


Summer 2014

Microblogging as a Facilitator of Online Community in Graduate Education

Vincent Anthony Rhodes
Old Dominion University

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**MICROBLOGGING AS A FACILITATOR
OF ONLINE COMMUNITY IN GRADUATE EDUCATION**

by

Vincent Anthony Rhodes
B.S. May 1993, James Madison University
M.A. May 2003, Old Dominion University

A Dissertation Submitted to the Faculty of
Old Dominion University in Partial Fulfillment of the
Requirements for the Degree of

DOCTOR OF PHILOSOPHY

ENGLISH

OLD DOMINION UNIVERSITY
August 2014

Approved by:

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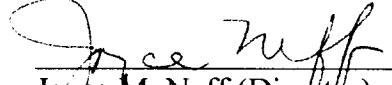
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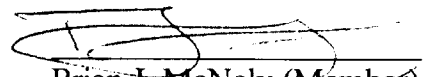
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ABSTRACT

MICROBLOGGING AS A FACILITATOR OF ONLINE COMMUNITY IN GRADUATE EDUCATION

Vincent Anthony Rhodes
Old Dominion University, 2014
Director: Dr. Joyce M. Neff

Part-time and distance-learning students can experience a sense of isolation from their peers and the university. Concern about this isolation and resulting student attrition has increased in the midst of explosive growth in online course enrollments. One possible solution: building a stronger sense of community within the online graduate classroom using microblogging technology such as Twitter. Unfortunately, scholars across disciplines define community in different ways with some rejecting the concept altogether in favor of other theoretical constructs. And, few scholars have examined the notion of online classroom community from an English Studies perspective exploring the rhetorical exigencies that underpin this concept. Scholars often write about online community in aspirational terms and fail to demonstrate its existence empirically (Kling and Courtright, 2003).

Through the application of two existing pedagogical theories (Rovai's (2002) concept of classroom community and the well-established Community of Inquiry framework) this dissertation empirically documents the existence of online classroom community in two cases studies of graduate distance-learning summer sessions. This mixed-methods research study then demonstrates that microblogging technology is capable of both supporting and facilitating the growth of that sense of online classroom community. Because it stands at the convergence of a student's academic and personal

interests, social media software such as Twitter — whether used as a front- or backchannel to the course — is uniquely positioned to serve both as a virtual third place and as a venue for exercising Brooke's (1999) writing underlife activities and extending Mueller's (2009) notions of where and how these activities can be played out in a digital context. Finally, this dissertation also offers a five-part alternative definition of online classroom community that strongly links the digital space itself with the affective/emotional concerns addressed in some other theoretical constructions of community.

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This dissertation is dedicated to Kevin Douglas Maskrey, my partner, in appreciation for his love and support throughout our journey and to Ina Ambrose, my grandmother, with special thanks for making my undergraduate and graduate education possible.

ACKNOWLEDGMENTS

I must first acknowledge my partner, Kevin Maskrey. Without him this journey would not have been possible. His patience through all the classes, all the writing, and all the “writer’s block,” has been much appreciated. He has always taken pride in my academic pursuits and encouraged me to keep going. I am not just a better scholar because of him. I am a better person. There’s so much more I could say to and about you, but there simply aren’t enough words. I love you.

My grandmother, Ina Ambrose, also played a big part in my quest to earn my doctorate. Without her financial assistance and encouragement, my undergraduate and graduate education would not have been possible. Thank you for your pride in my accomplishments and for your love.

My dissertation chair, Joyce Neff, kept me on the path — with words of encouragement and swift kicks, as needed. Although she’s quick to say that I did all the work, I know the truth. From the time I participated in her Methods and Methodology course, I have valued her ability to keep an eye on the big picture and know exactly what to say to keep graduate students on-track and keep their self-induced anxiety to a minimum. She taught me to enjoy the journey and persist even when the research context got “messy.” Some of my fondest memories from this process have been sitting in her office discussing my research. I always left those meetings energized and ready to conquer the world. I could not have asked for a better mentor and role model. Thank you for teaching me how to be a scholar.

I also am indebted to my dissertation committee members, Brian McNely and Shelley Rodrigo. Their thoughtful questions and wise comments pushed me to construct a better argument. Their encouragement of and belief in this project (and me) kept me motivated and made it possible to complete this dissertation. Thank you for your enthusiasm and guidance. And, thank you for your willingness to serve on my committee.

This research study would not have been possible without the professors who introduced me to the use of Twitter in the classroom. Thank you, Liza Potts and Kathie Gossett. I enjoyed your courses and am grateful to have found a rich topic for research as a result. Thanks also to Kathie Gossett for a great dissertation seminar and candid advice on surviving the process.

This dissertation would fail without robust data archives to analyze. I am ever grateful that John O'Brien III decided to invest time in the "fun weekend hack" that became TwapperKeeper. Without that web service and the open source version, yourTwapperKeeper, this study never could have happened. I also thank him for his willingness to communicate via Twitter and e-mail to discuss my Twitter data collection challenges. Thank you for your openness and for helping a struggling PhD student.

I know next-to-nothing about virtual servers and Linux commands. Thankfully, Dr. Julie Meloni knows quite a bit. Her help with setting up a cloud server, installing yourTwapperKeeper, and providing me with a cheat-sheet of Linux commands to restart the virtual server as needed made it possible for me to collect my second archive. Thank you for taking pity on doctoral student in need. I appreciate your assistance more than you will ever know.

Additionally, I must acknowledge my Dissertation Seminar colleagues — Sam Evans, Carmen Christopher, and Dave Jones — and the ODU Dissertation Boot Camp Facebook group — Beth Bensen-Barber, Rachel Lanier Bragg, Laura Buchholz, Jennifer Buckner, Diane Cooke, Angela Harrison, Jamie Henthorn, Megan Mize, Sarah Mosely, Laura Niswonger Bowles, Erin Pastore, Danielle Roney Roach, and Cheri Lemieux Spiegel. Although we “met” more sporadically than perhaps we would have liked, our online community kept me going and offered critical emotional and academic support. It was likely the cheapest (and best) group therapy available. You embody what this dissertation hopes to describe. I want other part-time and distance-learning students to have the same opportunity that we did to forge strong bonds with peers through a variety of digital channels. I want other part-time and distance-learning students to find the mutual support, the intellectual nudges and the pushes for excellence that you provided me. I want them to find online community. Thank you all. It has been a pleasure to be in the physical and virtual company of talented scholars like you. You continue to fascinate and amaze me with your areas of study and your intellectual abilities. I’ll miss our digital Fireside Chats. Or, maybe I’ll just keep showing up — if you’ll still have me.

Finally, thank you to D. Randy Garrison for permission to include the Community of Inquiry diagram and to I. Ellen Seaman for permission to include online enrollment data and description tables in my dissertation.

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CHAPTER 1

INTRODUCTION: STUMBLING UPON ONLINE COMMUNITY AND A DISSERTATION TOPIC

Pursuing my doctorate as a part-time student who works full-time as a public relations and marketing professional has been challenging. Aside from the obvious time-based difficulties (scheduling; allocating extended time for reading, research, writing and completion of course assignments; etc.), I recognized a less tangible obstacle — making a strong connection with my peers and instructors.

As a part-time member of the first cohort to enter Old Dominion University's English doctoral program, I have watched as my peers (who are largely full-time students) moved more quickly through their coursework. Within a few semesters, I met some members of the second cohort and eventually some members of the third. While I have developed a strong friendship with a few of my peers, I cannot say that I felt a strong sense of "community" on the whole. Since official student activities frequently were scheduled during my work hours, I have not been able to participate often. And, because I typically found myself on campus only one night a week (for roughly three hours), I did not have broad exposure to many faculty members in the department. In fact, I generally only encountered the professor(s) from whom I was receiving direct instruction.

In this regard, my experience as a part-time, on-campus student is similar to that of distance learners engaged in my PhD program. That similarity led to my research interest in online education and the challenges faced by students engaged in distance

learning. Considering that they are often far-removed from the main campus, opportunities for online students to encounter faculty or fellow students is generally limited to two-way video conferencing during class times and to “official” asynchronous channels such as e-mail or Blackboard discussion boards. The potential for isolation becomes even more concerning when considering the number of college students engaging in online learning is growing dramatically. In this chapter I will provide an overview of my dissertation study. Having introduced the problem of isolation experienced by distance learners, I will briefly introduce the concept of online community and outline the challenges associated with identifying that community within online courses. Next, I will elaborate on the scope of this problem by highlighting the explosive growth of online learning registrations over the last decade. I will then present an overview of my research study rooting it in rhetoric and composition studies before concluding this introduction by outlining the remaining chapters of my dissertation.

Defining Community

The definition of the term “community” is seldom agreed upon. It may range from a definition of a Community of Practice (see Lave and Wenger, 1991) that constructs such a group as a “collection of individuals sharing mutually defined practices, beliefs and understandings over an extended timeframe in the pursuit of a shared enterprise” (Barab et al, 2001, p.76) to a simplistic definition of an online community as an “online space that provides for overt communication between a group of people (the embodiment of community)” (Bradshaw, Powell & Terrell, 2005, p. 206). I will return to consideration of the definitions of community in chapters 2, 5 and 6 of my dissertation.

Rovai distills various definitions into “ the most essential elements of community: mutual interdependence among members, sense of belonging, connectedness, spirit, trust, interactivity, common expectations, shared values and goals, and overlapping histories among members” (2002, p.4). Rovai further refines this into a definition of online classroom community (to be discussed in Chapter 2) that will be used as the basis for a portion of my analysis and to stand in comparison to my own conceptions of online classroom community. The key differences between our theoretical stances will likely find their root in our differing disciplines — education as opposed to rhetoric and composition.

Kling and Courtright (2003) observe, “many uses of the term *community* are, in fact, aspirational rather than empirically grounded” (225). As a result, it is important to note that we do not know how often community actually develops in classrooms and that assumptions that community exists in many or even most classrooms may be incorrect (Cook D.L., 1995). While it is possible to maintain community online, it should not be taken for granted (Haythornthwaite et al, 2000).

Community cannot be mandated; instead being developed from the inside out (Cook D.L., 1995). As a result of the physical separation between participants, the reduced visual cues afforded by the distance-learning environment may contribute to an increased feeling of isolation and disconnectedness in learners (Liu et al, 2007). Some course designers attempt to compensate with various synchronous or asynchronous communications technologies. Electronic tools, however, do not define community; rather the partnerships and interactions between participants foster or hinder development of community in an online environment (Lee, 2006).

It is important to remember that these technologies do shape the way we think and approach a task and, in the case of social networking tools, foster interaction, collaboration, and contribution (Gunawardena et al, 2009). Whether emergent or designed, online community is incremental and fluid evolving through nurturing conditions (Ke & Hoadley, 2009). Thus, because it shapes the online environment itself and the nature of interaction, technology can facilitate online learning communities (Liu et al, 2007).

My research will seek to avoid the pitfalls outlined above by answering three key questions through case studies of two Summer Doctoral Institutes (specifically three graduate-level distance-learning courses; two offered in Summer 2009 and one of those same courses offered again in Summer 2011):

- **Question 1:** Do the evaluative frameworks utilized (Community of Inquiry and Rovai's classroom community) confirm an online community exists in the three courses examined?
- **Question 2:** In what ways did microblogging¹ facilitate or hinder community formation in this context?
- **Question 3:** What revisions to our definition of online classroom community does my research suggest?

The Explosion in Online Education

Although my research questions are focused on the specific case studies identified above (and the small number of students involved in those particular courses), I foresee these types of questions becoming increasingly important in considering distance learning writ large — mainly because of the explosive growth of this method of instruction on

¹ Microblogging is an extremely short form of digital textual communication. In the case of Twitter, user messages are restricted to posts of 140 characters or less in length.

college campuses across the country. As more institutions of higher education began offering distance-learning programs, scholars began turning their attention to the differences between that modality and face-to-face instruction as well as the viability of computer-mediated communication (CMC) for instructional purposes. Increasingly, an area of concern has arisen — addressing feelings of isolation and higher dropout rates within distance learning programs. Dropout rates for distance education courses may be 10 to 20 percent higher than traditional courses with completion rates for distance courses varying widely among institutions (Carr, 2000). As Rovai (2002) notes:

The physical separation of students in programs offered at a distance may also contribute to higher dropout rates. Such separation has a tendency to reduce the sense of community, giving rise to feelings of disconnection (Kerka, 1996), isolation, distraction and lack of personal attention (Besser & Donahue, 1996; Twigg, 1997), which could affect student persistence in distance education courses or programs. (p. 3).

Haythornthwaite et al (2000) argue that the key to overcoming the “correspondence model” of online programs is moving the student from a position of isolation to a position as a member of an online learning community. This imperative demonstrates the need to consider the rhetorical context of the distance learning classroom and how we might apply our understanding of rhetoric to the online environment and interactions found within those classes.

In 2012, more than one in every three students — a total of more than 7.1 million students or 33.5 percent of all students enrolled at degree-granting postsecondary institutions — took at least one course online (Allen and Seaman, 2014, p. 15-16). In fact, the growth rate for online enrollments since 2002 represents a compound annual growth

rate of 16.1 percent (p.15) and has far exceeded that of the total higher education population every year from 2002 through 2012 (p.15). There is some evidence that online enrollment may be beginning to plateau, but there is no evidence yet that the plateau has arrived (p.16; *See Table 1*).

Table 1: Total and Online Enrollment in Degree-Granting Postsecondary Institutions from 2002 through 2011 (Allen and Seaman, 2014, p. 15)

Year	Total Enrollment	Annual Growth Rate for Total Enrollment	Students Taking at Least One Online Course	Online Enrollment Increase over Previous Year	Annual Growth Rate of Online Enrollment	Online Enrollment as a Percentage of Total Enrollment
Fall 2002	16,611,710	NA	1,602,970	NA	NA	9.6%
Fall 2003	16,911,481	1.8%	1,971,397	368,427	23.0%	11.7%
Fall 2004	17,272,043	2.1%	2,329,783	358,386	18.2%	13.5%
Fall 2005	17,487,481	1.2%	3,180,050	850,267	36.5%	18.2%
Fall 2006	17,758,872	1.6%	3,488,381	308,331	9.7%	19.6%
Fall 2007	18,248,133	2.8%	3,938,111	449,730	12.9%	21.6%
Fall 2008	19,102,811	4.7%	4,606,353	668,242	16.9%	24.1%
Fall 2009	20,427,711	6.9%	5,579,022	972,669	21.1%	27.3%
Fall 2010	21,016,126	2.9%	6,142,280	563,258	10.1%	29.2%
Fall 2011	20,994,113	-0.1%	6,714,792	572,512	9.7%	32.0%
Fall 2012	21,253,086	1.2%	7,126,549	411,757	6.1%	33.5%

These figures do not include students engaged in web-facilitated or hybrid classes (*see Table 2 for definitions of these instructional types*) meaning even more learners than the number cited in the Table 1 exist for some period of time in a virtual classroom setting.

Table 2: Taxonomy of Course Modalities (Allen and Seaman, 2013, p. 17)

Proportion of Content Delivered Online	Type of Course	Typical Description
0%	Traditional	Course where no online technology used — content is delivered in writing or orally.
1 to 29%	Web Facilitated	Course that uses web-based technology to facilitate what is essentially a face-to-face course. May use a course management system (CMS) or web pages to post the syllabus and assignments.
30 to 79%	Blended/Hybrid	Course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has a reduced number of face-to-face meetings.
80+%	Online	A course where most or all of the content is delivered online. Typically have no face-to-face meetings.

As colleges and universities expand their online learning options and offerings², fostering online community becomes increasingly important to prevent distance-student attrition and promote more effective learning outcomes. High drop out rates within online learning programs have become a significant concern for higher education institutions (Hyllegard et al., 2008; Park & Choi, 2009). In fact, completion rates for distance courses vary among institutions from 80 percent to less than 50 percent (Carr, 2000) with at least one community college reporting attrition rates for online courses twice as high as its traditional format classes (Hyllegard et al., 2008).

Allen and Seaman began reporting on online course enrollments and various issues surrounding this modality beginning in 2002. In their most recent annual report (2014) the researchers address the issue of retention. They note a growing concern among

² For the remainder of my dissertation I will not distinguish between types of computer-mediated modalities and, thus, may include the online and hybrid formats specified by Allen & Seaman (2013) as well as synchronous distance-learning options such as the ones offered by Old Dominion University and other models.

Chief Academic Officers with 41 percent agreeing that retaining students in online courses was harder than retaining those in face-to-face courses (p. 18). A direct comparison between online and traditional students is difficult because a variety of factors can impact persistence in a course. Allen and Seaman report a greater level of concern among public institutions which may reflect “the different nature of their student mix, drawing a larger proportion of older, working students that might be more likely to suffer the ‘life happens’ events that would force them to withdraw” (p. 18).

It is important to note that high dropout rates are not necessarily a sign of failure, but may be a function of a distance-education student’s needs or circumstances (Diaz, 2002; Hyllegard et al., 2008; Park & Choi, 2009). In fact, the decision to drop out may reflect “a mature, well-informed decision that is preferable to struggling through an online course and earning a low grade” (Hyllegard et al., 2008, p. 430). In many cases however, the level of attrition may be a function of the online learning modality itself. Some argue that students engaged in online learning programs experience diminished opportunities for academic and social integration into the educational institution or learning environment making them less likely to persist in the course (Bejerano, 2008, p. 411).

While an important element, the online learning modality may not be the only factor causing students to pull away from the educational institution. Despite the variety of factors that may come into play when considering attrition, it is critical to consider how the online learning environment can be maximized to support online community formation — a factor that, in turn, could help retain students (see Rovai, 2002; Rovai & Wighting, 2005; and Xiaojing et al., 2007). Thus, this dissertation will examine how

social media software such as Twitter might help or hinder online classroom community formation.

Finding (and Feeling) Online Classroom Community

Rovai and Wighting note that feelings of alienation are inversely related to feelings of classroom community (2005, p. 107) while Rovai (2002) concludes, “Therefore, one strategy to help increase retention is to provide students with increased affective support by promoting a strong sense of community. Such a strategy has the potential to reverse feelings of isolation and, by making connections with other learners, to provide students with a larger base of academic support” (p. 12). Given a strong sense of community can combat feelings of isolation and given the explosive growth of online course enrollments, it becomes even more important to empirically document the existence of a sense of community and explore whether a social media microblogging tool can facilitate development of that community.

I answer my three research questions in the context of two case studies — two different Summer Doctoral Institutes (SDIs) at Old Dominion University. The SDI was designed to help distance-learning and part-time students meet the requirement to be full-time, on-campus students for at least two semesters during the course of their PhD program. My case studies examine two courses (in which I was a participant) conducted in Summer 2009 and one of those same courses offered again in Summer 2011. Part of the class requirements included using Twitter to comment on course readings and respond to other students’ posts. This allowed me to collect two digital archives — the body of tweets utilizing the course hashtags from each SDI. I was then able to examine

these archives for evidence of social presence indicators and apply two existing theoretical frameworks to answer my research questions. I will expand upon my methods in Chapter 3.

Anecdotally, I experienced a strong sense of classroom community. Even though the required tweeting was minimal, I found myself corresponding regularly with my peers between class sessions and more frequently than I ever had in a learning management system such as Blackboard. These microblogged exchanges covered classroom readings and off-topic conversations. But I was not completely aware of their power until the end of my course. The deadline for the final course paper was approaching and I was writing until the very end. It had become common for me to have my Twitter client (software that allowed me to send and receive tweets; the software would sound alerts as messages arrived) open on my computer desktop as I read or completed coursework. This time was no exception. As I wrote, a “ding” would alert me that a classmate had tweeted. Some of these posts asked questions about our final assignment. Others shared triumphs or setbacks in completing the paper. With each tweet, a classmate would respond — offering clarification, words of encouragement or commiseration. Something was different in this moment. An activity I normally completed in isolation was now shared. What’s more: I genuinely cared about my classmates’ progress. I congratulated them as they tweeted a victorious post noting they had submitted their assignment. I appreciated their words of encouragement as I continued to write.

It was only later (after the fall semester started and I missed my former colleagues’ presence) that I realized I had experienced a stronger connection with these

people — something that I began to consider might be “community.” What started as a personal experience became a topic for exploration in an assignment for a different course. The kernel of an idea that emerged in that writing grew into the topic of this research study.

