act on the pattern of relationships should we choose. Success in this endeavor is based in part on understanding the larger network in which one resides, and its influence; regardless, one can be intentional (or not) about forming and dissolving ties. Actors in social media space may have certain beliefs when it comes to forming and amplifying relationships or exchanging resources with others. Individuals who can capitalize on, or be intentional about forming, networks may be better able to position their ideas to reach others in ways that provide a broader forum for their perspectives (Burt, 2005).

An orientation toward strategically connecting others (e.g. Obstfeld, 2005) and being intentionally involved in leveraging social relationships may in fact allow some ideas to gain greater traction than others. Research outside the social media space suggests that individuals with greater ability to actively make and sustain relations are perhaps in a better position to access unique information, make meaningful connections, and disproportionately influence idea flows (Felicio, Couto, & Caiado, 2009). The combined idea of structure, social influence on beliefs, and network intentionality seems to be a unique thread in our research. We also noted another strategy at work in this new social media world.

MUTUAL TIES AND SOCIAL DEBT

Another interesting network science concept that is being leveraged in the social media world is the idea around reciprocity. Reciprocal ties are those that are mutual; for example, if I indicate that I have a trusting or friendly relationship or share a resource of some sort with someone, and he or she also does the same back to me, we have a “reciprocated” relationship that forms after this relational dance (Leifer, 1988). The development of reciprocal ties between actors has been shown to increase trust and lead to the continuation and deepening of relationships (Daly, 2010). For example, in studies of network change over time, one of the most consistent findings is that if someone initiates a tie at Time Point 1, and that time is reciprocated at Time Point 2, the relationship is likely to be present over time. Part of that has to do with idea that individuals
do not like to feel “obligated” to others or in a type of debt; therefore, when someone makes a gesture, the other is likely to return in kind. Although reciprocity provides an opportunity to deepen relationships, it does come with a social “cost” or “debt.” If someone creates a connection with you, there may be an implied social expectation that you act in kind and return the connection.

We saw evidence of reciprocity playing itself out in social media space, with some actors leveraging this network concept with great success. Consider the case of Instagram. Like Twitter, Instagram is a popular social media site on which you can have followers. If one wants to increase the number of followers, one strategy is to create a type of social debt. In other words, you “like” or compliment another person’s picture, and he or she will be more likely to like you back or make a comment. So responsive is this strategy is that there are bots on Instagram (e.g., Instagress) that you pay to act on your behalf. These bots will randomly like other people’s posts and make supportive comments even if you have no idea to whom the bot is connecting. This in turn results in those with whom the bot randomly (and unknown to you) connected liking your posts or even following your Instagram, all thanks to social indebtedness. Individuals who, among other reasons, want to increase their number of followers will pay companies such as Instagress to create a social debt.

THE ROLE OF RELATIONSHIPS IN THE PROCESS

Networks exist in almost all aspects of life, from subways, to communication systems, to ecology, to our brains, and even out to policy, as we have shown in our work. Network science enables us to understand and describe how different elements interact, creating larger patterned structures that are often hidden in plain sight. In our work, we are pushing on the idea that it might not always be the number of followers that matters; in fact, the real influencers may be those with the set of ties and constellation of connections necessary to move and access resources (Frank, Penuel, & Krause, 2015). In this research, we have been studying larger social patterns of how individuals connect and how those connections both inhibit and support access to resources and the movement of ideas; it is this core idea that forms the basis of our project.

As we have argued, we live in an increasingly socially connected world in which people generate data with a breathtaking amount of volume, velocity, and variety. At some point during your day, you likely have connected to a social network to share or find information. Maybe you checked in on friends on Facebook, or tweeted out something of
Technology provides for almost immediate communication and movement of information through interconnected and interdependent communication networks. In a real sense, we live in a networked society, and success in this new space will require a host of new skills and proficiency in social network literacy.

Understanding how to connect to and leverage this larger social infrastructure is critical in moving messages, accessing information, determining veracity, supporting decision making, and connecting with others for discovery, community, and sharing of viewpoints. Although we live in a hyperconnected social world, we do not always systematically and explicitly teach social network literacy skills in the classroom. Those who are able to learn and speak this new tongue or see with this new perspective have an added advantage. Developing fluency and vision in this new language and arboreal sensibility is often left to chance or assumed to be self-evident; however, based on our years of work on this project, we are convinced that, given the ubiquity of networks, the next literacy emphasis must be intentional and mindful instruction around social network literacy.