My need to empirically document the existence of online classroom community and determine whether the microblogging tool Twitter helped or hindered the development of that sense of community became the heart of my dissertation.

Digital Technology, Rhetoric and Online Community

It is important to note that the purpose of this research study is not to evaluate the educational outcomes of the courses within the case studies. The goal is not to determine whether students learned more or learned more effectively. Rather the goal is to determine empirically whether community formed online and how microblogging helped or hindered that formation if it occurred. The focus of this dissertation is centered firmly in rhetoric and composition. Elements of my discussion will link to the *pisteis* — the concept of establishing individual and community identity (*ethos*); feeling a connection to an online community (*pathos*); and the ability to form that community online via digitally-mediated words (*logos*). My analysis will examine the affordances of Twitter in the context of an online classroom.

While questions of educational effectiveness in distance learning are important ones, they lie beyond my field of study and expertise — as well as beyond the scope of this dissertation. Instead, this study will examine the rhetorical situation and changes that may occur as a result of employing a social media tool such as Twitter. Because of the

physical separation, the reduced visual cues afforded by the distance-learning environment may contribute to an increased feeling of isolation and disconnectedness in learners (Liu et al., 2007). Some course designers attempt to compensate with various synchronous or asynchronous computer-mediated communication (CMC) technologies. Use of digital tools, however, does not ensure the development of a viable community. Rather, the partnerships and interactions between participants foster or hinder development of community in an online environment (Lee, 2006).

CMC technologies do, however, play a role in relationship building (Bikowski, 2007). Online technologies shape the way we think and approach a task and, in the case of social networking tools, foster interaction, collaboration, and contribution (Gunawardena et al., 2009). Because they mold the online environment itself and the nature of interaction, digital technologies can facilitate online learning communities (Liu et al., 2007). Twitter's affordances — for example, the 140-character message limit or the lack of threading messages — impact the kinds of digital utterances that can be formed and the nature of any response. Thus, the question becomes whether Twitter (as a specific social network tool) can serve a similar online community-building function. I believe that it can. But, first it is important to consider how “online community” is defined in the academic literature — a task I will undertake in Chapter 2. I will then present my method for conducting my data collection in Chapter 3, report my findings in Chapter 4 and explain my analysis in Chapter 5. My conclusion, Chapter 6, will convey the limitations and significance of my work as well as areas for future research.

CHAPTER 2

CONSIDERING THE CONCEPTS OF ONLINE COMMUNITY AND WRITING UNDERLIFE

In the previous chapter, I introduced the challenging feelings of isolation experienced by part-time and distance-learning students as well as the explosive growth of online course offerings. One remedy for this isolation is engendering a strong sense of online community. Unfortunately, we rarely have empirical evidence that such community even exists in digital learning environments. To that end, I outline in my introduction my research study aimed at answering three key questions:

- **Question 1:** Do the evaluative frameworks (Community of Inquiry and Rovai's classroom community) confirm an online community exists in the three courses examined?
- **Question 2:** In what ways did microblogging facilitate or hinder community formation in this context?
- **Question 3:** What revisions to our definitions of online classroom community does my research suggest?

In this chapter, it is necessary to explore some foundational concepts. I will review a variety of definitions of community (as well as some concepts proposed as alternatives to community). Since it is impossible to consider engaging in an online community without considering a person's social presence in the digital environment, I also will introduce the concept of underlife in writing instruction, as this will be applied later in my dissertation as I discuss the social media environment and how it might enable online classroom community formation.

Exploring Concepts of Community

One challenge in an interdisciplinary attempt to bring theoretical frameworks from different fields together is that terms may be contested or used in entirely different ways. Scholars from various fields see community quite differently. Some reject the concept outright or downplay its importance in favor of other constructs (for example, information ecologies and affinity spaces). Others examine community in different contexts such as situated learning in the workplace (as in the case of communities of practice) or the internet overall (virtual community). Still others examine online community within the context of the classroom (for example, Rovai's concept of online classroom community and the Community of Inquiry scholars) — but they do so from a strictly pedagogical standpoint and minimize or ignore the rhetorical exigencies. This demonstrates a need to examine the concept of online classroom community from an English Studies perspective and a need to explicate and calibrate the term for the purposes of my dissertation. In this section I will examine several prevalent concepts of — and alternatives to — community.

Virtual community.

Howard Rheingold coined the term “virtual community” in 1993; thus, I will begin my review with his work. Rheingold defined virtual communities as “social aggregations that emerge from the Net when enough people carry on those public discussions long enough with sufficient human feeling, to form webs of personal relationships in cyberspace.” He concluded that any time computer-mediated communication (CMC) technology becomes available to people, they inevitably build

communities with it (2000, p. xx). Careful consideration of Rheingold's definition reveals one of the primary challenges in empirically proving the existence of online community — that measures of the qualities he identifies are quite subjective. What is “sufficient human feeling” and how long is “long enough?” This notion of a time requirement is an important one if we are to distinguish a community from a group or chance encounter with multiple people. However, the community need not exist in perpetuity. It may survive only for the period of a specific event such as conference, sporting game, or semester. Rather, the concomitant factor of emotional connection also must be in play to help distinguish a group from a community. In fact it is this “presence of sufficient human feeling” that I have personally experienced and documented in my case studies that convinces me online community exists. I will return to this point in detail in Chapter 5 when I present an alternative definition of online community.

Rheingold initially felt “cold” about community accessible only via computer but later learned that people can feel passionately about e-mail and computer conferences — and the others they meet through their computers. Indeed, he notes he became one of them (p. xv). The community he studied, The WELL, felt authentic to him because it was grounded in everyday life. Despite being a primarily online community, he attended physical functions such as marriages, births and funerals (p. xvi). In fact, he noted that people in virtual communities exchange pleasantries, argue, engage in discourse, share emotional support, engage in commerce, fall in love, play games and participate in idle talk — just about anything they do in real life. Except, they do it without their physical bodies (p. xvii). Indeed, I will argue in Chapter 5 that a similar circumstance occurs in my case studies. Because the professors capitalized on microblogging — specifically, a

social media technology like Twitter that became part of the students' everyday lives because of its frequent, repeated use and its overlap with other areas of student interest — there was a greater opportunity for community formation than had they used a learning management system (LMS) technology such as the Blackboard discussion forum.

When his book was republished in 2000, Rheingold had the opportunity to revisit his concept of virtual community in a new chapter added to the original text. While noting that socializing in cyberspace can be shallow for some, it can be a powerful medium for others to share intimate feelings and seek emotional support (p. 328). He explains,

“It is dangerous to mindlessly invalidate the experiences of a person for whom Internet communication is not a luxury but a lifeline. The times we helped each other, reached through the screens to touch each others' lives, were the times when something deserving of the word community manifested among people who spent most of our time sending words to each other across wires” (p. 330).

However, Rheingold also explains that, in hindsight, he would have used the term “online social network” rather than virtual community largely because the latter is such an emotionally loaded and contested word (p. 359).

I do not believe we should shrink from a term because it is emotionally loaded. Indeed, one of the *pisteis* (*pathos*) deals expressly with emotion. Further, emotion also finds a place in pedagogy as Bloom reminds us in his taxonomy that touches on the cognitive, emotional, and physical aspects of learning. On a personal level, the emotionally laden experience of online community and experiencing it for myself is what convinced me to pursue this line of research. An online community realized can be a powerful force within the distance-learning classroom. Rheingold says that, had he been exposed to it earlier, he would likely have used the term “social network” instead because

it “counters the critique of virtual communities as alienating, dehumanizing substitutes for more direct, less mediated human contact” (p. 361).

While I understand his weariness over a debate that had endured more than a decade, in the fifteen years since he wrote those words, I believe our societal conceptions of the types and strengths of connections that can be forged online have shifted. While many still privilege in-person contact, the number of marriages that come about because of online relationships and the advent of social media sites that allow us to remain in close contact with those geographically dispersed from us, have ameliorated our biases somewhat. As a result, I believe we are well served by embracing the term “online community” for its powerful emotional connotations.

Rheingold notes that between the time of the initial publication of his book and its subsequent reissue, he learned that virtual community does not emerge just because a particular type of CMC tool is added to a web page. There are too many other demands on our time and other distractions. Instead, he argues, growth of community requires skilled facilitation, multimedia material for integrating new members into the use of the medium and strong social contracts (p. 341). This line of reasoning is one to which I will return in Chapter 5.

Community in writing studies.

Considering my research study’s placement within English Studies (and, specifically, the field of rhetoric and composition) it is imperative to consider the concept of community in terms of writing. This is particularly important since microblogging is text based — an activity possible only through the activity of writing. Harris (1999)

discusses the impact of community on the study and practice of writing. Invoking Bartholomae, Harris says, “we write not as isolated individuals but as members of communities whose beliefs, concerns, and practices both instigate and constrain, at least in part, the sorts of things we can say” (p. 261) but also notes that recent theories tend to invoke the notion of community in vague and sweeping ways positing “discursive utopias that direct and determine the writings of their members, yet failing to state the operating rules or boundaries of these communities” (p. 261). This vague (and often assumptive) stance regarding the concept of community is a critique I will return to throughout this dissertation. Harris calls on Raymond Williams in noting the term community is generally used in a “warmly persuasive” way; one where community tends to mean a “nicer, friendlier, fuzzier version of what came before” (p. 262). He underscores Williams’ observation that community is never used unfavorably and seems to have no positive, opposing term concluding:

But I think Williams is also hinting at the extraordinary rhetorical power one can gain through speaking of community. It is a concept both seductive and powerful, one that offers us a view of shared purpose and effort and that also makes a claim on us that is hard to resist. For like the pronoun *we*, *community* can be used in such a way that it invokes what it seems merely to describe” (emphasis in original, p. 262).

As a student participant in the courses that comprised my first case study, I have personally experienced the affective power of an online classroom community and am thus convinced of the rhetorical power Harris notes — rhetorical power experienced both in discussing the concept of community and in experiencing it first-hand.

Harris explains that many discussions of the concept of community tend to lose that community’s rooting in a particular space. Abstracted from other social and material relations, communities appear to be held together only by affinity of beliefs and purpose

or “consensus” thus leaving the group an association of free individuals who have chosen to associate rather than a collection of people forced together. Harris couches these observations in examples such as writing communities, speech communities or discourse communities. These are, indeed, more abstracted in space and more loosely confederated. Online classroom communities, such as the ones I examine, are different in that students must participate to succeed in the course (although feeling a sense of community itself cannot be mandated). Additionally, since Harris wrote this argument more than twenty years ago, digital communication and social media have radically altered the possibilities for meaningful affective connections without colocation in physical space. In answering my second research question in Chapter 5, I will examine how community — and one that is not “ghostly” — can be meaningfully facilitated among geographically dispersed participants via an online social media platform for microblogging.

One final observation from Harris bears discussion and further examination. He explains that just as people do not write merely as an individual, people also do not write merely as a member of a single community; “one is always *simultaneously* a part of several discourses, several communities, is always already committed to a number of conflicting beliefs and practices” (emphasis in original, p. 268). Harris cautions against romanticizing academic discourse as happening in a single, cohesive community suggesting instead that we embrace the conflict and multiplicity. He suggests the metaphor of a city — a larger, broadly inclusive and cohesive whole that is yet made up of sometimes conflicting smaller groups thus allowing us to embrace a community that embodies a certain amount of change or struggle (p. 269). This reasoning becomes particularly important for my research in that social media (specifically the Twitter

microblogging technology) can function as a virtual crossroads where this conflict and confluence of multiple communities intersect online. I will return to this argument in Chapter 5.

Information ecologies.

In reviewing the concept of community, it is important also to explore the work of those who reject “community” in favor of a different construct. To that end, I will examine the concept of information ecologies. Additionally, exploration of this work allows me to directly address concerns about technological determinism. This is especially important given my second research question asks whether a particular social media tool facilitates or hinders the development of online classroom community. This brings my review of literature to the work of Bonnie Nardi and Vicki O’Day. In, *Information Ecologies*, Nardi and O’Day observe:

One of the most important human stories of the twentieth century is the impact of technology on the way we live, die, work, and play. This will continue into the twenty-first century. Usually discussions of technology are either blissfully pro or darkly con. Most of the time, people do not discuss technology at all. They simply let it wash over them, adapting as best they can (1999, p. ix).

Their assessment and prescient prediction for the twenty-first century still serves as a caution for our technology-related research endeavors. Nardi and O’Day remind us that we have the leverage to affect our own “information ecologies” or systems of people, practices, technologies and values existing in a local environment (p. 49). We must simply exercise that leverage. They admonish us to “dig deeper, and reflect more about the effects of the ways we use technology” (p. x). Although their advice centers on the work environment, it also highlights the need to focus a critical lens on pedagogical

choices — particularly those surrounding technological tools. They eschew technological determinism (whether embraced with giddy anticipation or held as far away as Luddite arms will allow) and argue that metaphors matter when discussing the role of technology.

Viewing technology as a tool implies control of it (not a safe assumption) while characterizing technology as a system implies users are trapped by it. Instead, Nardi and O'Day evoke an ecology metaphor — a dense network of relationships between people enabled by technology (p. 28). In the context of the research to be conducted, it will be virtually impossible to avoid terms such as “tool” or “system.” As a result, I will make plain (as best possible) my views on these “loaded” words. Throughout my dissertation, I will employ the term “tool” as some specific example of a technology. I embrace the inference of control, but do so in an imperfect sense. We can never hope to fully control any technology, person or environment. However, I believe that our choice of technologies for use in an educational setting should be purposeful; that we should make the best possible selections with the goal of creating the most hospitable environment for students. And, we must have “more than one tool in our belt” when it comes to our English Studies graduate classrooms. I favor the information ecology paradigm over the term “system” as I believe the latter does, indeed, imply a mechanistic, industrial predictability that is unrealistic in the context of a college classroom. Instead, I will focus on an examination of social networks and the resulting sense of online community.

Within Nardi and O'Day's information ecology, some species are crucial to the shape and stability of the system. These keystone species “may literally sculpt the environment so that a variety of organisms can be hosted” (p. 80). Within the context of my study, professors obviously function in that pivotal role although others in the

network may wield similar (or, perhaps, greater) influence. Acknowledging that total control of an environment is impossible, I liken effective pedagogical choices to gardening or husbandry — careful decisions made with goal of maintaining balance and positioning species within the ecology to thrive. This view stands in contrast to a pedagogy that seeks to “terraform” the classroom environment; a concept from science fiction that envisions transforming inhospitable planets into lush, Earth-like environments capable of sustaining life. Quite simply, there are too many variables to control and too many possibilities for metaphorical mutations or unpredicted interactions among species for this to be a viable pedagogical or rhetorical approach.

Whether one deems the rate of technological advancement as remarkable or alarming, professionals within the college classroom are faced with the exigency of engaging more and more students via online modalities. This necessitates thorough and balanced evaluations of the affordances of particular technological tools to ensure that selections complement the information ecology (class environment). In describing their paradigm, Nardi and O’Day explain, “The word ‘ecology’ is more evocative for us than ‘community,’ despite some similarities. Ecology suggests diversity in a way that community does not. Communities can be quite homogenous, or defined along a single dimension (the gay community, a community of scholars, a religious community)” (1999, p.56). When defined in context of a common descriptive characteristic (such as a sexual orientation, a profession, or a faith), community does seem a disparate concept from an ecological paradigm. But, when examined in the context of online-education research and the English Studies graduate classroom, “community” denotes an emotional bond; a social connection. Nardi and O’Day envision an information ecology as a complex web

that moves “beyond the human-machine dyad, expanding our perspective to include the network of relationships, values, and motivations involved in technology use” (1999, p. 30). However, I contend that the classroom cannot be divorced from rhetorical concerns — identity construction (ethos) and affective bonds (pathos).

It is my contention that a sense of online community defined in the context of social and emotional connections can grow organically out of a properly balanced information ecology. Put simply, if the online classroom environment has been “gardened” effectively employing the appropriate tools, species may do more than merely interact in a particular information ecology. They may thrive and form a sense of community. Just because Nardi & O’Day favor the term “ecology,” it does not preclude the possibility of community formation. However, in the context of the English Studies setting — a context in which graduate students are building their professional and academic identities —the formation of community along scholarly pursuits is a worthy goal. Further, I believe embracing the information ecology metaphor to the exclusion of online community moves us too far away from important considerations of pathos in our graduate English studies classrooms. An “ecology” is a useful construct — implying something less mechanistic than a system; something that grows in harmony. However, the metaphor breaks down when we consider the emotional aspect. Plants within a given ecology may grow symbiotically. They interact according to biologically predictable (and typically well-understood) rules. However, they do not feel for each other. Scholars must not lose sight of the affective bonds that the information ecology construct might minimize.

Communities of practice.

Before I move on to another scholar (James Paul Gee) who proposes an alternative starting point to community, I must review the theoretical model to which he sets his concept in opposition: communities of practice. These communities of practice examine the notion of situated learning in a variety of contexts — particularly the workplace (Lave and Wenger, 1991). Jean Lave argues that we should rethink our notions of learning (1991, p.63) and consider a model that combines persons, their activities and their worlds; a model that trains without formal lecture or instruction; and a model that positions learning as participation in ongoing social practice (p.64). Lave offers a “proposition that participation as members of a community of practice shapes newcomers’ identities and in the process gives structure and meaning to knowledgeable skill” (p. 74). He contends this situated learning best occurs in communities of practice. According to Lave, legitimate peripheral participation (authentic, recursive participation that allows for increasing levels of responsibility and opportunities to demonstrate mastery) serves as a bridge between the development of knowledgeable skill and identity (p. 68). As an example of this, he presents the case of a new member of Alcoholics Anonymous. Newcomers must assimilate not only the skills to avoid drinking but also learn the ways of the group as they construct new identities as non-drinkers. As new members enter this community of practice, they must learn the group norms for interaction and learn how to construct their personal narratives of lives as alcoholics — narratives that end of up following an AA model (p. 73).

Lave suggests that newcomers and oldtimers are dependent on each other; the newcomers depending on the oldtimers to learn and the oldtimers depending on the newcomers to eventually replace them and carry on the community of practice (p. 74). But this is not just an apprenticeship model. In providing the case of Yucatec Mayan midwives, Lave explains,

These apprentices are peripheral participants, legitimate participants, and legitimately peripheral to the practice of midwifery. They have access to both broad knowledgeability about the practice of midwifery and to increasing participation in that practice. It is worth noting that it would be difficult to find evidence that teaching is the mode of knowledge “transmission” among the midwives (p.70).

Lave contends that communities of practice found in schools and workplaces are mostly ad hoc (p. 78).

Clearly, the focus of Lave’s theory is on skill mastery, concomitant identity formation, and maintaining the community of practice. As a result, his concept of community centers on earning membership and does not consider the affective bonds that serve as the primary subject of my research. Lave’s concept does blur the lines between persons, their activities, and their world which echoes the affordances of a social media space such as Twitter — a line of thinking I will return to in Chapter 5. But, Lave’s focus on skill acquisition and identity formation limits the usefulness of his construct in terms of my dissertation project. And, his focus on including or excluding people from the community of practice serves as a primary source of critique for other theorists.

Affinity spaces.

Some scholars criticize the concept of communities of practice as an attempt to label people as insiders or outsiders relative to a particular group. In that vein, James Paul

Gee sets his affinity spaces model (2004) in opposition to communities of practice. Gee purposely avoids the notion of membership or “belongingness” as a starting point in his model. “If we start by talking about spaces rather than ‘communities,’ we can then go on and ask to what extent the people interacting within a space, or some subgroup of them, do or do not actually form a community” (p. 78). In fact, his key critique of communities of practice is that he sees them as an attempt to label a group and subsequently identify which people are in or out. Therefore, he suggests we start “at least sometimes” with spaces rather than groups (p.78). Gee identifies 11 defining features of his affinity spaces — although not all are required to be present for the affinity space to exist. He admonishes us to eschew binary distinctions and see the degrees as most important. (p.83). While I will not review all 11 characteristics here, I will discuss a few that are most relevant to my study:

- A common endeavor (not race, class, gender, or disability) is the primary interest around which a space is organized
- “Newbies” and masters and everyone else share common space
- There are many different forms and routes to participation (people may participate peripherally in some respects and centrally in others; these patterns can change day to day)
- There are many different routes to status within the space
- Leadership is porous and leaders are resources (p. 85-87)

Comparing classrooms to affinity spaces, Gee finds many classrooms lacking. They are either missing one of the eleven features altogether or display it much more weakly than the prototypical affinity space (p. 88). He contends that people primarily have an affinity for the interest or endeavor around which the digital space has been set up, not the other people inhabiting that online space (p. 84) but that the high school environment is often unclear regarding its common purpose. As examples, he wonders whether the common endeavor is “‘science,’ ‘doing school,’ [or] ‘school science’” (p.88).