The role of social in social media is a critical foundation to understanding how policy plays out in these spaces.

**REWIRITING THE RULES OF POLICY ENGAGEMENT**

When we started following the Common Core debate on Twitter in 2013, a multitude of varied opinions were represented. By the middle of 2016, the diversity of perspectives had largely boiled down to different shades of opposition. Based on our analyses, opponents of the Common Core increasingly dominated the Twitter activity over time. Led by the concerted efforts of the Patriot Journalist Network (PJNET) “team,” who viewed the standards as a threat to social conservative values, opponents of the Common Core from outside education came to represent about 75% of the most influential participants in the #commoncore network. Although it is impossible to estimate the exact influence of the Twitter activity on the sentiment of the nation at large, correlation of the trends on Twitter with declining popular views about the Common Core in national polls is too strong to ignore (McGuinn & Supovitz, 2016).

However, there is a difference between politics and policy, and it is in this distinction that the Common Core won the policy war. Although public sentiment and political pressure caused many states to rethink their support of the standards, there was no concerted effort to develop a plausible alternative. To alleviate the political pressure, many
of the states that initially adopted the Common Core standards simply replaced them with their own state standards by essentially rescinding, renaming, repackaging, and reinstituting them. As case studies from Indiana and Oklahoma showed, replacements contained largely superficial changes to details of the sequence of topics and emphases within the Common Core (McGuinn & Supovitz, 2016). Other states, including New Jersey, California, and Florida, simply rebranded the Common Core with their own state monikers to sidestep the controversy. The bottom line was that few, if any, states had the capacity to fundamentally reengineer defensibly different ways of organizing the sequence of topics that children should receive to develop their mathematics and literacy skills.

While the policy decisions are worth plenty of attention and analysis in their own right, the controversy over Common Core was never really about standards themselves. As we demonstrated in our 2015 analysis of the Common Core debate on Twitter, the dispute about the standards was largely a proxy war over other politically charged issues, including: opposition to a federal role in education, which many believe should be the domain of state and local education policy; a fear that the Common Core could become a gateway for access to data on children that might be used for exploitive purposes rather than to inform educational improvement, could be a source for the proliferation of testing which has come to oppressively dominate education, or could be a way for business interests to exploit public education for private gain; or a belief that an emphasis on standards reform distracts from the deeper underlying causes of low educational performance, which include poverty and social inequity.

What the Common Core opposition has accomplished is a push back against the forces that have sought to centralize and cohere America’s education system. Progressive reformers’ arguments, based on evidence from international comparisons, are that common standards and national assessments that overarch state and local systems would produce a more effective and equitable education system. The very design of the Common Core movement, framed as a state-led effort to adopt common standards and common assessments, was an effort to thread the needle of a centrally orchestrated system in a nation fundamentally committed to educational decentralization. If anything, this experience shows that the deep-seated belief in state-led education systems, which draw their strength from America’s profound historical distrust of centralized power, is entrenched in our national ethos. The principle of local autonomy drowned out any discussion about the quality of the standards themselves.
Beyond the specific issue of the Common Core, the experience of watching the dispute about the standards play out in a variety of public forums and state capitals, and particularly through the prism of Twitter, reveals several insights into the changing dynamics of how political debates occur in this country. Here we focus on three ways in which the rules of engagement around educational policy in social media spaces have fundamentally changed and are rooted in the social side of social media.

THE WAY IN WHICH INFORMATION IS PRODUCED AND PUBLICIZED IN OUR SOCIETY IS UNDERGOING A DRAMATIC TRANSFORMATION

The Common Core was the first major education policy reform to come to life in the social media age. The previous major education reform, No Child Left Behind (NCLB), was signed into law in 2002, before the first like on Facebook (2004), before the first video upload on YouTube (2005), and before the first tweet on Twitter (2006).