While this critique might well be true for the high school environment and, perhaps, even undergraduate college classrooms, I believe it is less true of graduate studies where a higher level of subject specificity offers clarity missing in earlier learning environments. The second relevant element is that of sharing a common space. Gee's key argument is that newcomers ("newbies") and experienced participants ("masters" of the gaming environment) exist and interact in the same digital space; they are not segregated.

Gee argues that students rarely have opportunities to teach the teacher or their peers; that leadership is rarely porous (where students sometimes lead and sometimes follow and where leadership is focused on "resourcing others" and creating environments where students can learn on their own terms) (p.89). Again, this critique applies less in English Studies graduate programs (particularly doctoral programs) where classes focus less on lecture and rely more heavily on discussion between professor and students. Additionally, it is my contention that the use of microblogging (and other social media) does allow for more student-directed interaction and closer collaboration and connection. Further, because these interactions occur in a social space (not a strictly academic one), there is greater opportunity for students to form longer-lasting bonds and encounter a greater range of diversity of knowledge, genders, and ethnicities.

One of Gee's primary critiques of community as a starting point is the tendency to utilize it as an exclusionary criterion. However, I will present a definition of online classroom community later in this dissertation meant to identify an affectively laden, digital learning space. My proposed definition is not meant to serve as a boundary to include or exclude people from the group. Rather, it is meant to function as a heuristic guide for developing an educational environment that maximizes the potential for

affective connections; an attempt to bring as many people into the community as possible. If my research identifies evidence of affective bonds, empirically demonstrates the existence of online community, and suggests that microblogging can facilitate development of that community, then we can turn our attention to cultivating those types of digital spaces with little need to actually identify specific people who are in or out of the community. I will return to this argument in Chapters 4 and 5.

A sense of community may be fleeting — as Gee warns. But, it also may lead to longer-term connections such as cohort support or even friendships. However, this is not an automatic result. The camaraderie that develops during the time a class is active is special. Like a group of gamers providing mutual support to achieve a certain quest, students in an online space can support each other in their “mission” to “conquer” a course. While space is important (and, as Gee argues, perhaps an appropriate starting place), we cannot ignore the affective component. Thus, I will now turn my attention to two educational frameworks that consider the emotional aspect.

Classroom community.

Within the discipline of English Studies, the field of rhetoric and composition pays particular attention to pedagogical concerns. As a result, it is important to review the concept of community in the context of the classroom. Alfred Rovai defines classroom community as

a feeling that members have of belonging, a feeling that members matter to one another and to the group, that they have duties and obligations to each other and to the school, and that they possess shared expectations that members' educational needs will be met through their commitment to shared goals (Rovai & Lucking, 2000, p.34).

He has published extensively on the concept of community arguing that it is possible for such bonds to develop in online instructional settings. One impetus for his research is the feeling of isolation or disconnection experienced by some distance learning students.

Rovai distills various definitions into “ the most essential elements of community: mutual interdependence among members, sense of belonging, connectedness, spirit, trust, interactivity, common expectations, shared values and goals, and overlapping histories among members” (2002, p.4). He notes that classroom community is a specific type of community based upon the educational setting, the primary purpose of learning, and the fixed length of the course (2001, p. 34). Rovai (2000, 2002) contends that classroom community can be constitutively defined via four factors: spirit, trust, interaction and learning.

The first element, spirit, denotes recognition of membership in the community and a feeling of cohesiveness with members of that community of learners. This may include feelings of friendship and desire to spend time together. Rovai notes, “Community spirit allows learners to challenge and nurture each other” (2002, p. 4). The second factor, trust, refers to the feeling that community members can be trusted and relied upon and is comprised of two components — credibility and benevolence. The first component speaks to whether community members can be relied upon while the second addresses whether and to what degree members of the community are motivated to assist others in their learning (p. 5). Rovai’s third factor, interaction, is necessary but not solely sufficient for the development of a sense of community. He explains, “If we cannot fully promote sense of community through the quantity of interaction, we must foster community through the quality of interaction” (p.5). He categorizes interactions as either

task-driven or socio-emotional where task-driven interactions focus on completion of assigned tasks while socio-emotional interactions are directed toward relationships among learners (p.5). Rovai's research indicates that feelings of classroom community are "moderately related" to interactivity; that dialogue is more important than structure (p.7). But that interactivity can be more difficult to experience online than in face-to-face contexts. Learning, the final factor, refers to "a commitment to a common educational purpose" (p.6).

While Rovai clearly embraces the concept of community and places it firmly within the classroom setting (something I deem missing in much of the literature discussed previously in this chapter), his focus on the affective or emotional bonds takes place absent consideration of the digital space itself and the tools that make the communication and that online environment possible. Digital space is inextricably linked to our consideration of this concept because it shapes the kinds interactions possible. To that end, I will offer an alternative definition of online classroom community in Chapter 5 — one that renames and extends Rovai's elements while also including the critical factor of the digital environment itself.

Community of Inquiry.

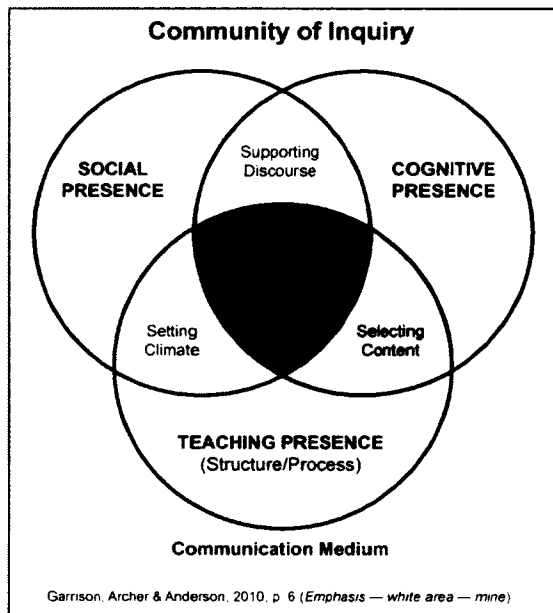
I will review one more framework for community that has been widely applied. Despite its utility in online pedagogical scholarship, I find it lacking in terms of the definitional needs I will outline in Chapter 5. However, this model provides a useful method for gauging social presence in online environments and thus deserves attention within my review of literature. Developed more than a decade ago as an attempt to

connect the human issues around online learning, teaching issues associated with this method of delivery, and the overall cognitive goals of a graduate program (Garrison, Anderson & Archer, 2010), the Community of Inquiry (CoI) framework has emerged as one of the leading models guiding research in the field of online education (Shea et al., 2010). In fact, the CoI framework has been used by hundreds of scholars (Garrison, Anderson & Archer, 2010) in hundreds of studies (Garrison, Cleveland-Innes & Fung, 2010) and has been cited in thousands of scholarly articles (Shea et al., 2010).

Social constructivist in nature (Swan & Ice, 2010), the CoI framework is grounded in John Dewey's belief that inquiry was a social activity at the heart of an educational experience (Garrison, Anderson & Archer, 2010). The CoI model (*see Figure 1*) explores three critical elements of higher education experiences that use online communications media (social presence, cognitive presence, and teaching presence) and their areas of overlap. These three core components have remained relatively stable in the ten years since the model's creation (Garrison, Anderson & Archer, 2010). Cognitive presence reflects the learning and inquiry process (Garrison, Cleveland-Innes & Fung, 2010) and is defined as the degree to which participants within a CoI are able to construct meaning via sustained conversation (Rourke et al., 1999, p. 51). Teaching presence is comprised of the pedagogical design concerns that facilitate and direct social and cognitive processes for the purpose of realizing beneficial learning outcomes (Garrison, Cleveland-Innes & Fung, 2010, p.32). Social presence, then, manifests itself when learners project themselves socially and emotionally in a CoI (Rourke et al., 1999). It is the extent to which participants in a computer-mediated environment feel affectively connected (Swan & Ice, 2010).

The central, dark-gray region of the Venn diagram presented in Figure 1 represents improved educational performance. It is not the purpose of my dissertation to cover that ground in detail. Rather, my research will explore whether microblogging technology facilitates stronger community. While many factors contribute to each domain (cognitive, teaching and social presence), my narrow focus on microblogging technology places my research in two particular areas of overlap in addition to the central region: setting climate and supporting discourse (*noted with emphasis in Figure 1*).

Figure 1: Community of Inquiry Venn Diagram



In the CoI framework, social presence is a mediating variable between the other core concepts (Garrison, Anderson & Archer, 2010; Garrison, Cleveland-Innes & Fung, 2010); a responsibility of teaching presence and a necessary condition for cognitive

presence (Garrison, Cleveland-Innes & Fung, 2010). Indeed, social presence appears to play an important role in advancing significant learning (Shea et al., 2010). Rourke et al. (1999) note:

Social presence supports cognitive objectives through its ability to instigate, sustain, and support critical thinking in a community of learners. It supports affective objectives by making the group interactions appealing, engaging, and thus intrinsically rewarding, leading to an increase in academic, social and institutional integration and resulting in increased persistence and course completion (Tinto, 1987). (p. 52-53)

The CoI framework identifies three indicators of social presence (affective, cohesive, and interactive) that can be used to measure the extent of social presence in a given mode of CMC. Affective indicators are “personal expressions of emotion, feelings, beliefs, and values” and are thought to make up for the lack of gestures, facial expressions, intonation and other cues commonly available in face-to-face communication (Swan, 2002, pg. 37). Cohesive indicators are “verbal immediacy behaviors that build and sustain a sense of group commitment or group presence” (p.37). Interactive indicators provide evidence that other participants are attending to the discourse (p. 38).

A robust framework, the CoI considers both the critical emotional elements through the social presence factor and the digital space itself through the teaching presence factor. But the framework privileges the educational learning outcomes. While this is a worthy object of focus, it is not my primary area of interest. Rather, I center my research on the feeling of connection itself; the affective bonds experienced when a sense of online classroom community is present (my first research question) and whether that community can be fostered online via a particular social media platform (my second research question). While an exploration of online community forms the heart of my research study, I will apply additional theory to my analysis. To that end, I also will

review some foundational work around identity construction relative to the writing classroom.

Underlife and Writing Instruction

A student cannot become part of a community online unless she is able to project herself digitally into the virtual environment; unless she is able to establish her social presence online. Thus, identity construction (online ethos) becomes a critical concern. This online identity construction may be complicated by the fact that institutions place expectations on class participants — but students may rebel against those roles. This can be particularly true when the digital classroom space intrudes upon a social media space (such as Twitter) that overlaps with the student’s personal and professional interests. In his chapter “Underlife and Writing Instruction” in the *The Braddock Essays 1975-1998*, Robert Brooke applies a sociological theory to the composition classroom.

In sociological theory, the term “underlife” refers to actions that undercut expected participant roles. He notes that underlife behaviors might demonstrate that a person is not just an employee but also a complex person outside that particular role. His or her ethos is not determined solely by employment. Brooke contends that both students and teachers undercut traditional educational expectations in the contemporary writing classroom (p.229). Brooke’s understanding of this sociological term comes from Erving Goffman’s works *Asylums* and *Stigma*. Brooke identifies three assumptions underlying the concept of “underlife” presented within these books:

- We assume a person’s identity is a function of social interaction.
- We assume social interaction is a system of information games.
- We assume social organizations provide roles for individuals that imply certain identities. (p. 230)

Brooke summarizes Goffman's explanation of our understanding of another person's identity as a combination of how the person immediately appears to us through his or her physical presentation factors such as dress, bearing, and accent; what we know of the person's history; and the stances the person takes to the group to which we assume he or she belongs. (p. 230) In light of these factors, our concept of a person's identity hinges on our social interactions with him or her.

Brooke notes that the identity an instructor assigns someone is determined by the kinds of information the student chooses to give us (p.230). This is especially true in the digital space where physical appearance and auditory cues readily accessible in a face-to-face encounter may be absent. While we may certainly choose how we dress and how we sound in everyday encounters (albeit, with some effort), the digital space may alter or hide physical appearance completely if a person uses an avatar that is not his or her actual picture and obscure speaking patterns or accents when slang, abbreviations and other non-standard written language patterns are used (for example, in truncated text-based exchanges such as tweets). Hence, it becomes important within this dissertation to consider the concept of underlife. Brooke notes that because organizations impose definitions of identity, individuals may reject those definitions in creative ways and provide information about how they perceive themselves via the rejection of that organizational definition (p.231). Digital backchannel spaces (such as the one afforded by Twitter) provide greater opportunity to creatively shape identity because only the desired information is transmitted to others. In his study of hospitals and other institutions, Goffman concludes that underlife behaviors are prevalent and, thus, a normal part of

institutional life. These behaviors must be seen as closely related to identity construction and even “off task” activities must be viewed as important because of the role they play in this identity construction (p. 231-232).

Disruptive and contained underlife.

In disruptive forms of underlife, participants seek to abandon the organization and radically change its structure. In contained forms of underlife, participants attempt to fit into existing institutional structures without exerting pressure for radical change to that structure (p. 231). Brooke identifies student underlife as contained, but notes that writing teachers often find themselves in a disruptive position — attempting to change the student role in the classroom (often in conflict with the educational institution) because they view writing goals as different from traditional educational goals (p. 236). Brooke contends that writing teachers want their students to see themselves instead as writers and, therefore, these instructors make pedagogical changes to foster that aim.

Brooke notes writing teachers “are more likely to speak of ‘voice’ than of identity for the first is a rhetorical concept and the second a sociological concept. But the two are very closely related, since both have to do with the stance an individual takes toward experience” (p. 237). In a similar sense, then, underlife contributes to community. As these behaviors allow students to construct their identities by distancing themselves from prescribed institutional roles, these activities also foster a sense of social presence — the sense that participants in a digital space are real people. As a stronger sense of social presence grows, it becomes possible for a stronger sense of online community to develop.

This dissertation will examine whether a social media tool such as Twitter can convey a sense of social presence and support the creation of a sense of online community.

Brooke observes that students are merely trying to “gain some psychic distance from the roles they must inhabit in the classroom” (p. 236), but distance-learning students may find some tension between the desire to distance themselves from a prescribed role and the desire to minimize transactional distance and forge a stronger sense of community with their peers and their program. Rovai (2002) defines transactional distance as the psychological and communicative space between learners and instructors. Transactional distance is dependent on dialogue and structure (Moisey, Neu and Cleveland Innes, 2008) where structure (the amount of control exercised by an instructor in a learning environment) stands in opposition to dialogue, which affords the student a greater level of control (Rovai, 2002). High control and low dialogue translate into a greater or more “remote” transactional distance while the opposite results in “closer” transactional distance and a stronger sense of community (Moisey, Neu and Cleveland Innes, 2008, p. 22). However, a student rejecting a prescribed role need not be mutually exclusive from finding a sense of community. Students may distance themselves from a prescribed institutional role by aligning themselves more closely with their peers. Their communal bond may affirm their self-determined role.

Brooke argues that writing “asks individuals to accept their own underlife, to accept the fact that they are never completely subsumed by their roles, and instead can stand apart from them and contemplate. Writing instruction seeks to help the learner see herself as an original thinker, instead of as a ‘student’ whose purpose is to please teachers by absorbing and repeating information” (p. 239). I contend that a strong sense of online

community fostered within the English Studies classroom via an online social media space can assist in this regard by moving a student beyond the typical dyadic relationship with the instructor and focusing him or her on interaction with peers. Chapter 5 will explore whether this actually occurred in the case studies to be examined.

Brooke concludes:

Writing, in short, is “about” autonomy and action — to really learn to write means becoming a certain kind of person, a person who accepts, explores and uses her differences from assigned roles to produce new knowledge, new action, and new roles. The concept of underlife shows us this process, a process at work in every classroom and at the core of our discipline. It suggests we think carefully about the identities we have, the identities we model, and the identities we ask students to take on, for the process of building identity is the business we are in” (p. 240)

In revisiting his original 1987 article for inclusion in the Braddock Essays published in 1999, Brooke offers a hope in his Afterword that “the task of the next ten years will be to imagine programs which increase the self’s possible roles, widening the ways literacy is used in the celebration and establishment of viable sustainable communities” (p.241).

Cited in nearly 150 articles since its publication, questions around underlife remain timely ones. And, as online course enrollments continue to dramatically increase and new digital backchannel tools become available, we also must be in the business of fostering a stronger sense of online classroom community. The work of this dissertation seeks to answer whether we have delivered (or have the potential to deliver) on Brooke’s hope. I will return to this discussion in the analysis delivered in Chapter 5.

Summarizing and Applying the Literature

As illustrated throughout this literature review, scholars from various fields see community quite differently. Some eschew the concept or downplay its importance in

favor of other constructs (information ecologies or affinity spaces). Others examine community in different contexts such as the workplace (communities of practice) or the internet writ large (Rheingold's virtual community). Still other scholars place consideration of the concept of online community firmly in the classroom (Rovai's classroom community and the Community of Inquiry) — but they do so from a strictly pedagogical standpoint minimizing or ignoring the rhetorical exigencies demonstrating a need to examine online classroom community from an English Studies perspective. These rhetorical concerns include not just the emotional aspects (pathos) but also concerns around identity construction (ethos) and the importance of digital underlife.

Given the varied definitions and importance placed upon the concept of community, it becomes necessary to consider how my review of the existing literature and my research causes me to think differently about online classroom community. Indeed, this need became the basis for my third research question. An additional goal of this dissertation is to empirically prove the existence of community in two cases studies — a task I will accomplish by applying the theoretical frameworks of Rovai and the Community of Inquiry scholars. The remaining research question centers on whether microblogging as a social media technology can facilitate development of online classroom community. I describe my methodology for exploring and answering these three key questions in Chapter 3.

CHAPTER 3

A METHOD FOR EXAMINING SOCIAL PRESENCE AND COMMUNITY ONLINE

In the previous chapter I reviewed the concept of online community as explained in a variety of scholarly literature. In this chapter I will outline my methods for collecting and analyzing the data necessary for this study. After presenting my research questions, I will theoretically situate my research method and provide an overview of my study design. Next, I will provide the context for my study in terms of the university, the university's distance learning breadth, and the English doctoral program's structure and requirements. I will then discuss the collection of data for my two case studies addressing the challenges experienced in 2009 and 2011. This will lead me to an explanation of how my research plan evolved over time and provide an opportunity to introduce two of the key theoretical lenses I used and to explain how I applied them to analyze my data. I will conclude the chapter by presenting the limitations of my study.

It is the intent of this dissertation to answer three key research questions centered on fostering online classroom community. Kling and Courtright (2003) note that scholars use the term "community" in an aspirational manner rather than empirically proving its existence. Hence, not only do we not know how often community actually develops in classrooms, but our assumptions that community exists in many or even most classrooms may be incorrect (Cook D.L., 1995). While maintaining online community is possible, that presence should not be taken for granted (Haythornthwaite et al., 2000). Thus, it is my intention to empirically examine the existence of online community in three graduate

courses and to demonstrate whether microblogging can facilitate the development of that online classroom community. I will examine three research questions as the focus of my dissertation:

- **Question 1:** Do the evaluative frameworks (Community of Inquiry and Rovai's classroom community) confirm an online community exists in the three courses examined?
- **Question 2:** In what ways did microblogging facilitate or hinder community formation in this context?
- **Question 3:** What revisions to our definitions of online classroom community does my research suggest?

While the first question may seek simply a binary “yes” or “no” answer, finding the result is an important step. In the spirit of Kling and Courtright (2003), of D.L. Cook (1995), and of Haythornthwaite et al. (2000), it is important to attempt to empirically document the existence or absence of online community; in this case, via the digital record generated from the course-related Twitter posts of participants in these three graduate classes. The existence of online community should never be assumed or even be deemed a trivial object of research. To move away from vague notions about how online community evolves, every study on this subject — including this dissertation — should answer the foundational question of whether an online community actually exists. That finding then serves as the cornerstone for any scholar to build upon in determining what factors enhanced or impeded community formation. The second research question serves to complicate my dissertation. It is important to ascertain how the use of Twitter enabled or retarded the development of a sense of online community. Throughout the study, I remained open to the possibility that no evidence of community might be found understanding that studying the available datasets might have provided insight as to why. Although my results demonstrated otherwise, I remained open to the possibility that the

microblogging tool Twitter may have had a deleterious effect. Documenting the existence or absence of online community in the case studies and examining the impact of the microblogging tool better positioned me to reflect on the foundational concept of online community and determine how this study has impacted my own perceptions of that construct.

In pursuit of these answers, I employed two established theoretical lenses — that of Alfred Rovai and the Community of Inquiry framework. I am conducting empirical research in that I am examining data and not writing a purely theoretical dissertation. As a result of my personal experience as a student in the two 2009 courses referenced in Chapter 1, I have engaged in applied research. MacNealy (1999) explains, “Applied research is that which tries to answer an immediate question of concern in a particular area. Usually, the researcher is looking for information that can be of practical use” (48). Although empirical, my research is not experimental. It is not designed scientifically controlling for variables. Rather it is emergent in nature (Krathwohl & Smith, 2005 p. 23; MacNealy, 1999 p. 40) — my methods of data collection evolving over time and as the opportunities to examine the use of social media in graduate English classroom settings have presented themselves.

Cresswell (2003) conceptualizes Crotty’s 1998 research model to focus on three main concerns regarding study design: the type of knowledge claim being made by the researcher, the strategy of inquiry that informs the study, and the methods of data collection to be utilized (p.5). My research seeks pragmatic solutions for the isolation experienced by online distance-learning students. Cresswell explains, “There are many forms of pragmatism. For many of them, knowledge claims arise out of actions,

situations, and consequences rather than antecedent conditions (as in postpositivism).

There is a concern with applications — ‘what works’ — and solutions to problems (Patton, 1990)” (p. 11). He adds, “Thus, for the mixed methods researcher, pragmatism opens the door to multiple methods, different worldviews, and different assumptions, as well as to different forms of data collection and analysis in the mixed methods study” (p. 12). Cresswell argues that pragmatism provides a basis for several knowledge claims and my study falls well within those parameters (p. 11):

- My study is not committed to any one system of philosophy or reality;
- I exercised a freedom to choose the methods, techniques and procedures that best met my needs and purposes;
- I understand the world does not exist in complete unity and, therefore, used different approaches to collecting and analyzing my data rather than subscribing to only one way (quantitative or qualitative); and
- I agree that research always occurs in a social context and, as a result, my study utilizes a theoretical lens that is reflexive and seeks a solution that aids both distance and part-time students in online or hybrid doctoral programs.

In short, my research is focused heavily on praxis or practical application; focused on how our pedagogy within the English Studies classroom may be better shaped by rhetorical choices that foster a sense of online community.

I have employed mixed methods as my strategy for inquiry in this dissertation. Cresswell notes that “a mixed methods approach is one in which the researcher tends to base knowledge claims on pragmatic grounds (e.g., consequence-oriented, problem-centered, and pluralistic). It employs strategies of inquiry that involve collecting data either simultaneously or sequentially to best understand research problems” (p. 18). One of my theoretical lenses, the Community of Inquiry framework (discussed in Chapter 2 and to be discussed further in this chapter) uses quantitative methods to gauge the level of social presence evidenced in a digital archive. It is important to note that, although this

method involves numbers, counting, and percentages, these coding values are based on subjective determinations via transcript analysis. Thus, even the quantitative data entails qualitative judgments. In addition, I then use transcript/discourse analysis to further qualitatively examine the tweet archives through the lens of Rovai's concept of online classroom community and, ultimately, through the revised definition of online community I will propose in later chapters.

As noted previously, my method or strategy for collecting data was to conduct case studies of two summer sessions at Old Dominion University (one session comprised of two courses in 2009 and one session comprised of a single course in 2011). I utilized various web-based software to collect the resulting tweets into two archives (one archive for the two courses conducted in 2009 and one archive for the course conducted in 2011) and then exported those archives into separate Excel spreadsheets to facilitate coding the data for inclusion of social presence indicators (which will be described in more detail later in this chapter). The coding results then allowed me to apply two theoretical lenses — the Community of Inquiry framework and Rovai's concept of online classroom community. I will discuss the challenges in collecting the digital data in more detail later in this chapter.

Context for the Study: Old Dominion University

Located in the Hampton Roads region of Virginia (home to the world's largest Navy base and, thus, experiencing a high military presence and a high level of transience), Old Dominion University (ODU) describes itself as “a comprehensive, multicultural, and student-centered university” (2014) noting,

ODU provides access for a diverse array of student populations, elevates its standing among the nation's public research institutions, makes innovative use of modern learning technologies, and insists on an arts-and-sciences-based general education for all undergraduates. The University offers 69 baccalaureate, 54 masters, two educational specialist, and 42 doctoral programs, along with 43 certificate programs. Academic programs are offered through six colleges: Arts and Letters, Business and Public Administration, Education, Engineering and Technology, Health Sciences, and Sciences. Currently the University has an operating budget of \$440 million and employs more than 2,100 full-time faculty and staff members (Old Dominion University, 2012, pg. 3).

ODU's Carnegie rating is RU/H grouping it with institutions that award at least 20 research doctoral degrees (excluding degrees that qualify recipients for entry into professional practice — such as the JD, MD, PharmD, DPT, etc. — and excludes special-focus institutions and tribal colleges).

Old Dominion University began offering distance-learning opportunities almost 20 years ago. The institution launched its original satellite-delivery system, known as TELETECHNET, in 1994 in conjunction with the Virginia Community College System (VCCS). Since that time, ODU's distance-learning network has grown to nearly 50 locations throughout the Commonwealth of Virginia, Arizona, Washington state, and various military installations. This does not include locations of individual students enrolled in online courses (Old Dominion University Distance Learning, 2012; Old Dominion University Distance Learning, 2013). Counting those enrollments, ODU serves students in nearly 50 states and beyond (Casiello, 2011).

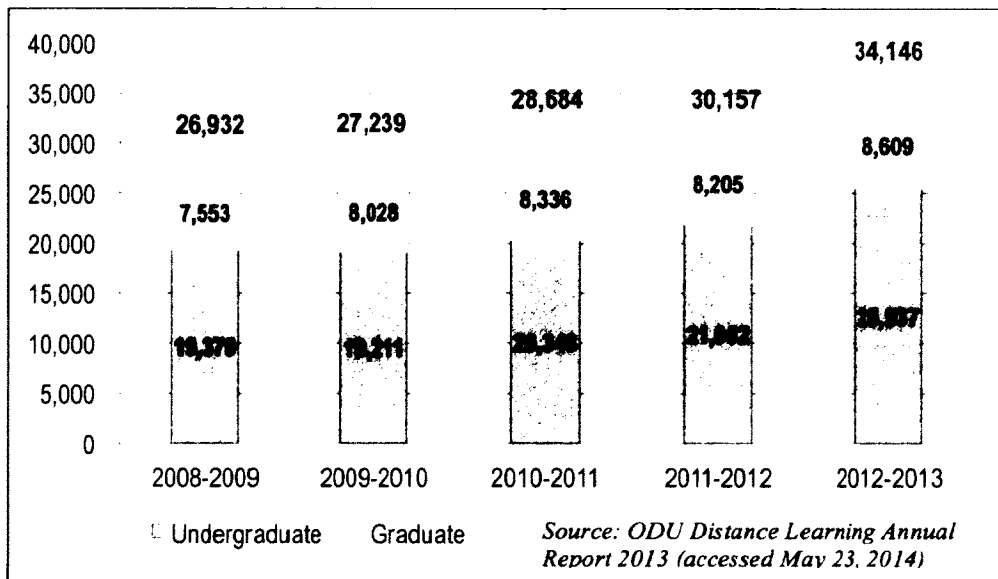
According to demographics reported by the institution in the *Old Dominion University Distance Learning Annual Report*, the distance-learning network provides educational opportunities for many traditional and non-traditional students:

- ❑ 63.6% are female (2013)
- ❑ 41% are under 26 years old; 17.4% are over 41 years old (2013)

- 68.2% are white, 20.8% are black, 3.6% are Hispanic, and 7.4% are another race (2013)
- 90% transfer from a community college, and 84% of those students transferring already have an associate's degree (2012)
- 84% reside within 30 miles of an ODU site location (2012)
- 65% work 30 hours or more per week (2012)
- 53% have dependent children at home (2012)

Today, the institution offers over 50 online programs. ODU provides upper-division courses at the undergraduate level while relying on the VCCS for the provision of lower-division courses for students. Twenty of those 50 online programs culminate in a graduate degree. As evidenced in Figure 2, distance-learning registrations have increased since 2008-2009.

Figure 2: ODU Distance Learning Registrations by Year



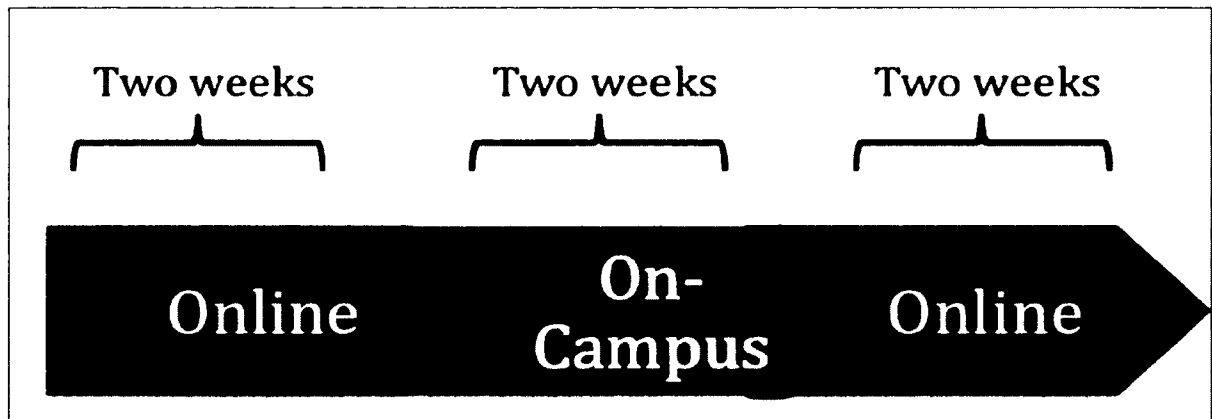
Context for the Study: Summer Doctoral Institute

The Department of English at Old Dominion University in Norfolk, Virginia began offering a doctoral program in Fall 2006. This program admits “traditional” full-time, part-time, and distance-learning students. During fall and spring terms, students at off-campus locations use their personal computers to participate in courses via synchronous video conferencing with on-campus students and the professor who meet in specially equipped distance-learning classrooms. On-campus participants experience face-to-face interaction with the professor and real-time video and audio feeds of distance students. Multiple monitors within the classroom allow for on-campus students to see computer-based content as well as images of their remote peers. Students at a distance see a single stream that may alternate between real-time video of the professor or classmates, computer-based content, or images from an overhead camera (for note-taking or displaying non-digital content). For more information on this type of distance learning classroom (including pictures), see Depew & Lettner-Rust 2009. At the time of the study both traditional and distance-learning courses at ODU often used elements of Blackboard to support course work. Professors also used other technology (blogs, wikis, outside web sites) for educational purposes. Since the program’s inception, courses also have met in a campus computer lab and utilized Adobe Connect and WebEx to link on-campus students, distance learning students, and the course instructor.

To successfully complete the PhD program, students are required to complete a minimum of two semesters of full-time, on-campus study. During the fall and spring semesters this entails taking 9 credit hours (generally three courses) at a time. To assist part-time and distance-learning students in meeting this residency requirement, the

department created the Summer Doctoral Institute (SDI) — a special six-week session — because summer full-time status requires enrollment in only 6 credit hours (generally two courses). To allow students to more easily meet the on-campus requirement, SDI courses are structured differently. They consist of three components: a two-week period of daily asynchronous online work, a two-week period of daily face-to-face on-campus classes, and a final two-week period of daily asynchronous online work (*see Figure 3*). Distance students travel to and, generally, stay on-campus for the two-week face-to-face course work.

Figure 3: Summer Doctoral Institute (SDI) Course Structure



2009: Challenges Collecting the First Data Set

My pilot study examined the social-media-enabled communication that took place as part of two graduate-level summer classes offered during SDI 2009 (ENGL 894: Seminar in New Media and ENGL 895: Tracing Digital Cultures). Various instructors in

the ODU doctoral program have experimented with tools such as Blackboard discussion forums and blogs to help bolster a sense of community, but have found these tools lacking (Potts, Gossett & Rhodes, 2010). These feelings mirror the experiences of instructors at other institutions (Dunlap & Lowenthal, 2009). Instead, for SDI 2009, both ODU professors elected to use Twitter as a platform for asynchronous class discussion with the instructor of one course (ENGL 895) requiring students to post a tweet on each assigned reading and respond to at least two of their classmate's tweets daily. The instructor of the other SDI course (ENGL 894) prescribed only 1 tweet per reading with responses to classmate tweets encouraged but not required. Tweets for both courses were to be labeled with a common hashtag — #SDI09. (A hashtag is a label preceded by the pound sign (#) that facilitates grouping of and searching for comments on a related topic within Twitter posts.) The professors saw an overlap in the subject areas to be studied and hoped the use of a common social media venue and hashtag would allow for cross-pollination of ideas and the formation of greater connections between the coursework. The success of that tactic is not the subject of this dissertation. Rather, this study will focus on the presence or absence of a sense of online community and how the online microblogging tool might have helped or hindered the formation of that sense of community.

Nine students enrolled in one of the available summer courses and eight students enrolled in the other. Although the SDI was created for the purposes of the PhD program, two participants in each course were Masters-level students. Because some students took both courses, the total participants numbered 11. Although I was enrolled in both classes, I do not believe this participation clouds the findings or skews the data as I neither

conceived nor conducted my pilot study until after the conclusion of the SDI. Thus, my participation via Twitter was authentic and could not be purposefully or inadvertently altered to support a particular conclusion. Additionally, from a virtual ethnography standpoint, it is important for digital researchers “to find ways of immersing themselves in life as it is lived online and as it connects through into offline social spheres” (Hine, 2005, p.18). My participation allowed me to experience both the physical and virtual “communities” associated with the SDI 2009 courses and proved useful in my study of the Twitter transcripts — a fact that became particularly apparent to me as I began analyzing the tweet archive from SDI 2011, when I was not enrolled as a student.

A search established at the beginning of the summer 2009 semester (July 5, 2009) on the website TwapperKeeper.com (*see Figure 4*) archived 2,311 tweets using the #SDI09 hashtag. These tweets were generated by a total of 11 enrolled students, two teachers and various outside participants across both courses. Collection of the data was not without its challenges. Because Twitter imposed application programming interface (API) restrictions that limited how much data could be called at one time, reliably and easily collecting tweets proved difficult — a fact reported in other, early Twitter-based research (Honeycutt & Herring 2009; Krishnamurthy, Phillipa & Martin, 2008). Although one advantage of microblogging formats is persistence of data (McNely, 2009), in the case of Twitter during the summer of 2009 that persistence was imperfect.

At the time of the 2009 data collection, Twitter was experiencing scalability issues. As a result, users experienced an array of service interruptions. For example, during the course of the SDI session, thousands of user accounts (including my own) were inadvertently suspended due to human error (Twitter, 2009). Although the accounts

were eventually restored, users were not able to tweet while suspended. During this same period, even users with working accounts experienced difficulty viewing hashtagged tweets in third-party clients as the screen capture of the TwapperKeeper archive in Figure 5 shows (2009).

Figure 4: #SDI09 TwapperKeeper Archive Screen Capture

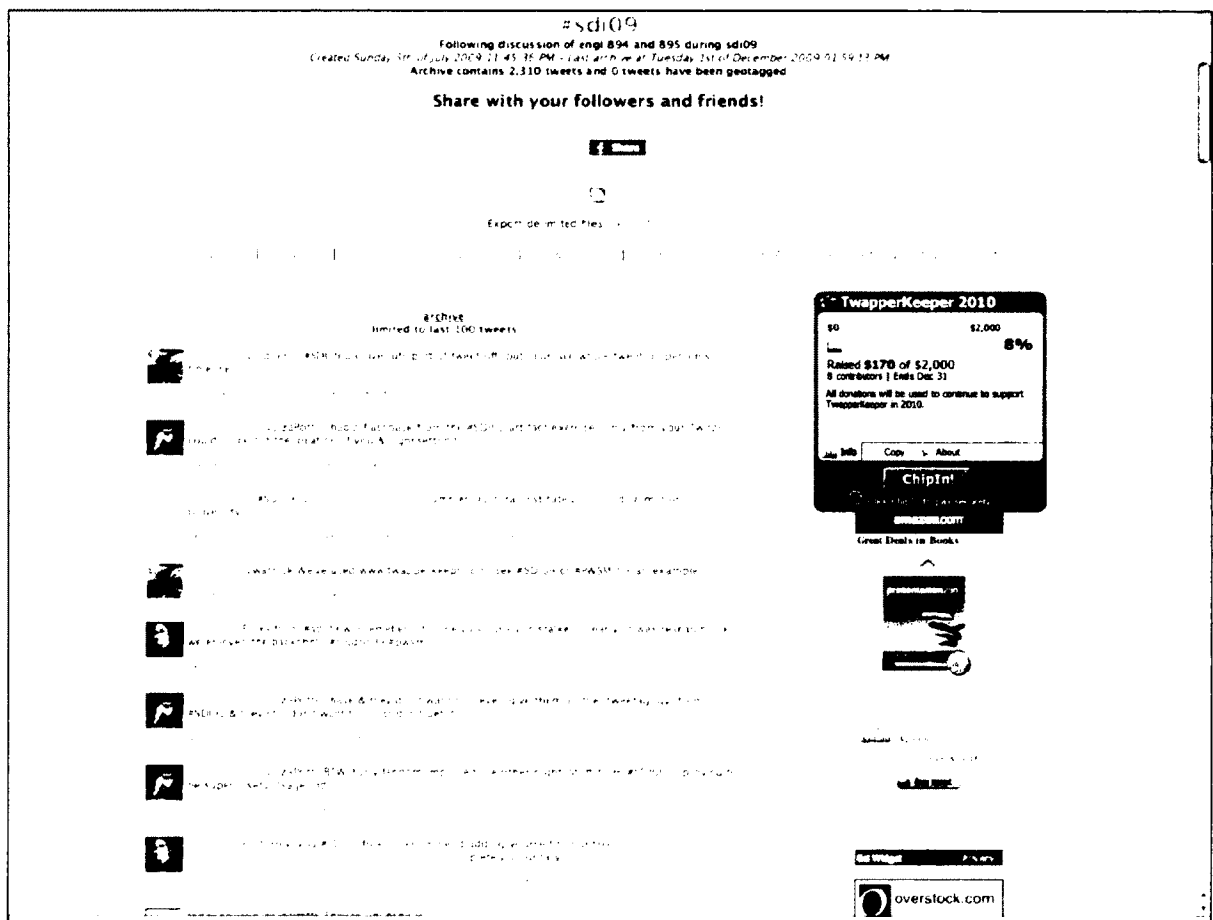
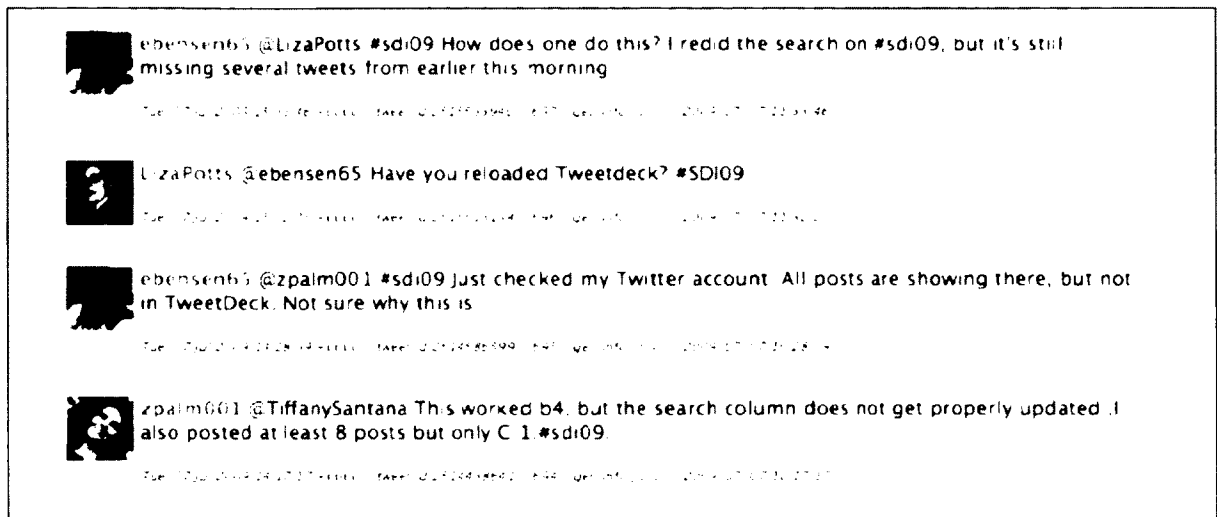


Figure 5: Tweeting About Twitter Problems in #SDI09



Another system glitch prevented some tweets containing the proper hashtag from appearing in the #SDI09 archive. This includes 70 tweets generated over the course of approximately two weeks by me. The tweets were subsequently recovered using the web-based Twitter interface and archived separately. However, the tweets were not available in a format that could be readily integrated into the Excel spreadsheet to be used for my data analysis. As a result, they were excluded from coding. This example illustrates the likelihood that tweets from other class participants may be missing from the #SDI09 archive. Conversely, posts without the #SDI09 hashtag occasionally would appear in search results for that tag — including spam tweets (the equivalent of junk e-mail). These tweets were deleted from the data set.