Comparing the media environment of the NCLB decade and the Common Core era is illustrative. During the implementation of NCLB, the professional media was increasingly splintered. Cable TV gave rise to news channels with both conservative (i.e., Fox News) and liberal (i.e., MSNBC) slants that courted different audiences. Reporting of events increasingly blended with the opinions of pundits and surrogates. In this raucous environment, it became more and more difficult to discern which were the mainstream media outlets, and where once unquestioned and authoritative news sources like The New York Times, The Washington Post, The Wall Street Journal, and CNN stood along an increasingly disparate continuum of news sources. Yet, even as this splintering of the media speaking to different ideological factions occurred, there remained a professional media whose outlets were the “official” sources of information disseminated to Americans.

The rise of the social in social media has changed the landscape in at least two profound ways. First, stories that become “news” are increasingly introduced into the public’s consciousness through unfettered and unverified alternative sources via the Internet and social media. Organizations and individuals can directly and widely disseminate information unvetted by formal sources. This loosening of the hold of the “professional” media on information has led to broader reporting of activity and events, but also has had the effect of increasing unsubstantiated, exaggerated, and even outright fake news stories. In our investigations of the Common Core on Twitter, for example, we identified a number of shady online “news” organizations, like Investor’s Business Daily and WorldNetDaily, that used
the legitimacy of appearing as news sites to overtly push a particular ideological slant. For better and worse, the spigot has opened wider, and what comes out is wholly unfiltered, making the determination of “legitimate” even more challenging.

Second, newsmakers no longer need to rely solely on the professional media to communicate broadly to people. Twitter, Facebook, and other social media platforms are ways for public figures to speak directly to citizens without going through the media middleman. This diminishes the power of the professional media outlets because they no longer have a monopoly on access to the public; it also has the consequence of reducing the professional media’s ability to hold public figures accountable for the messages that they transmit.

FUELED BY TECHNOLOGY, THE STRATEGIES OF ADVOCACY GROUPS ARE BECOMING INCREASINGLY POWERFUL

Our analyses uncovered a number of ingenious strategies employed by partisan stakeholders in the Common Core discourse on Twitter. Canny and tech savvy, these partisan strategies demonstrate the growing sophistication of issue advocates as they learn how to capitalize on the social and technological power of networking mediums. These strategies help to explain how the opponents of the standards came to dominate the political conversation and contributed toward turning the tide of public opinion.

We discovered the first set of approaches as we began to disassemble the data and became increasingly aware of the concerted efforts of PJNET. PJNET used a range of effective tactics that helped them to increasingly dominate the output about the Common Core on Twitter. Most inventive was PJNET’s use of a robo-tweeting technology that allowed it to send messages from the accounts of a range of consenting Twitter users—essentially creating a botnet that integrated robo-tweeting and social networks. What makes this approach so powerful is that it both dramatically increases the volume of the same message and makes it appear that the message is independently sent, when it is really a concerted effort of amplification. PJNET also used clever forms of retweeting and hashtag rallies to bring advocates together to amplify their message. These strategies to harness social networks on Twitter into concerted issue campaigns, both targeting and supported by elected officials, provide a glimpse into how powerful these efforts can be and how they can create enough synergy to grow out well beyond Twitter and into the broader public conversation.
A second noteworthy strategy, which we illuminated, was the way in which Common Core opponents framed the standards as a threat to children and used a range of metaphors to appeal to the value systems of a diverse set of constituencies. We identified five different frames: the government frame, which represented the standards as an oppressive government intrusion into the lives of citizens, appealing to limited-government conservatives; the propaganda frame, which depicted the Common Core as brainwashing children, and in doing so harked back to the Cold War era, when social conservatives positioned themselves as defenders of the national ethic; the war frame, which portrayed the standards as a front in the nation’s culture wars and in doing so appealed to social and religious conservatives to protect traditional cultural values; the business frame, which rendered the standards as an opportunity for business interests to profit from public education, a frame that appealed to liberal opponents of a business exploitation of a social good; and the experiment frame, which used the metaphor of the standards as an experiment on our children and in doing so appealed to the principle of care that is highly valued among social liberals. Collectively, these frames, and the metaphors and language that triggered them, appealed to the value systems of both conservatives and liberals while also contributing to the broad coalition, from both within and outside education, that was aligned in opposition to the standards.

The combination of the Internet and social networks is a powerful tool for interest groups to influence public opinion. We saw evidence that both the messages and the messaging system are becoming more sophisticated. These strategies show how Twitter can be used as an organizing force to bring people together into a grassroots multi-issue influence engine.