As a new technology in 2009, TwapperKeeper (the online software used to archive tweets) also experienced glitches. When saving or exporting the archive, some tweets that appeared correctly in the tweet stream (*see Figure 6*) were duplicated in the

PDF version (see Figure 7) and in the CSV data file. Note the two original tweets as displayed on the TwapperKeeper website (one indicated by a light grey arrow and the other marked with a dark grey arrow) in Figure 6. Compare this to the exported PDF file data in Figure 7 (duplicates of the same tweet are noted by the same shaded arrows as used in Figure 6). This required that duplicate entries be manually deleted from the Microsoft Excel spreadsheet into which the CSV data file had been imported.

Figure 6: Screen Capture of #SDI09 Twitter Archive Showing Correct Tweet Stream

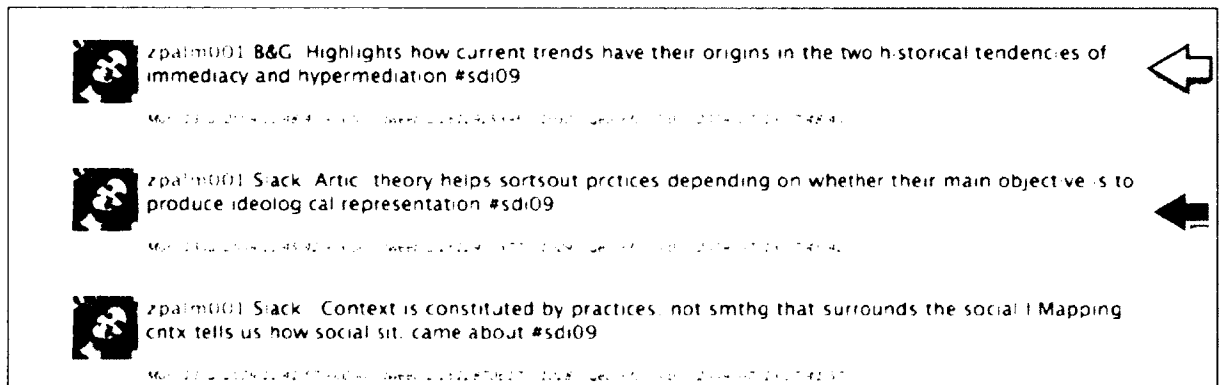
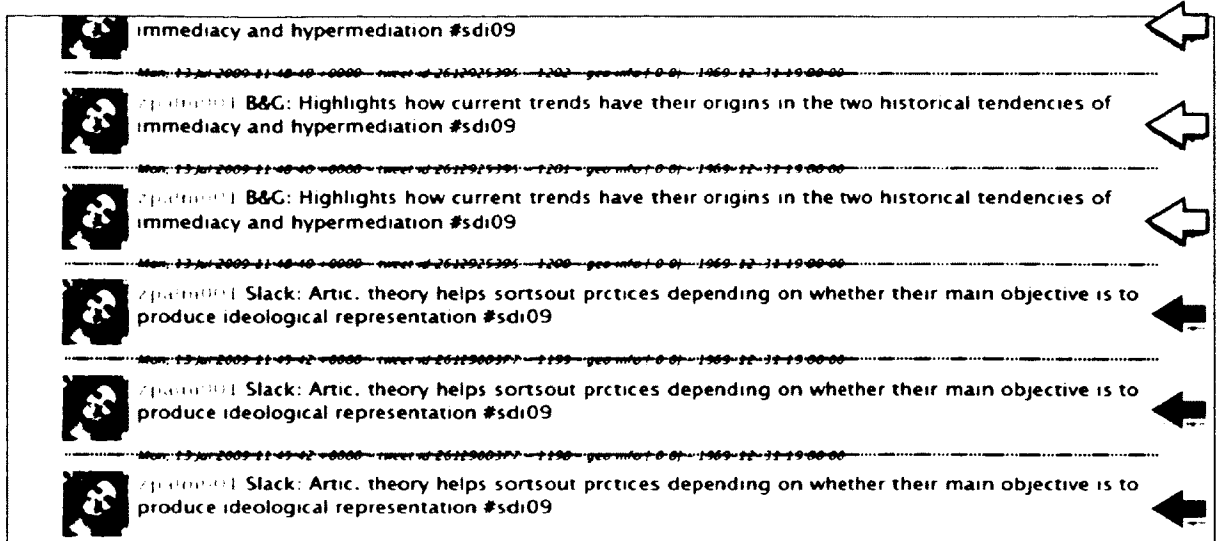


Figure 7: Screen Capture of #SDI09 PDF File Showing Tweet Duplication



Additionally, a coding glitch in the original version of TwapperKeeper (since corrected) converted some special characters such as quotes and ampersands into character entities or other symbol strands (O'Brien, 2009) as highlighted below in Table 3. Typical automated search-and-replace strategies to correct these character entities did not work on the archive data imported into Microsoft Excel. As a result, a manual (and time-intensive) correction process was applied to much of the spreadsheet. However, this issue did not prevent proper coding of data for this study.

Table 3: Sample Tweets Including Character Entities Rather than Special Characters

Tweet ID	From Twitter User	Tweet Text
2603753840	TiffanySantana	hrwy-I'm reminded of the short story "Like a Winding Sheet" when reading about the "feminization" of work. #sdi09
	<i>Manually corrected version</i>	hrwy-I'm reminded of the short story "Like a Winding Sheet" when reading about the "feminization" of work. #sdi09
2604749632	varhodes	B&G: transparency & opacity discussion reminds me of Lanham's THRU vs. AT (in Electronic Word) #SDI09
	<i>Manually corrected version</i>	B&G: transparency & opacity discussion reminds me of Lanham's THRU vs. AT (in Electronic Word) #SDI09
2604816128	varhodes	dig comp implications? #SDI09 RT @WestPeter: <Article>The digital native “ myth and reality http://is.gd/1w53y (Aslib Proceedings)
	<i>Manually corrected version *special symbol unclear</i>	dig comp implications? #SDI09 RT @WestPeter: <Article>The digital native “ myth and reality http://is.gd/1w53y (Aslib Proceedings)

A final challenge of note in working with the #SDI09 data set was the issue of incomplete tweets included in the archive. I encountered this problem as a result of Twitter service issues and API restrictions placed on TwapperKeeper at the time the course archive was being collected. A total of 188 incomplete tweets (7.9 percent of the total) are part of the #SDI09 data set. For the purposes of this study, I coded the available portions of the tweets as collected. Although both Twitter and TwapperKeeper advanced significantly in terms of reliability and sophistication since 2009, the collection of SDI11 data was not without its own set of challenges.

2011: Trouble with TwapperKeeper, Twitter, and Terms of Service

TwapperKeeper, a web-based Twitter-archiving service, was launched in June 2009 by John O'Brien as a "fun weekend hack" (O'Brien 2010a). The service

(www.TwapperKeeper.com) allowed an individual to set up an archive that collected tweets based on a hashtag, a keyword, or a specific person (although only that person could establish his or her own personal archive). Increased demand for Twitter archives led to greater costs for servers and storage. On April 26, 2010, TwapperKeeper entered a partnership with the Joint Information Systems Committee (JISC) and became grant-funded. That news was released the same week of the Twitter Chirp conference where Twitter announced that the Library of Congress and Google would offer archives of tweets (O'Brien 2010b). The TwapperKeeper grant partnership arose out of the recognition of the importance of Twitter archiving and the UK higher education community's increasing use of the service for academic research (Kelly, 2010). JISC had decided it was more cost effective to support the development of an existing service to ensure the UK higher education community's needs were met than to commission development of a new service (Kelly et al, 2010).

From March to April 2010, the archives doubled from 50 million to 100 million tweets. And, on October 8, 2010 TwapperKeeper passed a major milestone announcing that more than one billion tweets (1,023,431,484 tweets in 14,248 archives) had been stored (O'Brien, 2010a). O'Brien blogged that he "came to the realization that TwapperKeeper.com [could not] be the only archiving platform, especially in special cases where people want quicker archiving times" and decided to take the "best pieces of TwapperKeeper" and rewrite them from the ground up. On August 25, 2010, he released yourTwapperKeeper — an open source version of TwapperKeeper.com that runs on an individual's own server (O'Brien 2010b). To keep up with demand and server resource needs for TwapperKeeper.com the service moved to a "freemium" model in early 2011

(O'Brien, 2012). A freemium service provides a basic level of functionality to users for free but provides additional and/or advanced features for a premium fee.

On February 22, 2011, O'Brien announced that he would be removing the export and download as well as the API features of the TwapperKeeper.com website "at the request of Twitter to bring [the] service into alignment with API Terms of Service... regarding the redistribution and syndication of content" (O'Brien, 2011). This new effort at strict enforcement of its terms of service by Twitter was aimed at other services in addition to TwapperKeeper and posed difficulties for many academic researchers (Watters, 2011) — myself included. In late 2011, HootSuite (a commercial social-media management and dashboard service) acquired TwapperKeeper eventually shutting down the web site and migrating its primary archiving features to the HootSuite Pro paid platform on January 6, 2012 (O'Brien, 2012). Sadly, the agreement with Google to provide access to the full Twitter archive did not fully materialize. Google provided the capability to search the last two months of tweets through its Replay service. This service was subsequently retired when Google's agreement with Twitter expired on July 2, 2011. Google shut down the service because of its heavy reliance on Twitter's fire hose data feed to drive search results (Sullivan 2011, Charman-Anderson 2011). Similarly, the Library of Congress has yet to provide a search mechanism for the archive it holds and has indicated it may only provide only certain approved scholars with access — and only for certain "significant" topics or events.

Thus, my best option for collecting the tweets generated for ENGL 895: Tracing Digital Cultures during the 2011 Summer Doctoral Institute was to rent a 512MB cloud-based Linux server and, with the considerable assistance of Dr. Julie Meloni, set up an

installation of your TwapperKeeper. This allowed me to collect 1,511 tweets that included the #ODUSDI course hashtag generated by the five course participants, the instructor, and various outside participants. The course syllabus for the 2011 course required a minimum of one tweet per assigned reading and a minimum of two tweet replies to posts by fellow students. I maintained the cloud server for approximately 6 months (June – November 2011) to ensure collection of hashtagged tweets before, during, and immediately after the course as well as to provide a location for storing the data until such a time as I could migrate it to an Excel spreadsheet for coding and long-term archiving purposes. The average cost of the server was \$22.40 per month with the technology-related costs for data collection totaling \$125.96 for all server, data storage and data transfer fees.

My research study (HS #11-002) was approved by the ODU Arts & Letters Institutional Review Board on July 21, 2011. Initially, my research plan included the following:

- Administration of a basic information survey and analysis of the results;
- Collection and analysis of semi-structured interviews of graduate students and faculty about new media composition;
- Collection and analysis of public tweets (microblogging posts published online via Twitter);
- Observation of face-to-face class sessions held during the 2011 Summer Doctoral Institute (with instructor permission); and
- Collection and analysis of course syllabi for the three selected courses.

However, after careful consideration, some of these elements were eliminated. Although the basic information survey and semi-structured interviews of graduate student participants might have added some insight, the emergent nature of my study made it difficult to treat each case study equally. That is, the 2009 course took place two years earlier and student participants were both far removed from their initial course experience

and much more savvy with Twitter by the time I could interview them. While I could have interviewed the 2011 participants, I would have had no basis for comparison for their answers. And, with such a small sample size, I was doubtful the survey and interviews would yield significant, actionable information. Additionally, I attended the first few on-campus class meetings, but observation of these initial sessions yielded little of use regarding the nature of online community and little that could be compared directly to the Twitter archives. Thus, it seemed best to limit the scope of my research to the online trace — the digital transcripts of tweeted conversations and the course syllabi posted on the internet — for both Summer Doctoral Institutes being studied. In addition to bounding a more manageable corpus of data, this decision provided the best opportunity for a direct comparison of like data. This decision to eliminate elements did not change the basis for my granted IRB exemption.

In conducting digital research, it becomes critical to consider notions of privacy (Rutter & Smith, 2005). My study examined typical, readily available course documents (such as course syllabi) and publicly available tweets (microblogging messages posted via Twitter). In the case of the archives collected, all the individual tweets were completely public. No password was required for viewing them. The viewer need not be a "follower" of the specific person (equivalent to a Facebook friend) to view the posted messages. In fact, all the tweets used a common hashtag for the course (#SDI09 or #ODUSDI) that allowed the tweets to be found and aggregated via a search of the public Twitter stream. Thus, these messages were truly public — available to anyone. There was no expectation of privacy. My data archives do not include any direct messages in which senders would expect that only they and the recipients would see the message. In fact, the

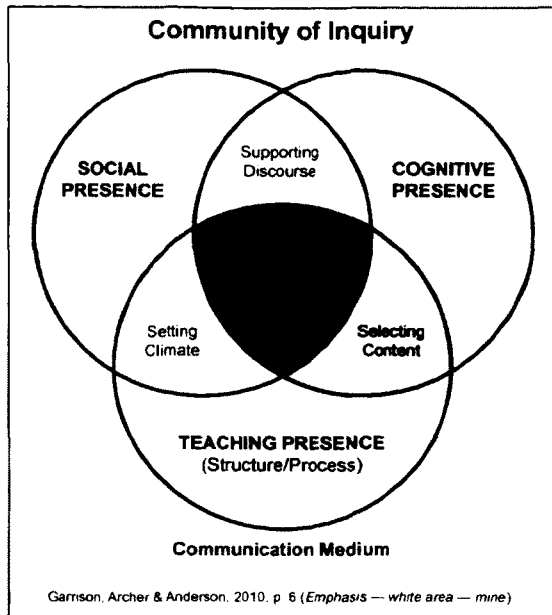
aggregation software and service utilized, your TwapperKeeper and TwapperKeeper.com, did not allow me to capture direct messages between two parties. Further, in each course, the instructors offered the opportunity for students to create “dummy accounts” that used an anonymized name and/or that did not include any personal or identifying information so that each student could further protect her/his identity should she/he choose to do so. Thus, usernames and image avatars (if present) were consciously selected and made available to the public at large by choice.

The approach to data collection described in this chapter resulted in the archiving of 3,822 total tweets generated over the course of two Summer Doctoral Institutes. These tweets, along with the three course syllabi documents, would provide the basis for my analysis. Now, I will discuss the lenses through which the data was examined.

The Community of Inquiry Framework and Assessing the Existence of Social Presence

As described in Chapter 2, The Community of Inquiry (CoI) model (*see Figure 8*) explores three critical elements of online higher education experiences — social presence, cognitive presence, and teaching presence — and their areas of overlap.

Figure 8: Community of Inquiry Venn Diagram



Cognitive presence is the degree to which participants within a CoI are able to construct meaning through sustained conversation via the digital communications venue (Rourke et al., 1999, p. 51). Teaching presence is comprised of the pedagogical choices that facilitate and direct social and cognitive processes with the goal of maximizing beneficial learning outcomes (Garrison, Cleveland-Innes & Fung, 2010, p.32). And social presence is the projection of learner's selves socially and emotionally into a CoI (Rourke et al., 1999) and the extent to which participants engaged in computer mediated communication (CMC) feel affectively connected (Swan & Ice, 2010).

The central, dark-gray region of the Venn diagram presented in Figure 8 represents improved educational performance. It is not the purpose of my dissertation to cover that ground. Rather, my research study will explore whether microblogging technology facilitates stronger online community. While many factors contribute to each

domain (cognitive, teaching and social presence), my narrow focus on microblogging technology places my research in two particular areas of overlap in addition to the central region: setting climate and supporting discourse (*noted with emphasis in Figure 8*).

In the CoI framework, social presence is a mediating variable between the other core concepts (Garrison, Anderson & Archer, 2010; Garrison, Cleveland-Innes & Fung, 2010); a responsibility of teaching presence and a necessary condition for cognitive presence (Garrison, Cleveland-Innes & Fung, 2010). Indeed, social presence appears to play an important role in advancing significant learning (Shea et al., 2010). Rourke et al. (1999) note:

Social presence supports cognitive objectives through its ability to instigate, sustain, and support critical thinking in a community of learners. It supports affective objectives by making the group interactions appealing, engaging, and thus intrinsically rewarding, leading to an increase in academic, social and institutional integration and resulting in increased persistence and course completion (Tinto, 1987). (p. 52-53)

The CoI framework identifies three indicators of social presence (affective, cohesive, and interactive) that can be used to measure the extent of social presence in a particular mode of CMC. Affective indicators are “personal expressions of emotion, feelings, beliefs, and values” and are thought to make up for the lack of gestures, facial expressions, intonation and other cues commonly available in face-to-face communication (Swan, 2002, pg. 37). Cohesive indicators are “verbal immediacy behaviors that build and sustain a sense of group commitment or group presence” (p.37). Interactive indicators provide evidence that other participants are attending to the discourse (p. 38).

Swan (2002) and Akayoglu et al. (2009) draw on the work of Rourke et al. (1999) in adapting these three types of indicators to gauge the level of social presence in their own data sets. Swan’s study (2002) analyzed asynchronous online discussion in a

graduate-level education course. The class was delivered entirely online and consisted of four modules (each roughly three weeks in duration) in which three instructor-developed questions were used to generate large discussions. From across all four modules, she collected a total of 235 postings in 39 discussion threads representing approximately 10 percent of all postings. Akayoglu et al. (2009) studied the synchronous chat logs from a web-based community of online language teachers and learners. Drawing from a year's worth of logs (at the time of the study the community had been meeting online for approximately ten years), they used a pseudorandom number generator to select five of 42 chat logs for analysis. While each of these studies examines an online, computer-mediated environment, neither specifically analyzes the particular technology in that environment for its role in developing or impeding community formation — a clear indicator of the need to apply professional and technical communications methodologies to this type of research.

The codes generated by the work of Rourke et al. (1999) served as a starting point for both Swan (2002) and Akayoglu et al. (2009). But, as Table 4 demonstrates, these later researchers did not slavishly apply them. In some cases, modifications (*noted in bold*) were as simple as changing a label (for example, Swan's shortening of "addresses or refers to group using inclusive pronouns" to simply "group reference" and changing "asking questions" to "invitation") or splitting one indicator into two (as Akayoglu et al. did with "complimenting, expressing appreciation" and "expressing agreement"). In other cases, significant changes were made (*see Swan's reclassifying of interactive indicators in Table 5 as an example*).

Table 4: Comparison of Social Presence Indicator Codes Across Studies

	Rourke et al. (1999)	Swan (2002)	Akayoglu et al. (2009)	Rhodes (2014)
Affective Indicators	<ul style="list-style-type: none"> • Expression of emotions • Use of humor • Self-disclosure 	<ul style="list-style-type: none"> • Paralanguage • Emotion • Value • Humor • Self-disclosure 	<ul style="list-style-type: none"> • Expression of emotions • Use of humor • Self-disclosure 	<ul style="list-style-type: none"> • Paralanguage • Emotion • Value • Humor • Self-disclosure
Cohesive Indicators	<ul style="list-style-type: none"> • Vocatives • Addresses or refers to group using inclusive pronouns • Phatics, salutations 	<ul style="list-style-type: none"> • Greetings & salutations • Vocatives • Group reference • Social sharing • Course reflection 	<ul style="list-style-type: none"> • Vocatives • Addresses or refers to the group using inclusive pronouns • Phatics, salutations 	<ul style="list-style-type: none"> • Greetings & salutations • Vocatives • Group reference • Hashtag • Social sharing • Course reflection • Off-Topic
Interactive Indicators	<ul style="list-style-type: none"> • Continuing a thread • Quoting from others' messages • Referring explicitly to others' messages • Asking questions • Complimenting, expressing appreciation, expressing agreement 	<ul style="list-style-type: none"> • Acknowledgement • Agreement or disagreement • Approval • Invitation • Personal Advice 	<ul style="list-style-type: none"> • Continuing a thread • Quoting from others' messages • Referring explicitly to others' messages • Asking questions • Complimenting, expressing appreciation • Expressing agreement 	<ul style="list-style-type: none"> • Acknowledgement • Agreement or disagreement • Approval • Invitation • Personal Advice • @Reply • Re-tweet
Emergent Codes		<p><i>Note: Swan reported her emergent codes in the context of the three broad categories (see italics). Akayoglu et al. reported them as emergent based on additions made by Rourke et al (2001), but noted category placement in the body of their article.</i></p>	<ul style="list-style-type: none"> • <i>Link sharing (Interactive)</i> • <i>Gratitude (Cohesive)</i> • <i>Pre-sequential leave taking (Cohesive)</i> • <i>Leave taking (Cohesive)</i> • <i>Reply leave taking (Cohesive)</i> 	<p><i>Note: My emergent codes also are reported in the context of the three broad categories (see italics).</i></p>
	# of indicators: 11	# of indicators: 15	# of indicators: 17	# of indicators: 19

Table 5: Sample Modification of Social Presence Indicator Codes by Swan (2002)

Rourke et al. (1999)	Swan (2002)
• Continuing a thread	<i>(No equivalent code)</i>
• Quoting from others' messages • Referring explicitly to others' messages	• Acknowledgement
• Complimenting, expressing appreciation, expressing agreement	• Agreement or disagreement
• Complimenting, expressing appreciation, expressing agreement	• Approval
• Asking questions	• Invitation
<i>(No equivalent code)</i>	• <i>Personal Advice</i>

As part of their content analysis, Rourke et al. (1999) worked deductively developing categories and indicators that could then be used to analyze their transcripts. Their codes were generated on the basis of their own theory-making efforts and concepts or theories available in relevant academic literature related to media capacity, teacher presence and group interaction. Rourke et al. report, “additional indices were deduced from careful readings of the transcripts and then added to the coding scheme” (p. 56). Akayoglu et al. (2009) relied only on the codes of Rourke et al. (making only the one minor change to the original coding scheme noted above), but added additional emergent codes (*noted in italics in Table 4*) based on their data. Some codes (such as “link sharing”) were entirely new — likely evident in the data because of new technological affordances and/or broader use of the internet. Others had their roots in an original code but analysis of the data set highlighted the need to divide it. Akayoglu et al. (2009) note that, although it could technically have been accounted for under the cohesive indicator of “phatics,” they created the “gratitude” code because its frequency warranted it (p. 10).

Similarly, their remaining new codes were added to reflect emergent patterns in the data set.

As can be seen in Table 4, I elected to use Swan's codes as the basis for my exploration of social presence in my two tweet archives. Her categories seemed more descriptive and offered greater coding options (such as paralinguistic and social sharing, for example). In addition, the codes utilized by Akayoglu et al. seemed more linguistically focused than Swan's which tended to be (in my estimation) more descriptive in nature. Given the 140-character limit inherent in microblogging, I decided that descriptive codes made the most sense for my study. For example, the hyper-short format of tweets might lend itself well to use of paralinguistic but limit the use of phatics or salutations. Based on my readings of Rovai's concept of online classroom community (to be described later in this chapter), I knew that some attention should be paid to whether posts were task-driven or socio-emotional in nature. Therefore, before analyzing my data I added an additional code (off-topic) to the cohesive indicator set.

Since my second research question deals specifically with how microblogging helped or hindered community formation online, it became clear that I should consider the affordances of Twitter and ensure that I had an appropriate code (or codes) for capturing the influence of the social software. To that end, after analyzing just a few pages of data I added two codes. Retweets and @replies are specific functionality within the Twitter system. While these instances could have been counted under another existing code (for example, an @reply could be counted under a vocative or a retweet could be coded under acknowledgment), doing so would mask the influence of Twitter. I added a third emergent code based on the functionality of the social software at the end of my

analysis — the hashtag code. Originally, I had not included this as a separate code. It was merely a criterion for the inclusion of a tweet in my archive. However, as I began to consider the performative aspect of labeling each tweet with a hashtag (and, thus, each participant consciously labeling her- or himself a member of the community), I realized that this code must be included in my data set and my analysis. The final emergent code arose as I considered tweets that might fall within the social sharing category. While some were clearly social in nature, others did not discuss the specific reading at hand or the current assignment. Instead, the tweet might make reference to another scholar, an unassigned reading, or some other aspect of the course (but not an observation on the class as a whole which would have qualified the tweet for the “course reflection” code). These off-topic tweets needed a code of their own hence the addition of my fourth emergent code.

In preparing the archives, I took the CSV (comma separated value) file exported from either TwapperKeeper.com or yourTwapperKeeper on my virtual server and imported that data into an Excel spreadsheet. The data imported included the following elements:

- Archive Source (whether the tweet was captured as part of the Twitter Stream or a Twitter search that periodically looked for missed tweets meeting the archive criteria)
- Text (the full text of the tweet)
- To User ID (the unique numerical ID for the user, if any, to whom a particular tweet was directed; for example, an @reply)
- From User (the username author of the tweet)
- From User ID (the unique numerical ID for the author of the tweet)
- Tweet ID (the unique numerical identifier assigned to each tweet)
- Language Code (identifies the language of the tweet)
- Source (identifies the client that created the tweet; for example, TweetDeck, another third-party client, or the Twitter website)
- Profile Image URL (web address of author’s profile picture)

- Geographical Coordinates (location from which the tweet was sent if that functionality was activated)
- Date and Time created (reported in Greenwich Mean Time)

For the purposes of my coding I kept only the Tweet ID, Text, From User, and Date and Time created. Within the spreadsheet, I hid all columns except the Twitter ID, Text and From User information. I then added individual columns for each of the 19 social presence indicators I would be using in my analysis (*see Appendix A for a sample of this spreadsheet and coding*). I then assigned a binary value for each indicator as I coded. If the tweet exhibited a particular indicator, I assigned a value of 1. If it did not, I left the column blank. This method merely shows evidence of a particular code, but not its magnitude. The implications of this method (examining presence only and not magnitude) will be discussed in Chapter 5. Each archive was coded and subsequently reviewed a minimum of three times by me to ensure proper coding and to resolve any lingering questions about the applicability and consistent application of particular codes. After my first review of the data, I added a column to the spreadsheet for notes where I recorded information about how I made decisions to apply particular codes and explaining my coding strategies to ensure consistency throughout the process.

As evidenced by its widespread use (as related in Chapter 2), the CoI framework is a well-established and validated method, but its creators acknowledge their method of transcript analysis is “just one of many lenses through which researchers can investigate and measure the development of a community of inquiry” (Garrison, Anderson & Archer, 2010, p. 8). While its use will allow me to document the existence or absence of social presence in my case study and determine whether Twitter facilitates or impedes the

development of online community, it remains important to corroborate these findings via another framework.

Rovai's Concept of Online Classroom Community

To that end I also examined the #SDI09 and #ODUSDI Twitter archives through the theoretical lens of Rovai's work in online community (2002). He offers four dimensions as evidence of classroom community: spirit, trust, interaction, and learning. While my application of the Community of Inquiry framework took a more quantitative approach, my use of Rovai's concept as a lens for examining my data is more qualitative in nature. Given the nature of the data collected for my case studies, I will again rely upon transcript/discourse analysis to look for evidence of online classroom community as proposed by Rovai. I reviewed each data set at least three times as part of my social presence coding strategy. This helped me gain a solid familiarity with the information included in each data set. I returned to the archives again to look for examples of tweets that demonstrated spirit, trust, interaction and learning. Although primarily a qualitative analytical strategy, I also was able to apply my social presence findings as various codes support dimensions identified by Rovai.

For instance, one example of spirit is the use of humor that facilitates the creation of common understanding and helps generate solidarity and group identity (Baym, 1995). While laughter and smiles confirm that a comment is humorous and that the audience relates to the values of a joke or appreciates the intellect required by the joke (Hubler & Bell, 2003), those cues are missing in online exchanges like tweets. Instead, text-based CMC attempting to be humorous may rely on playing with the appearance of text or

characters in addition to the typical word play (Hubler & Bell, 2003). To that end, tweets coded as humorous because they included sarcasm, jokes, clichés, colloquialisms, textual laughter equivalents (LOL), and/or emoticons as I analyzed social presence in the archives also support the presence of Rovai's dimension of spirit. This social presence code and others will be reported in the context of Rovai's conception of online classroom community and discussed in greater detail as part of my analysis in Chapter 5.

The second research question to be considered is whether Twitter is a viable tool for the facilitation of online classroom community. Rovai (2002) offers seven factors positively correlated to classroom community: transactional distance, social presence, social equality, small group activities, group facilitation, teaching style and learning stage, and community size. Although we have noted that a CMC tool is not sufficient for creating community in and of itself (Lee, 2006), examining the factors relevant to Twitter among these seven domains should demonstrate whether the social networking technology is useful in terms of building stronger online classroom community. For these purposes, I will closely examine the factors of transactional distance and social presence. Although the other five of Rovai's factors do not specifically apply to a technological tool, I will cover each of them in my dissertation as further background in considering the development of community in my selected case studies.

Rovai calls on Moore (1993) in defining transactional distance as the psychological and communicative space between learners and instructors (2002). Transactional distance is dependent on dialogue and structure (Moisey, Neu and Cleveland Innes, 2008) where structure refers to the amount of control exercised by an instructor in a learning environment as opposed to dialogue that affords the student a

greater level of control (Rovai, 2002). High levels of structure and low levels of dialogue translate into a greater or “remote” transactional distance while lower levels of structure and higher levels of dialogue result in “closer” transactional distance and a stronger sense of community (Moisey, Neu and Cleveland Innes, 2008, p. 22).

This is closely related to the concept of immediacy. Swan notes that immediacy (also defined as the perceived psychological distance between communicators) can be enhanced verbally (via behaviors such as offering praise, soliciting viewpoints, use of humor, and self-disclosure) and non-verbally (via physical proximity, touch, eye contact, facial expressions, and gestures) (2002, p.35). Although non-verbal cues are not available via CMC, instructors and classmates may engage in text-based equivalents of verbal cues (i.e. paralanguage). Examining the frequency of these behaviors as well as the frequency of @replies, retweets and instructor comments allows me to gauge the sense of immediacy within the archive.

The final factor that contributes to classroom community building is social presence (Rovai, 2002). Participating in CMC creates social presence for communicators by projecting identities and building online communities through the use of verbal immediacy behaviors (Swan, 2002). According to social presence theory, what matters in relationships developed via CMC is that a participant in a discussion must feel that the other communicator is a “real person” (Bikowski, 2007; Akayoglu et al, 2009). Dunlap & Lowenthal note, “What seems to be missing [in online courses] is the just-in-time, and sometimes playful, interactions that happen before and after class, during a break, and when students and faculty bump into each other between class meetings” (2009, p.129). In her study of an online community, Bikowski (2007) found that the students who

formed friendships online felt that their peers were real; expressing emotion, engaging in humorous exchanges, sharing pictures and talking about their personal lives. A review of the use of humor, frequency of off-topic exchanges, and the quantity of shared personal information allows for quantification of social presence within the #SDI09 and #ODUSDI datasets.

Limitations to this Study

This study is emergent in nature. Although a fully conceptualized study developed before any of the courses took place could be worthwhile in its own right because of the opportunity to triangulate archive findings with student interviews and surveys about their own experience of community, this study occurred as a result of my evolving awareness of a sense of community. Precisely because I was a participant in the 2009 SDI, I experienced an emotional connection I had not yet encountered in my previous classes. I could not have conceived of an experimental method for this case study prior to that moment because I had not yet become aware that a sense of community could exist. That realization came only after I completed the course. And my desire to empirically examine the existence of a sense of community necessarily had to follow that experience. I could not have functioned as a researcher in 2009 because I had no topic. I had not yet encountered the course pathos that would set me on the path to this study.

With all that said, there are some limitations to the work presented in this dissertation. First, it is clearly not generalizable across institutions. Considering the small sample size and the specific structure of ODU's Summer Doctoral Institute, these findings represent only the two cases studies presented. However, I believe my findings

can point the way toward further work in examining online classroom community from a rhetorical perspective. Additionally, there are some ways in which my status relative to the courses making up the case studies also impacts my analysis. In 2009, I was a participant. While I was not yet conducting the research and could, therefore, not intentionally or inadvertently bias the study, I came to know the students involved in the twitter discussion well. As a result, I better understood personalities, tone, intent and jokes as I reviewed the tweet archive. Having read the course assignments and completed them myself, I had a better sense of when a comment was on topic or how various tweets might refer to each other or “thread” together.

This became particularly clear as I analyzed the 2011 SDI archive, two years had elapsed and some required readings had changed. I did not have first-hand knowledge of the assignments. While I knew casually some of the participants in the course, I was not close with them and had not shared the classroom experience with them. As a result, it became more difficult to recognize what might be construed as humor or sarcasm. I encountered more difficulty in knowing whether a tweet was on- or off-topic. I had less a sense of how comments threaded together. When faced with these uncertainties, I erred on the side of not applying a code. However, despite my role as a participant in one case study and an outside observer in the other, I did not have insurmountable difficulty in coding tweets for social presence and I do not believe the results of my analysis to be compromised.

Additionally, as I outlined earlier in this chapter, both Twitter and TwapperKeeper were prone to technological challenges during collection of the 2009 data. These issues were largely resolved by 2011 but I cannot discount that some

information was missed and some tweets were either incomplete or distorted. In some cases, tweets might not have been collected in the archive because a student forgot to include the course hashtag (#SDI09 or #ODUSDI). In other cases, the use of technology might be a barrier in and of itself. By virtue of the necessary search criterion, the archive only includes tweets including the proper hashtag. But first and foremost, the participant must have actively engaged with the technology. In 2009 Twitter as software and microblogging as a form of social media were both very new. If participants experienced problems with the software or were not technologically savvy, they may not have participated robustly, they may not have experienced a sense of community, and their experience may be only lightly represented in the data set.

Finally, this study only seeks empirical evidence of community based on the digital transcript. As previously discussed, I did not interview participants or have them complete a survey seeking their individual opinions about experiencing online community. Primarily, this was because I did not have equal access to the participants (since the 2009 SDI concluded well before the start of my study) and would not have feedback from both groups for comparison. Despite these limitations, the data are revealing. Chapter 4 will present the findings of my coding for social presence in the archives while Chapter 5 will present the analysis of my findings and seek to answer my research questions:

- **Question 1:** Do the evaluative frameworks (Community of Inquiry and Rovai's classroom community) confirm an online community exists in the three courses examined?
- **Question 2:** In what ways did microblogging facilitate or hinder community formation in this context?
- **Question 3:** What revisions to our definitions of online classroom community does my research suggest?

CHAPTER 4

FINDINGS: CODING THE SUMMER DOCTORAL INSTITUTE ARCHIVES FOR INDICATORS OF SOCIAL PRESENCE

In the previous chapter I outlined my methods for collecting and analyzing the data in my study. Specifically, I collected tweets using the combined hashtag (#SDI09) for two 2009 Summer Doctoral Institute courses into one digital archive. When one of those same courses was offered again during the 2011 Summer Doctoral Institute, I collected a second digital archive of tweets using the hashtag for that course (#ODUSDI). I then placed these tweet archives into Excel spreadsheets allowing me to code my data based on social presence indicators as prescribed by the Community of Inquiry Framework. In this chapter, I will report and discuss my findings based on analysis of those archives.

Rourke et al (1999) see the development of social presence as the cornerstone of development for online learning communities. Within the Community of Inquiry (CoI) framework, three different types of indicators are identified: affective, cohesive and interactive. Affective indicators are “personal expressions of emotion, feelings, beliefs, and values” and are thought to make up for the lack of gestures, facial expressions, intonation and other cues commonly available in face-to-face communication (Swan, 2002, p.37). Cohesive indicators are “verbal immediacy behaviors that build and sustain a sense of group commitment or group presence” (p.37) Interactive indicators provide evidence that other participants are attending to the discourse (p. 38).

As noted in the previous chapter, my coding structure most closely follows that utilized in Swan's 2002 study (although my choices also are influenced by the work of Akayoglu, Altun, & Stevens (2009)) with the addition of emergent codes that arose uniquely because of the use of Twitter as a microblogging tool in the Summer Doctoral Institute courses (see Table 6). No one had yet applied this framework to a social media archive in general or a microblogging format such as Twitter specifically. Given that gap, I believed it important to both code for and report the results for all 19 indicators of social presence.

These 19 codes (five affective indicators, seven cohesive indicators, and seven interactive indicators) were applied to the #SDI09 twitter archive containing 2,311 tweets generated by the 11 students, two instructors, and outside participants in the ENGL 894 and ENGL 895 courses in Summer 2009 and the #ODUSDI twitter archive containing 1,511 tweets generated by the five students, two instructors, and outside participants in the ENGL 895 course in Summer 2011 to determine the social presence evidenced in the digital archive and to aid in determining whether a sense of online classroom community existed during these Summer Doctoral Institutes.

Table 6: Comparison of Social Presence Indicator Codes

	Swan (2002)	Akayoglu et al. (2009)	Rhodes (2014)
Affective Indicators	<ul style="list-style-type: none"> Paralanguage Emotion Value Humor Self-disclosure 	<ul style="list-style-type: none"> Expression of emotions Use of humor Self-disclosure 	<ul style="list-style-type: none"> Paralanguage Emotion Value Humor Self-disclosure
Cohesive Indicators	<ul style="list-style-type: none"> Greetings & salutations Vocatives Group reference Social sharing Course reflection* 	<ul style="list-style-type: none"> Vocatives Addresses or refers to the group using inclusive pronouns Phatics, salutations 	<ul style="list-style-type: none"> Greetings & salutations Vocatives Group reference Hashtag* Social sharing Course reflection Off-Topic*
Interactive Indicators	<ul style="list-style-type: none"> Acknowledgement Agreement or disagreement Approval Invitation Personal Advice* 	<ul style="list-style-type: none"> Continuing a thread Quoting from others' messages Referring explicitly to others' messages Asking questions Complimenting, expressing appreciation Expressing agreement 	<ul style="list-style-type: none"> Acknowledgement Agreement or disagreement Approval Invitation Personal Advice @Reply* Re-tweet*
Emergent Codes	<p><i>Note: Swan reported her emergent codes in the context of the three broad categories. Akayoglu et al. reported them as emergent based on additions made by Rourke et al (2001), but noted category placement in the body of their article.</i></p>	<ul style="list-style-type: none"> Link sharing (Interactive) Gratitude (Cohesive) Pre-sequential leave taking (Cohesive) Leave taking (Cohesive) Reply leave taking (Cohesive) 	<p><i>Note: Emergent codes in this figure from Swan and Rhodes are noted with an asterisk if not included in the emergent code row.</i></p>
	# of indicators: 15	# of indicators: 17	# of indicators: 19

The #SDI09 archive generated 8,222 codes with an average of 3.56 codes per tweet while the #ODUSDI archive generated 5,873 codes with an average of 3.89 codes per tweet. The mode was 3.00 codes per tweet in both archives with a median of 3.00 codes per tweet in #SDI09 and 4.00 codes per tweet in #ODUSDI. The standard deviation for both archives was 1.48. In the #SDI09 archive, 6.01 percent of the tweets (n=139)

earned only a single code (the hashtag code which qualified it for inclusion in the data sets) as compared with 3.84 percent (n=58) in the #ODUSDI archive labeled with only a single code.