The enduring grassroots nature of the activity on Twitter is also surprising. When we completed the analysis for the first phase of the #common-core project in 2015, our bet was that Twitter would be the temporary terrain of a guerilla war of sorts and that the more formal, professional advocacy groups would hegemonize Twitter over time and that the grassroots activists would move on to another platform to stay one step removed from the professional machines. We were wrong. Twitter has remained an open-source grassroots battleground for public opinion. And the fascinating thing is that the individuals and groups that have surfaced have tended to be really motivated and concerned citizens who are consistently active on Twitter and who feel that this medium is the best means for them to express themselves and be heard amid the national clamor. We also underestimated the role of social networks and social influence in the way that these groups coalesced and segmented.
THE AUDIENCES THAT CONSUME “CONTENT” ARE BECOMING INCREASINGLY SEGMENTED

One consequence of the technology-enhanced customization of information sources and the increased sophistication of advocacy strategists is that they offer people both comfortable enclaves and easily consumable materials that reinforce their prior beliefs and protect them from discordant views (Lawrence, Sides, & Farrell, 2010). It is not surprising that people want the validation of information that corroborates their prevailing perspective. Sociologists use the word *homophily* to describe the natural phenomenon that individuals prefer to associate with those who hold similar preferences and worldviews to their own. In other words, people naturally gravitate toward those who hold views similar to their own, and in a world of choice, we are attracted to information sources that are popular with the people with whom we are most comfortable interacting (McPherson, Smith-Lovin, & Cook, 2001).

While the splintering of the professional media and talk radio accelerated the fragmentation of society into increasingly homophilous subgroups, the Internet and social media have exacerbated this phenomenon to the point that we may now be living in a world where members of different subcommunities get most of their information from, and share their own ideas only with, people who share similar belief systems. This fragmentation into homogeneous subgroups, which continually reinforces members’ belief systems, is a sort of voluntary social segregation that reifies prevailing beliefs. While politics may be a source of our division, it is not the only indicator of our segmentation.

In our research, we saw homophily at work in the subcommunities that formed during the Common Core debate on Twitter. Our research indicated that people tended to interact far more with those who held similar views than with those from different groups—all identified by “observing” their behavior in social space.

What are the implications of this naturally occurring phenomenon of people breaking into subcommunities and sharing their politics and culture within like-minded groups? First, we shouldn’t so readily assume that our beliefs or perspectives are in fact shared across the country or even in our own backyard. Second, although politics are convenient ways to display our divisions, consider that these separations are operating in much less visible, and equally important, ways within our own society. In fact, physical proximity may become less important to the increasing fracturing of society as we move more easily between the social continuum of physical and virtual worlds (Hampton, 2016). It is telling to note that the PJNET “team” of synchronized actors interacted completely in virtual space, and
team members never met each other in person (M. Prasek, personal communication, January 4, 2017).

Third, and perhaps the most important implication of all, is that the fragmentation of people’s personal, political, and cultural experiences provides us with fewer opportunities to be exposed to either common stimuli (the things that unite us) and the ideas and views of others (the things that make us more understanding of different perspectives). In fact, there is abundant research to show that people who only interact with those who share similar views become more polarized in their perspectives—regardless of whether they are liberal or conservative—than those who have opportunities to hear alternative perspectives (e.g., Flaxman, Goel, & Rao, 2016; Gastil, 2008; Schkade, Sunstein, & Hastie, 2007). The fragmentation of our worlds into cliques of ideologically familiar others is a problem without a sufficient counterforce of opportunities to hear from others who hold different views than our own, which holds the greatest promise for learning, change, and growth. That was abundantly evident in our analysis of the subgroups in the networks.

Bringing all three points together yields new insights for our research. First, the ways in which information is produced and made public is undergoing a dramatic transformation; the volume and diversity of information sources are expanding, and consequently, the quality and veracity of information are suffering in the process. Second, the missives and dissemination tools of the messengers are becoming more sophisticated as they capitalize on psychological influence techniques to better use social networks to ripple messages outward. And third, the audiences who consume the content are becoming increasingly segmented. This seems like a recipe for further rending of the fabric of society.

In our work, we have considered the intersection of the social in social media and its role in educational policy debates and discourse. In the previous sections, we have provided the network perspective and the influence of politics and policy. Now, in the final section, we offer the reader some big lessons or takeaways that we pull away after reflecting on this work.