This means nearly 94 percent of the tweets in the archive were assigned multiple codes. With 42.88 percent (n=991) in #SDI09 and 50.50 percent (n=763) in #ODUSDI of tweets including at least one affective, cohesive and interactive indicator, a large portion of each archive showed evidence of all three types of indicators within a single tweet. Of the total codes assigned in the #SDI09 archive, 27.00 percent (n=2,220) were affective indicators, 43.93 percent (n=3,612) were cohesive indicators, and 29.06 percent (n=2,389) were interactive indicators. In the #ODUSDI archive, 30.51 percent (n=1,792) were affective indicators, 43.40 percent (n=2,549) were cohesive indicators, and 26.09 (n=1,532) were interactive indicators.

Affective Indicators

The five affective indicators include paralanguage, emotion, value, humor, and self-disclosure. Each of these indicators signals the existence of emotional or affective communication.

Paralanguage.

To qualify for the paralanguage code, a tweet must have included features of text outside formal syntax used to convey emotion (for example, emoticons or exaggerated punctuation or spelling). Example tweets meeting these criteria are provided in Table 7.

Paralanguage codes were noted within the #SDI09 archive in 9.22 percent of the tweets (n=213) and within the #ODUSDI archive in 8.54 percent of the tweets (n=129).

Table 7: Sample Tweets Including the Affective Paralanguage Indicator

Paralanguage (P) Affective Indicator	
Definition: Features of text outside formal syntax used to convey emotion (i.e. emoticons, exaggerated punctuation or spelling)	
References: Swann (2002), Akayoglu, Altun, & Stevens (2009)	
Examples	Explanation
@ebensen65 A book on twitter. That just seems wrong. HAHHAHAHA! #sdi09	Exaggerated spelling and all capital letters
@LizaPotts #SDI09 Offline for most of this week? I'll believe it when I see--er, DONT see it. :)	All capital letters; use of smiling emoticon <i>Note: More than one example of paralanguage may occur in each tweet.</i>
#sdi09 Morville makes me wonder if we're moving from Librarians to CYbrarians.	Capitalization of first two letters to emphasize word play
Mirzoeff #sdi09 "not surprising that women have most quickly adopted the web cam format . . ." (p. 343). What?????	Exaggerated punctuation
#SDI09 I can't explain that in 140 characters. *shrug*	Use of punctuation to offset text equivalent of a visual cue and/or physical gesture
Latour 4th Src #sdi09 p 91 social constructivism works because it is *more real* than constructivism, so ANT also is more real.	Punctuation used for emphasis <i>Note: Using all capital letters for an acronym (example: ANT) does not qualify tweet for this code</i>
The Panopticon AGAIN??!!! lol #sdi09	All capital letters, exaggerated punctuation, and use of LOL (Laugh Out Loud)
@zpalmm001<fangirl> Wow, that was a nice retweet! </fangirl> <composure> well done! </composure> Another win for #S	Use of HTML code convention (open and close tags denoted by commands within angle brackets) to indicate feeling <i>Note: Incomplete tweet</i>

Emotion.

The emotion code is signaled by the use of descriptive words or symbols (i.e. emoticons) that indicate feelings. These may include terms such as “like,” “love,” and “hate” as well as words or phrases that convey a sense of elation, frustration or anger. Example tweets meeting these criteria are provided in Table 8. The emotion indicator appeared in 5.76 percent of the #SDI09 archive tweets (n=132) and in 7.08 percent of the #ODUSDI archive tweets (n=107).

Table 8: Sample Tweets Including the Affective Emotion Indicator

Emotion (E) Affective Indicator Definition: Use of descriptive words that indicate feelings (i.e. love, sad, hate, silly) or implication of an emotional state (frustration, anger, etc) Reference: Swann (2002)	
Examples	Explanation
#SDI09 Feeling very stupid here. Having real difficulty in "getting" McLuhan.	Use of "feeling" signals emotional content
#sdi09 I'm reluctantly un-protecting my profile & updates in hopes that'll eliminate some issues I've had.	"Reluctantly" indicates an emotional state
#sdi09 - I like Benjamin's idea of "emancipation" of art (IV). Does mechanization/digitization emancipate me? Do viewers co-crea	Use of "like" <i>Note: Incomplete tweet</i>
#sdi09 Shirky: Refreshing in a relativistic era that many agreed it was "morally right" to return the phone, yet scary if you don't agre	"Scary" indicates an emotional state <i>Note: Incomplete tweet</i>
140 characters! Blah! #sdi09	"Blah!" indicates dislike or frustration

Examples	Explanation
@zpalm001 #sdi09 ARGH! Not Borges, Shirky! Mea culpa.	"Argh!" indicates frustration <i>Note: The use of all capital letters means this instance would also qualify for the Paralanguage code.</i>
#SDI09 Stolen sidekick page http://bit.ly/HEqhf terrifies me. What power we hold over each other. Who regulates?	Use of "terrifies" indicates an emotional state

Value.

The value code is applied when the tweet expresses a personal value, belief or attitude. These may include expressions of opinion on an academic stance as well as personal beliefs. Example tweets meeting these criteria are provided in Table 9. The value indicator appeared in 37.13 percent of the #SDI09 archive tweets (n=858) and in 42.69 percent of the #ODUSDI archive tweets (n=645). These high percentages are not surprising considering the intent of the communication — to convey reactions and opinions regarding course readings and to continue course-related discussions.

Table 9: Sample Tweets Including the Affective Value Indicator

Value (Val) Affective Indicator Definition: Expressing personal values, beliefs, attitudes and/or judgment (as in making an evaluation of some content or theory) Reference: Swann (2002)	
Examples	Explanation
I loved Prezi intro by @VincentRhodes RT @LizaPotts: @writersbloc Wondering b/c there were planned #odusdi events last yr (planned by Dept)	Use of "loved" signals an attitude
Pssst #odusdi you should be following @buridan and @Dave_L_Jones for an interesting discussion on #ANT this morning. You, too, interwebs!	Characterizing as "interesting discussion" demonstrates an attitude or value judgment
That will also work better for #odusdi folks who are involved with (or attending) the RSA conference	"That will also work better" conveys a belief, attitude or judgment
AF: I thought UPS package tracking was impressive. That's nothing compared to syringe-injected RFIDs! #odusdi	"I thought UPS package tracking was impressive" conveys a belief; "That's nothing compared to syringe-injected RFIDs!" conveys a judgment
@writersbloc Great question. I researched this a bit in the fall & hope to explore more. My thought: much more should be considered. #odusdi	"Hope to explore more" conveys an attitude; "My thought: much more should be considered" conveys a belief
VM p. 4 f2f is gold standard against which cmi is judged: i think this has shifted some. thoughts? #odusdi	"i think this shifted some" conveys a belief

Humor.

The humor code is applied when the tweet shows evidence of teasing, cajoling, irony, sarcasm, understatement or other humorous devices. Example tweets meeting these criteria are provided in Table 10. The humor indicator was applied to 12.94 percent of the #SDI09 archive tweets (n=299) and to 10.46 percent of the #ODUSDI archive tweets (n=158).

Table 10: Sample Tweets Including the Affective Humor Indicator

Humor (H) Affective Indicator Definition: Use of humor (teasing, cajoling, irony, sarcasm, understatement) References: Swann (2002), Akayoglu, Altun, & Stevens (2009)	
Examples	Explanation
The problem with Esperanto is that it just wasn't cool enough. Now...Klingon... #sdi09	Providing the contrast "Now...Klingon..." is evidence of sarcasm
Must be really tired. TTN listing is similar title, but wrong book. Sigh. Time for me to go to bed, I think. #ScrewLooseInOperator #SDI09	Additional hashtag used to indicate humorous intent
@LizaPotts #SDI09 Offline for most of this week? I'll believe it when I see--er, DON'T see it. :)	Overall teasing tone of tweet and use of emoticon signal humor <i>Note: Use of this particular emoticon qualifies the tweet for both a paralanguage indicator and the humor indicator</i>
@LizaPotts With the choice of Tuesday or Tuesday, I guess I'll go with Tuesday. ;) #ODUSDI, but I plan to attend Thurs., this week.	Poking fun at misstatement (saying Tuesday twice rather than saying Tuesday and Thursday) qualifies as humor
Future of Composition Summit 9-5, then back to the hotel for more #odusdi tweeting! (Autocorrect wants to swap that to teething. Hmm)	Humorous observation about autocorrect: "Autocorrect wants to swap that to teething"
@LizaPotts so is it just us and @VelociMat tonight? Save the cool kids for last! Did we decide 6 or 7? #odusdi	"Save the cool kids for last" signals humor/sarcasm
RtS 5: "from now on everything is data" Alas, being an information and "digital stuff" hoarder will pay off! #odusdi	Labeling self as "'digital stuff' hoarder" qualifies as self-deprecating humor

Self-Disclosure.

The self-disclosure code indicates that a tweet includes personal information or that the communicator has expressed vulnerability. Example tweets meeting these criteria are provided in Table 11. The self-disclosure indicator appeared in 31.07 percent of the

#SDI09 archive tweets (n=718) and in 49.83 percent of the #ODUSDI archive tweets (n=753).

Table 11: Sample Tweets Including the Affective Self-Disclosure Indicator

Self-Disclosure (SD) Affective Indicator	
Definition: Sharing personal information, expressing vulnerability References: Swann (2002), Akayoglu, Altun, & Stevens (2009)	
Examples	Explanation
Confession - I have never seen any films in The Matrix trilogy. #sdi09	Word "confession" signals a personal disclosure
I don't think I made any sense. I struggle to think in tweets. Bear with me while I get the hang of it. #SDI09	The tweet expresses a lack of experience using and composing within Twitter. As a result, the tweet expresses vulnerability.
I will be traveling for part of the day, but if I can get my iPhone to cooperate I will be tweeting from the road to our #sdi09.	Reveals personal information (although not of a deep, emotional nature)
Shirky had a lot to say, makes me want to read the whole book . He shows how social networking sites can make us be more proactive. #SDI09	"makes me want to read the whole book" discloses a desire, plan or intention
@mimiodu Yes. overload/stimulation can be paralyzing. Like learning to tweet; not sure where to go next. Must turn off TweetDeck . #sdi09	"...not sure where to go next. Must turn of TweetDeck." shares lack of certainty and a personal need
@varhodes @zpalm001 #sdi09 Literacy ? is critical. Who's literate? Me, degree-d & digitally divided immigrant , or self-taught web 2 na	Reveals personal information (degree status, self conception as less computer savvy) <i>Note: Incomplete tweet</i>
@zpalm001 #sdi09 ARGH! Not Borges, Shirky! Mea culpa .	"Mea culpa" is admitting a mistake

Affective indicator coding results.

The numbers and percentages of tweets exhibiting a particular affective code are provided in Table 12. Out of a total of 8,221 total codes assigned in the #SDI09 archive, 27.00 percent (n=2,220) were affective indicators. Out of a total 5,873 total codes assigned in the #ODUSDI archive, 30.51 percent (n=1,792) were affective indicators.

Table 12: Number and Percentage of Tweets Exhibiting Affective Indicators

		#SDI09		#ODUSDI	
		Number of Codes	Percentage of Total Tweets (2,311)	Number of Codes	Percentage of Total Tweets (1,511)
Affective Indicators	Paralanguage	213	9.22%	129	8.54%
	Emotion	132	5.76%	107	7.08%
	Value	858	37.13%	645	42.69%
	Humor	299	12.94%	158	10.46%
	Self-Disclosure	718	31.07	753	49.83%
	Subtotal:	2,220	--	1,792	--
	% of Total Codes (below):	--	27.00	--	30.51

**Emergent codes in Rhodes 2014 dissertation study noted with asterisk*

Cohesive Indicators

The seven cohesive indicators include greetings and salutations, vocatives, group references, hashtag (an emergent code), social sharing, course reflection, and off-topic (an emergent code). Each of these indicators signals that some group cohesion exists or that participants belong to or feel safe within the community.

Greetings & Salutations.

The greetings & salutations code is applied when the tweet evidences some form of greeting or conversational closure. Example tweets meeting these criteria are provided in Table 13. The greetings & salutations indicator appeared in 1.21 percent of the #SDI09 archive tweets (n=28) and in 0.79 percent of the #ODUSDI archive tweets (n=12). These low percentages are not surprising given the nature of Twitter. The short format of a tweet (140 characters) means that greetings, salutations or conversational closures are highly unlikely to be included due to a lack of space.

Table 13: Sample Tweets Including the Cohesive Greetings & Salutations Indicator

Greetings & Salutations (G&S) Cohesive Indicator	
Definition: Greetings, closures References: Swann (2002), Akayoglu, Altun, & Stevens (2009)	
Examples	Explanation
Just made it home. Good night , #SDI09	"Good night" serves as closure
Funny moment today: I was flipping through one of my new books for #ODUSDI & noticed that I follow the author on twitter. Hi, @nancybaym!	"Hi" functions as a greeting
Hey #odusdi , if any of you become interested in actor network theory or activity theory, I will happily share my bibliography #oduphde	"Hey, #odusdi" functions as salutation
welcome to norfolk , distance peeps! can't wait to see you all tonight! #odusdi	"Welcome to Norfolk" conveys a greeting
#sdi09 i'm here	"i'm here" announces writer's virtual arrival in the tweetstream
Good night, sweet #SDI09 **closes hashtag column in tweetdeck**	"Good night, sweet #SDI09" serves as closure or a farewell

Vocative.

The vocative code indicates that a tweet references another participant in the conversation by name (either his or her actual name or the Twitter username he or she uses). Twitter allows for sending an @reply — a message directed to a particular user noted by placing his or her username at the start of the tweet. While this is, indeed, an address by name (albeit username), the function is less cohesive in nature (establishing familiarity within the group by using a given name) and more a function of interactivity (responding to or interacting directly with a particular person). For that reason, an emergent code was needed and will be discussed in the interactive indicators section. Example tweets meeting the vocative criteria are provided in Table 14. The vocative indicator appeared in 14.15 percent of the #SDI09 archive tweets (n=327) and in 30.18 percent of the #ODUSDI archive tweets (n=456).

Table 14: Sample Tweets Including the Cohesive Vocative Indicator

Vocative (Voc) Cohesive Indicator	
Definition: Addressing others by name References: Swann (2002). Akayoglu, Altun, & Stevens (2009)	
Examples	Explanation
hears crickets Vincent? You still up? #sdi09	Use of classmate's name: Vincent
@writersbloc @rhetorjib @snobles We can stick with Wednesday - I just might have to monkey a bit with the times....standby.... #odusdi	Multiple users addressed therefore coded both @reply (for first username in list) and vocative for following names
Absolutely true :) RT @snobles: @VelociMat Creepy (until we are all doing it in 5 years & wonder why we were ever creeped out) #ODUSDI	Coded vocative because retweeting supersedes @reply (changes focus/intent of message); also tweet includes more than one username so it qualifies as vocative

Examples	Explanation
.@snobles Authorial voice = so useful. Taught Thank U 4 Arguing rather than a Textbook last term; my students <3 it & learned tons #odusdi	Coded as vocative rather than @reply because the use of a period used before username breaks @reply format
@LizaPotts's Overview of ANT in today's article helped me make sure I had digested this week's reading! I know more than I thought! #odusdi	@LizaPotts's Overview: Although formatted like an @reply (because username comes first), intent is vocative (to identify work as hers) and name just happens to be at beginning of tweet
@amdadak does a nice job bringing multiple conversational threads together to talk to one another #odusdi #oduphde	Although formatted as an @reply, this tweet is <u>about</u> @amdadak, not addressed <u>to</u> @amdadak

Group Reference.

The group reference code was used when the tweet used the words such as “we,” “us,” or “our” to refer to the group or when the participant aligned with an established group (such as English Studies scholars or graduate students as a whole). Example tweets meeting these criteria are provided in Table 15. The group reference indicator appeared in 13.20 percent of the #SDI09 archive tweets (n=305) and in 22.70 percent of the #ODUSDI archive tweets (n=343).

Table 15: Sample Tweets Including the Cohesive Group Reference Indicator

Group Reference (GR) Cohesive Indicator	
Definition: Referring to the group as "we," "us," and/or "our" or aligning with another group (i.e. English Studies scholars) References: Swann (2002), Akayoglu, Altun, & Stevens (2009)	
Examples	Explanation
We're supposed to revise? RT @slday29: @varhodes 2500 to 3500 word range is good. but the revising? it never ends. #sdi09	Use of the word "we" implies group membership
#ODUSDI tonight is 8:00.	Hashtag #ODUSDI used as reference to group explicitly
"let's just pause for a minute..." Totally stealing that! #odusdi	"let's" is contraction for let <u>us</u> and therefore serves as a group reference
wht a guy! MT @Dave_L_Jones: if any of U become interested in ANT or activity theory, i'll happily share my bibliography #oduphde #odusdi	Multiple hashtags (#ODUSDI & #ODUPhDE) used to reference multiple groups <i>Note: MT = modified tweet. Similar to RT but with revision.</i>
Psssst #odusdi you should be following @buridan and @Dave_L_Jones for an interesting discussion on #ANT this morning. You, too, interwebs!	"interwebs" used as a group reference
Thanks for the observations, guys! #odusdi	Use of the word "guys" is a group reference

Hashtag.

An emergent code in this study, the hashtag code is closely related to the group reference designation. The hashtag code was created because it was used in 100 percent of the tweets collected (the course hashtags (#SDI09 and #ODUSDI) were the search criteria used to collect the tweets studied). This information could have been collected under the GR designation, but in light of this unique feature of Twitter (and, now, other social media software) it was important to separate this under its own code. Hashtags can serve a variety of purposes — such as humor or sarcasm (*see Table 10*) as well as

identifying a particular topic to which the tweet refers. For instance, hashtags come into use around celebrities, popular culture events (like awards shows and TV programs), and news happenings (such as natural disasters, crimes or elections). When used as a reference marker in this way, the hashtag clearly serves a cohesive function. It groups the tweet (and the people writing them) with other messages (and writers) on the same subject.

Social Sharing.

The social sharing code is utilized when the participant shares information of a social nature completely unrelated to the course. Example tweets meeting these criteria are provided in Table 16. The social sharing indicator appeared in 3.68 percent of the #SDI09 archive tweets (n=85) and in 1.79 percent of the #ODUSDI archive tweets (n=27). The fact that the #ODUSDI percentage is only about a third of the #SDI09 percentage for this code may be explained by the existence of a secondary backchannel for the 2011 participants. Their social utterances may have been communicated in the private Skype chat rather than the course tweet stream.

Table 16: Sample Tweets Including the Cohesive Social Sharing Indicator

Social Sharing (SS) Definition: Sharing information unrelated to the course Cohesive Indicator References: Swann (2002)	
Examples	Explanation
#sdi09 The drum line is practicing outside my dorm room. Thoughts of remediation are pounding my brain.	An observation about the participant's physical environment unrelated to the course
I will be traveling for part of the day , but if I can get my iPhone to cooperate I will be tweeting from the road to our #sdi09.	"I will be traveling for part of the day" is an example of sharing social activity
Waiting for people to appear in Gornto. If you want to join tonight's reading group, ping me on Skype (McLuhan + Barthes) #SDI09	The reading group was a graduate program activity open to all graduate students (but not course-related); "Waiting for people to appear in Gornto." Is an example of sharing social activity unrelated to course.
#sdi09 Off to out-pt procedure. Forgive delays, loopy posts, pls.	Indicating that writer is having an outpatient procedure is an example of reporting personal details
@LizaPotts Do you have any preferences for W or R attendance next week? Trying to decide. I'm in Boston on W, flying back R am #odusdi	Sharing physical location and travel plans — in Boston on Wednesday and returning on Thursday morning
I experienced the value of findability tonight: was able to find a vegan Thai place in Boston in a matter of seconds. Thx, Yelp. #odusdi	Sharing dining activity (ability to find a vegan restaurant) is a an example of social sharing
Harry Potter w some #odusdi peeps. Hopefully both movie & food will be good! #idiographic @CineBistro http://gowal.la/c/4BAo4	Discussing an activity (see a movie with classmates) and reporting location are not course-related and are examples of social sharing

Course Reflection.

The course reflection code was used when a tweet reflected on the nature, efficacy, or enjoyment of the course itself. Example tweets meeting these criteria are provided in Table 17.