LESSONS LEARNED

Our research examined almost one million tweets about the Common Core from about 190,000 distinct actors across over 32 months as documented in hashtagcommoncore.com. Our findings show how political debate in the age of social media is being transformed in substance, sophistication, and strategy through social networks and the social part of the world. By examining contemporary political debate through
a combination of social and psychological perspectives, we reveal insights into the way the world works that are often hidden in plain sight. In this section, we will share our reflections on the lessons learned from this work as they apply to our thinking about social media and policy today.

A social network perspective shows a vibrant world of expanded social interactions that are hiding in plain sight. Social networks permeate the world and connect people with invisible bonds that form complex and subtle interrelationships. Becoming more aware of the relational connections of these social networks opens up a rich set of interrelationships that includes entire networks, naturally occurring subgroups, and highly influential individuals who are prominent because of their social resources and strategic connections. In our investigations of the Common Core discussion on Twitter, we found that the pattern of social ties connecting these layers in the Common Core network were both active and sustained. The networks have both a specific content and structure, and it is in the interplay between these two that we gained many of the insights about how advocates in the space were operating and using the network principles to amplify and move their messages in order to draw maximum attention to their viewpoints. These invisible online and offline networks surround and influence us every day in ways we are seldom fully aware. Absent a way to make these networks, their actors, and the activity visible, we would not fully grasp the breadth, depth, and growing influence of social networks on public opinion and social policy.

Influence comes as much from who you know as from what you know, and increasingly, who you know determines what you know. The simple number of followers for social media profiles is the standard metric to assess an individual’s influence. The greater the number of followers, the more influence one is thought to wield. The follower metric now has both monetary and prestige value; resources flow disproportionately to those individuals based solely on the count of followers. Although many of these “opinion leaders” “earn” their followers, a sizable number engage in a host of behaviors to game the system. The Internet is replete with ways to increase the number of followers, including the outright “purchase” of individuals or through other techniques such as creating social debt. The rounding up of followers and advertising on social media is a major industry estimated at $24 billion a year flowing into the pockets of highly followed individuals. However, our work suggests that the number of followers is just one metric of influence; a host of actors who we identify in our work (including transmitters, transceivers, and transcenders) do not necessarily have large numbers
of followers but nevertheless wield tremendous influence because of their set of relationships and interactions in social space that remain invisible unless illuminated by analysis (Del Fresno, Daly, & Sanchez-Cabezudo, 2016).

Our work suggests that social influence spreads through connections, and these sets of ties are a powerful shaper of opinion. The idea that opinions are shaped and honed through the ecosystem of relationships that surrounds us provides an additional perspective beyond the common notion that our opinions, and perhaps how we come to know the world, are properties solely of the individual. Our work offers a supplementary explanation as to how opinion is shaped and understanding is gained, expanding on the idea that it is less about what you know, but more about who you know and how those relationships influence, or even determine, what you know. The interplay between the individual and the network is a powerful and influential one, and examining just one or the other may limit our understanding.

The Common Core debate on Twitter reveals how social media is transforming political discourse in America. The rise of social media has changed the political landscape in several profound ways. Most directly, stories that become “news” are increasingly introduced into the public’s consciousness via alternative sources on social media. Using this avenue, individuals and organizations can disseminate information unvetted by formal sources. This loosening of the hold of the “professional” media has led to broader reporting of activity and events, but also has the effect of increasing unsubstantiated, exaggerated, and even outright fake news stories. In our examination of the Common Core on Twitter, we saw multiple examples of these phenomena at work and identified a number of alternative online “news” organizations that used the legitimacy of news to overtly push a particular ideological slant. For better and worse, the spigot has opened wider, but what comes out is often wholly unfiltered.

The combination of social and technological advocacy strategies have ratcheted up the power of external political pressure groups. Motivated Twitter users have begun to employ savvy strategies to further the influence and reach of their messages. Our investigations unearthed creative uses of botnets (automated tweeting robots that exploit networked systems), the Twitter retweet function, and hashtag rallies (bringing people together online to flood the system with advocacy messages). These strategies show that invested parties, both domestic and foreign, are making a concerted effort to disseminate information in intentional ways with specific goals. These strategic technological methods are fueled by the power of network techniques, which take advantage of how social networks operate. Actors who capitalize on network concepts leverage
sets of relationships, hubs of influence, and flows of opinion to move messages effectively through a system. The actors in this space who can fluently speak the language of networks are more able to position their ideas and spread their messages.

**The consumers of political content are becoming increasingly segmented, reducing vital opportunities for engagement with ideas.** The Internet and social media provide people with a plethora of customized news and information sources. One consequence of this disparate range is that they provide people with all too comfortable spaces where they can consume only the information that reinforces their prior beliefs and protects them from alternative perspectives. Although it is not surprising that people want the validation of information that confirms their prevailing views, the splintering of the professional and social media has accelerated the fragmentation of society into separate subgroups who live in increasingly disparate worlds. This fragmentation continually reinforces members’ beliefs in a form of voluntary social segregation. In our research, we saw this phenomenon at work in the subcommunities that formed during the Common Core debate on Twitter. The behavioral choices of Twitter participants, in terms of whom to follow and what to retweet and mention, revealed that people tended to interact far more with those who held similar views than with those from different factions.

One implication of the hardening of people’s personal, political, and cultural experiences is that they are provided with fewer opportunities to be exposed to common stimuli (the experiences that unite us) and the ideas and views of others (the perspectives that make us more understanding of different vantage points). Individuals who only interact with those with whom they share similar views become more polarized in their opinions, regardless of whether they are liberal or conservative, in contrast to those who have opportunities to hear multiple and alternative perspectives.

**Issue framing is a powerful way for advocates to appeal to the value systems of constituency groups to evoke their support.** Political groups that seek to win an audience’s backing strategically choose to emphasize particular aspects of an issue in order to give their side an advantage and mobilize their constituencies. In our analyses, we observed a number of ways in which Common Core opponents framed the standards as a threat to children and used a range of metaphors to appeal to the value systems of a diverse set of constituencies. Frames and the metaphors, and language that triggered them in this social media space but used well beyond, appealed to the value systems of both conservatives and liberals; they also contributed to the broad coalition, from both within and outside education, that was aligned in opposition to the standards.
Twitter is a uniquely powerful tool for disseminating information, but its structure lends itself to manipulation. Twitter is essentially a two-dimensional dissemination engine uniquely capable of instantaneously spreading information across the world and creating the structure for members to interact. Whether originating in Connecticut or Costa Rica, a tweet can be written, sent, read, and retweeted thousands of times in mere moments, essentially without barrier. With enough followers or social connections, or through the act of sending a resounding enough tweet, there are virtually no limits to how far, fast, and ferociously a message can travel.

However, for all its power, Twitter comes with a definite hitch. Because of its structure, individuals or groups can easily manipulate the environment, particularly when intent on furthering a specific message (Torphy, 2018; Torphy & Drake, 2019, this yearbook). Unlike a Facebook account, one or many Twitter profiles can easily be manufactured. Individuals frequently use pseudonymous accounts and bot programs to spread their message and amplify their voice. In this project, we found that groups have discovered ways to co-opt genuine accounts to produce mechanized hubs that disseminate messages at regulated or random intervals. More than that, these groups are doing so in ways that keep their strategies hidden from view, making their participation seem random and coordination nonexistent. The structure of Twitter is a powerful conveyor of information but has weak safeguards against misappropriation and the spread of misinformation.

Paradoxically, even as we have more information available to us, we are less informed. We are awash in data, information, ideas, and opinions in a way that is unlike any other time in history. Estimates are that the amount of data created in the last few years alone is larger than during the entire course of recorded human history. Given the sheer volume of information that we receive, one would surmise that we would be more informed and, as a consequence, able to make better decisions. However, the opposite appears to be true. In this project, we saw how the sheer volume of data and opinion that floods over us each day leads to a hardening of opinion and a narrowing of perspective, as a host of conflicting information and diametric arguments muddies the waters.

The volume of data thrusts the ordinary citizen into the role of arbiter, forced to distinguish between fact, fiction, and falsehood without clear guidelines as to how to delineate these categories. This results in idiosyncratic rules for assessing the veracity of information and the notable rise of individuals and groups leveraging this new reality to move an agenda often beyond the scope of awareness. The findings from our research remind us of the growing reality that we spend more time in
echo chambers, and the sounds that reverberate make us no more informed than when we entered. Ironically, the increase of information is not providing us with better insights, but rather fogs our lenses and distorts our focus.

**FINAL THOUGHTS**

The last couple of years around this project have been important ones as the work has opened up new and potentially high-leverage areas. We were able to bring the intersection of education policy and social network theory and analysis to life in a more nontraditional academic manner. We “flipped the script” on the research endeavor by leading with the public-facing work of the website and engaged the wider community first with the project. We wanted to catalyze discourse and interaction around the space as a way to highlight the work and the lessons learned. That task was not an easy one because we did not realize what it meant to fully jump into the public pool without the same tools at our disposal that the actors who we were studying wielded quite effectively. However, no matter the challenges and obstacles along the way, we learned, grew, and strengthened our understanding, and our work as scholars is better for the effort. We can no longer hide behind only rigor; we also need relevancy in our work, and it is to that lofty goal we have dedicated this project.

We did publish papers on this work in traditional academic outlets, but that was not our leadoff because we wanted to truly engage and stimulate the field. What really struck us about this process is that if we added up our collective citations to our existing work, we would not come close to the direct impact and exposure this work has generated in terms of hits, press, and publication. This project represents a small step toward the larger idea of engaging the public in discourse around important issues that go well beyond the Common Core and face all of us each day.

The ubiquitous nature of technology continues to play an increasing mediating role in the way that individuals and societies access and perceive reality. The advent of social media created a new ecosystem of communication that has begun to threaten or even destroy traditional media communications, which for a long time held a monopoly on information and its flow. In the current climate, both mass and social media cohabit, creating a new information ecosystem that reflects the emergence of a single social and communication continuum. Within this ecosystem coexist both information and misinformation, each holding similar status; news stories and fake news now hold equal
sway, as our research suggests. This coexistence affects how individuals, communities, and societies perceive and understand reality and how people ultimately behave based on their understanding. In this new social continuum, data information, knowledge, and even falsehoods move in a “networked” way.

We all now live in a world where the enormous amount of (mis)information available creates the unprecedented paradox of not being more or better informed, but actually less so. Though this violates the common conception that knowledge is dependent on the availability of information, it is becoming clearer that an abundance of access to information may have the reverse effect. The explosion of information seems to have generated an increased need to make better and more efficient decisions, thrusting the individual into the editorial role. More access to “information” may actually generate the potential for ambiguity, misinformation, and uninformed risk taking. This information overload creates the conditions for poor decision making, or at least more arduous decision making, putting the consumer in a position to determine his or her own truth based on an ever-expanding library of sources. This is occurring not just for the average citizen, but also for high-level decision makers tasked with making political, economic, and educational policy decisions.

It seems that the oft-quoted phrase “information is power” is no longer applicable, that the idea must be changed to fit our post-Internet reality. Unfortunately, in a sense, “misinformation is now power,” as we seem to be losing our grip on traditional conceptions of “truth.” What was once fact now seems to carry far less weight, even coming into conflict with what is certainly false. In a slightly unnerving way, we now live in a post-truth era, particularly in politics (Del Fresno & Daly, 2018), and particularly for education policy as we argue around the Common Core. As an example, once our work was finally publicized, much attention was paid to PJNET, with a number of news stories; this resulted in the banning of PJNET from Twitter. In many ways, as we discussed earlier, this outcome provided support for our rather unconventional move of putting the research out in the public sphere before publishing in more traditional academic outlets. To feel in some small way that our work catalyzed action in this contested space was very validating and, honestly, surprising. Policy in education and beyond in this current era is being created and furthered by the confluence of fact and fiction, information rampant on both sides of every debate and used to further individual ideologies—and they are spread through social means. Social media is important and will continue to play a role in politics and education policy, at least for the foreseeable future.
(Supovitz, Daly, & Del Fresno, 2018), and we ignore that fact at our own peril. Not attending to this space or writing it off as not relevant may well be a great error and a wasted opportunity for researchers, practitioners, and policy makers.

NOTES


2. Sociology and psychology are, of course, cousins, but teasing them apart to recombine enables some additional clarity in our approach.

3. Of course, anthropology and many other fields also offer us critical insights in the social space as well, but our work draws more on sociological constructs.

4. It should be noted that these findings are not without controversy (see Lyons, 2011).
REFERENCES


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