Table 17: Sample Tweets Including the Cohesive Course Reflection Indicator

Course Reflection (CR) Cohesive Indicator	
Definition: Reflection on the course itself References: Swann (2002)	
Examples	Explanation
@LizaPotts think Twitter built stronger sense of community 4 #SDI09. Cnvsation rather than swapping acad BlkBd posts made it more personal.	These comments represent direct reflection on the use of Twitter for the course
Flipping weeks 3 and 4 of #odusdi to accommodate our special tech instructor	"Flipping weeks 3 and 4" announces a course schedule change
#sdi09 I enjoyed Latour (never laughed and cried so hard at a text before). Enjoyed tweeting more than I thought I would. Great commentary.	"I enjoyed Latour" and "Enjoyed tweeting more than I thought I would" are examples of commenting on course readings and requirements
Have some new ideas for incorporating twitter in my own teaching. #SDI09	Reflecting on how course use of Twitter might change participants teaching practices
Which article from Hines was most useful to you? why? I'm looking at three that seem best and would love your perspectives. #SDI09	Professor reflecting on useful of readings and inviting response
@LizaPotts Re Hines: Ch's 6, 8, 1 & 14 were most helpful 4 me (in that order).I've slated Ch. 11 4 future reading --after my proj's. #S	Answering professors inquiry and reflecting on usefulness of specific chapter readings <i>Note: Incomplete tweet</i>

The course reflection indicator appeared in 3.50 percent of the #SDI09 archive tweets (n=81) and in 0.40 percent of the #ODUSDI archive tweets (n=6). This variance may be best explained by two factors. First, the 2009 courses mark the inaugural use of Twitter as a course component by the professors. Second, one of the 2009 instructors asked specifically for participants in the #SDI09 tweet stream to comment on their experiences. Two years later, the professor teaching the course that utilized the

#ODUSDI tweet stream had used Twitter in several courses thus she did not specifically prompt this sort of reflection. Additionally, Twitter had become a more familiar tool for the graduate student participants in the program and thus elicited fewer reflective comments as a course component.

Off-Topic.

In reviewing the data sets it became apparent that another code was emerging — the off-topic indicator. This code was utilized if the tweet did not pertain directly to a course reading or an on-topic comment from a peer. It might be about the general topic being studied or some other aspect of the graduate program. It was not, however, strictly a social sharing of information that would have qualified it for the SS code. This type of comment may have been about the course but was not course reflection and thus did not qualify for the CR code. Example tweets meeting these criteria are provided in Table 18. The off-topic indicator appeared in 20.55 percent of the #SDI09 archive tweets (n=475) and in 12.84 percent of the #ODUSDI archive tweets (n=194).

Table 18: Sample Tweets Including the Cohesive Off-Topic Indicator

Off-Topic (OT) Cohesive Indicator	
Definition: Does not pertain directly to a reading or an on-topic comment from a peer (Unlike Social Sharing, the comment may be about the course but is not a Course Reflection)	
Emergent code (Rhodes)	
Examples	Explanation
Huzzah! Katie's work was also accepted to #SIGDOC. Three #ODU PhD students are on their way to Indianapolis! #SDI09	Observations on accomplishments of PhD students, but not personal/social (therefore not coded as SS)
I will be traveling for part of the day, but if I can get my iPhone to cooperate I will be tweeting from the road to our #sdi09.	"if I can get my iPhone to cooperate I will be tweeting from the road to our #sdi09" represents a comment not directly related to a specific reading/assignment, but still course-related
@varhodes #sdi09 Vince, my last 2 posts didn't go straight to you because of that danged space inbetween your name and @. Whoops.	Comment not directly related to a specific reading/assignment, but course-related because it refers to an attempt to communicate with a classmate
Catching up with #SDI09. It was interesting reading everyone's tweets on the iPhone, but no where's near as easy as on a laptop.	Neither sentences is not directly related to a specific reading or assignment, but the comments are both course-related
@Lizapotts W/posting about RtS, I'm struggling w/quoting conventions of Kindle. Suggestions? last post I used %; others nothing #odusdi	Tweet is not about reading per se, rather how to cite e-book version without specific page numbers
packing for two weeks of scholarly immersion and dorm-room life #odusdi #oduphde	Comment related to on-campus portion of SDI (therefore not social sharing), but not about course readings or assignments

Cohesive indicator coding results.

The numbers and percentages of tweets exhibiting a particular cohesive code are provided in Table 19. Out of a total of 8,221 total codes assigned in the #SDI09 archive, 43.93 percent (n=3,612) were cohesive indicators. Out of a total 5,873 total codes assigned in the #ODUSDI archive, 43.40 percent (n=2,549) were cohesive indicators.

Table 19: Number and Percentage of Tweets Exhibiting Cohesive Indicators

		#SDI09		#ODUSDI	
		Number of Codes	Percentage of Total Tweets (2,311)	Number of Codes	Percentage of Total Tweets (1,511)
Cohesive Indicators	Greetings & Salutations	28	1.21%	12	0.79%
	Vocatives	327	14.15%	456	30.18%
	Group Reference	305	13.20%	343	22.70%
	*Hashtag	2,311	100.00%	1,511	100.00%
	Social Sharing	85	3.68%	27	1.79%
	Course Reflection	81	3.50%	6	0.40%
	*Off-Topic	475	20.55%	194	12.84%
	Subtotal:	3,612	--	2,549	--
	% of Total Codes (below):	--	43.93	--	43.40

**Emergent codes in Rhodes 2014 dissertation study noted with asterisk*

Interactive Indicators

The seven interactive indicators include acknowledgement, agreement/disagreement, approval, invitation, personal advice, @reply (an emergent code) and retweet (an emergent code). Each of these codes demonstrates some level of interaction between participants.

Acknowledgment.

The acknowledgement code is applied when a tweet refers directly to the contents of another participant's message. This may include quoting directly from that message. In the case of Twitter, it is possible to retweet (or rebroadcast another person's tweet). This may be done with or without editing. This led to the creation of an emergent retweet code within my study.

It is important to note that while all retweets are, by definition, acknowledgment the reverse is not true. Because this study examines whether a social media tool such as Twitter can help foster community, I felt it important to create the new emergent indicator and code any retweets under the new designation to surface the impact of the social media software. Example tweets meeting the acknowledgement code criteria are provided in Table 20.

Table 20: Sample Tweets Including the Interactive Acknowledgment Indicator

Acknowledgement (Ack) Interactive Indicator	
Definition: Referring directly to the contents of others' messages: quoting from others' messages (While all RT's are acknowledgement, not all Ack are RT)	
References: Swann (2002). Akayoglu, Altun, & Stevens (2009)	
Examples	Explanation
@snobles I like Twitter's app for iPad, works like tiered drawers, you can keep dragging to the rt to trace more. #odusdi	Answers a question about an iPad application mentioned in a previous post by another participant
"How to be normal" HAHAA RT @rhetorjib: elevator pitch practice on Friday to learn how to be normal when we're ready #odusdi	"How to be normal" quoted from another tweet <i>Note: Also coded RT because a portion of the message is a retweet</i>
@LizaPotts 6 or 7 will work for me for tomorrow. #odusdi	"6 or 7 will work for me tomorrow" answers question from a previous tweet
@snobles in light of the Phelps discussions, did you find the definitions in AF at the start refreshing? #odusdi	"in light of the Phelps discussions" acknowledges comment in another tweet about conversation from another course
@rhetorjib Interested in ur idea of ur "inner-compositionist" -what do u consider ur outer self now? Thinking my self is dividing 2 #odusdi	Question based on comment from another participant as evidenced by introductory text, "Interested in ur idea of ur 'inner-compositionist'"

The acknowledgement indicator appeared in 17.91 percent of the #SDI09 archive tweets (n=414) and in 13.04 percent of the #ODUSDI archive tweets (n=197). The existence of these interactive communications strategies are important because they help clarify asynchronous dialogue by connecting messages issued separately and dispersed in time. Tweets are not threaded as is often the case in an online discussion board environment. Thus, this acknowledgement connects thoughts and communicators.

Agreement/Disagreement.

The agreement/disagreement code was applied when a tweet expressed agreement or disagreement with another participant's comments. Example tweets meeting these criteria are provided in Table 21. The agreement/disagreement indicator appeared in 5.88 percent of the #SDI09 archive tweets (n=136) and in 11.05 percent of the #ODUSDI archive tweets (n=167).

Table 21: Sample Tweets Including the Interactive Agreement/Disagreement Indicator

Agreement/ Disagreement (A/D) Interactive Indicator	
Definition: Expressing agreement or disagreement with others' messages References: Swann (2002), Akayoglu, Altun, & Stevens (2009)	
Examples	Explanation
@dcook020 Yes. I agree. #sdi09	"yes" indicates agreement; "I agree" explicitly states concurrence
@rachelb213 I know! I can't decide if I find the examples impressive or creepy. There was a time that we called this stalking! #odusdi	"I know" signals agreement
@VelociMat I too finished that part wanting to know more about how power created. Just action? #ODUSDI	"I too" indicates participant had similar reaction (and agreed)
@GeorgeShamshayo RtS 127 liked this comparison too. emphasizes importance of what rschr describes & effectiveness of event trace #odusdi	"liked this comparison too" indicates agreement with another participant's comment
Me too! RT @snobles: After all of the reading and particularly Liza's article for today, I am ready and excited to learn how to map. #ODUSDI	"Me too!" serves as agreement
#sdi09 @zpaln001- I don't see the need for another language, let alone a universal one-- Look what happened to Esperanto.	"I don't see the need" signals disagreement
@cristinanoh I'm inclined to think that it may a little of both. #sdi09	"I'm inclined to think that it may [be] a little of both" signals agreement

Approval.

The approval code was utilized when a tweet expresses approval of another person or offers praise or encouragement. Example tweets meeting these criteria are provided in Table 22. The approval indicator appeared in 6.90 percent of the #SDI09 archive tweets (n=161) and in 6.22 percent of the #ODUSDI archive tweets (n=94).

Table 22: Sample Tweets Including the Interactive Approval Indicator

Approval (App) Interactive Indicator	
Definition: Expressing approval, offering praise, providing encouragement References: Swann (2002), Akayoglu, Altun, & Stevens (2009)	
Examples	Explanation
@ebensen65 cool video. Thanks for passing it along. #sdi09	Using the descriptor "cool" serves as praise for the selection; thanking her encourages additional sharing in the future
Excellent book reviews from @varhodes (Neuromancer) & @avoidingwork (Digital McLuhan) on the course website! http://tiny.cc/E5byy #sdi09	"Excellent book reviews" is an example of offering praise for work
@cristinano Whoa, what an amazing artifact! #sdi09	Purpose of the entire tweet is to offer praise
Thanks #SDI09 for tweeting during my presentation. Was hard to keep up, but cool...	Thanking colleagues for live tweeting during class presentation
@ebensen65 I liked it. Your maps were straightforward and I didn't know organic food still had vague regulations #sdi09	"I liked it" is an example of expressing approval; "Your maps were straightforward" offers praise about a part of the project
appropriate metaphor RT @writersbloc: more #odusdi tweeting! (Autocorrect wants to swap that to teething. Hmm)	"appropriate metaphor" expresses approval
@GeorgeShamshayo great point about absence pointing to something that should be there. #ODUSDI	"great point" expresses approval

Invitation.

The invitation code was applied when the tweet asked a question or invited some form of response from other participants in the tweet stream. Example tweets meeting these criteria are provided in Table 23. The invitation indicator appeared in 17.78 percent

of the #SDI09 archive tweets (n=411) and in 14.49 percent of the #ODUSDI archive tweets (n=219).

Table 23: Sample Tweets Including the Interactive Invitation Indicator

Invitation (I) Interactive Indicator	
Definition: Asking questions or otherwise inviting response References: Swann (2002), Akayoglu, Altun, & Stevens (2009)	
Examples	Explanation
@LizaPotts #sdi09 Do actor networks relate to affinity spaces in any way? Or r they two completely different entities?	Asking two questions of the professor: "Do actor networks relate to affinity spaces in any way" and "Or r they two completely different entities?"
Share the link! I need examples! :)RT @angela757:Asymmetry in networks: reminds me of article I read abt Youtube and ratings #odusdi	"Share the link!" is an explicit request inviting response
VM p. 4 f2f is gold standard against which cmi is judged: i think this has shifted some. thoughts? #odusdi	"thoughts?" invites classmates to respond to the position espoused in the tweet
Which article from Hines was most useful to you? why? I'm looking at three that seem best and would love your perspectives. #SDI09	"Which article from Hines was most useful to you?" is an example of the professor asking for input on the usefulness of readings

Personal Advice.

The personal advice code was used when a participant used his or her tweet to offer specific advice to a classmate. Example tweets meeting these criteria are provided in Table 24. The personal advice indicator appeared in 7.05 percent of the #SDI09 archive tweets (n=163) and in 11.25 percent of the #ODUSDI archive tweets (n=170).

Table 24: Sample Tweets Including the Interactive Personal Advice Indicator

Personal Advice (PA) Interactive Indicator	
Definition: Offering specific advice to classmates participants References: Swann (2002)	
Examples	Explanation
@ebensen65 Yousendit.com will take files up to 100meg without an account. Go to the page & enter everything in "try sending now"	Offering advice to a peer on how to use an online service
AF p. 1 my, smartphones have changed! here's the treo 600: http://bit.ly/dNBMuK #odusdi	"here's the treo600: http://bit.ly/dNBMuK " text serves as advice — a directive to click the link and review the material
#ODUSDI tonight is 8:00.	Advice from professor as to when Skype discussion session begins
Liza just clarified: pick an event (in last 6 mo) & you will choose a few artifacts w/in that event #ODUSDI	Offering advice/clarification to classmate regarding an assignment
Adjusting schedule so that you give your project presentation on the FINAL #odusdi on-campus day. Check schedule in 15 mins for update.	Offering advice: "Check schedule in 15 mins for update."
I think Omnigraffe might be a useful tool for starting to map network: http://bit.ly/dwrAp0 #odusdi	Recommending a specific software tool
@varhodes Look to see if you can find a moderator (< disasters typically have < activity, but you might find something) #SD109	Professors providing advice on how to analyze twitter data

@reply.

Twitter uses a type of tweet that indicates a message is intended for a specific user and not addressed to all those reading the tweet stream. This functionality necessitated an emergent code when analyzing the data. The @reply code was applied when the tweet fit the standard format for a Twitter @reply (meaning the message began with @username).

The reasoning for coding a tweet with a vocative code instead of an @reply code was discussed earlier in this chapter. The difference lies mainly in whether the usage was intended to fulfill a cohesive function (demonstrating the familiarity that comes when one is a member of a community) versus an interactive function (directing a message to a specific person). I elected to categorize this emergent code as an interactive indicator (rather than a cohesive one) because direct interaction is generally the function of the @reply.

When a participant wants to begin a tweet with the username in a vocative fashion rather than have the message be an actual @reply, he or she will generally include a period before the name (*see Table 14 for an example of this construction*). A direct message appears only for the person to whom it is sent. If you are a follower of the person sending the @reply, that particular tweet will show up in your main Twitter feed. An @reply shows up in the @reply stream regardless of whether you are following the sender or not. Inclusion of a period before the username was a tactic sometimes employed to circumvent Twitter's display algorithm. Example tweets meeting the @reply criteria are provided in Table 25. The @reply indicator appeared in 40.42 percent of the #SDI09 archive tweets (n=934) and in 25.88 percent of the #ODUSDI archive tweets (n=391).

Table 25: Sample Tweets Including the Interactive @reply Indicator

@reply (@) Interactive Indicator Definition: Contains an @reply Emergent code (Rhodes)	
Examples	Explanation
@mimiodu Feel free to create a more anonymous account that's just for this class - made up name, etc #SDI09	Reply directly to specific participant using appropriate Twitter format
@varhodes Was she able to see the tweets during the talk? What a nightmare! #SDI09	Using @reply format to ask a question of a classmate
@rachelb213 I found that helpful too. I think I'm going to start mapping some today, feeling a need to get those connections down. #odusdi	Using @reply for one-on-one discussion in tweetstream

Retweet.

Twitter allows a message to be rebroadcast (with or without editing by the new sender) in a message format called a retweet. Again, this functionality required a final emergent code be added. The retweet code was utilized when the tweet appeared with the RT (retweet) designator. As discussed earlier, all retweets are acknowledgements. But given one of my research questions is whether Twitter helped or hindered community formation I deemed it important to separate this type of action from the acknowledgement code. To ensure percentages were not inflated, any tweet coded as RT was excluded from the Ack code since they are both interactive indicators. Example tweets meeting these criteria are provided in Table 26. The retweet indicator appeared in 7.36 percent of the #SDI09 archive tweets (n=170) and in 19.46 percent of the #ODUSDI archive tweets (n=294).

Table 26: Sample Tweets Including the Interactive Retweet Indicator

Retweet (RT) Interactive Indicator	
Definition: Retweeting another message References: Swann (2002) Akayoglu, Altun, & Stevens (2009)	
Examples	Explanation
RT @ebensen65: Awesome talk by @afwyssocki at ODU RSA Symposium ; so glad I was able to attend #oduphde #odusdi	Retweet without modification or additional comment
Works for me. RT @LizaPotts: I think we can run #odusdi at 8pm if we run the #oduphde meeting at 6 on Wednesday. Does that work?	Retweet with comment added by participant retweeting
MT @danielleroach: ODU Rhetoric Symposium 7/12-13, keynote Anne Wysocki; schedule & (free) reg http://bit.ly/jAO5x6 #oduphde #odusdi #rsodu	MT = Modified retweet (notes some aspect of the original was changed in when retweeted); all MT were coded as RT

Interactive indicator coding results.

The numbers and percentages of tweets exhibiting a particular interactive code are provided in Table 27. Out of a total of 8,221 total codes assigned in the #SDI09 archive, 29.06 percent (n=2,389) were interactive indicators. Out of a total 5,873 total codes assigned in the #ODUSDI archive, 26.09 percent (n=1,532) were interactive indicators.

Table 27: Number and Percentage of Tweets Exhibiting Interactive Indicators

		#SDI09		#ODUSDI	
		Number of Codes	Percentage of Total Tweets (2,311)	Number of Codes	Percentage of Total Tweets (1,511)
Interactive Indicators	Acknowledgment	414	17.91%	197	13.04%
	Agree/Disagree	136	5.88%	167	11.05%
	Approval	161	6.90%	94	6.22%
	Invitation	411	17.78%	219	14.49%
	Personal Advice	163	7.05%	170	11.25%
	*@reply	934	40.42%	391	25.88%
	*Retweet	170	7.36%	294	19.46%
	Subtotal:	2,389	–	1,532	–
	% of Total Codes (below):	–	29.06	–	26.09

**Emergent codes in Rhodes 2014 dissertation study noted with asterisk*

Reporting the Findings

A full table reporting coding data for all 19 indicators is presented in Appendix B. The Community of Inquiry framework provided a starting point for analyzing the twitter data collected in the #SDI09 and #ODUSDI tweet archives. I coded for all 19 indicators rather than selecting just a few because I was unsure what each indicator might reveal about the nature of community formation. Not all of the data points collected and presented in this chapter are significant in terms of online community formation. However, no one has yet applied this framework to a social media archive in general or a microblogging format such as Twitter specifically. Considering that gap, I believed it important to both code for and report the results for all 19 indicators of social presence. In the following chapter, I will discuss the impact of the indicators most relevant to

online classroom community formation through the lens of two established frameworks and use the findings to support my own observations.

CHAPTER 5

DISCOVERING AND DEFINING COMMUNITY IN TWO SUMMER DOCTORAL INSTITUTES

In the previous chapter I presented the findings of my efforts to code the tweets collected in two case studies for 19 indicators of social presence. The 3,822 total tweets were generated as part of course requirements during two Summer Doctoral Institutes (SDI). Although the social presence framework is specifically part of the Community Inquiry (CoI) framework, my findings (derived from applying the CoI lens) will help me in answering three key research questions to be addressed in this chapter:

- **Question 1:** Do the evaluative frameworks (Community of Inquiry and Rovai's classroom community) confirm an online community exists in the three courses examined?
- **Question 2:** In what ways did microblogging facilitate or hinder community formation in this context?
- **Question 3:** What revisions to our definitions of online classroom community does my research suggest?

I will begin my analysis by comparing the results from my two case studies to each other as well as to two similar studies conducted by other scholars. I will then apply the two evaluative frameworks referenced in my first research question in an effort to empirically demonstrate the existence of online community in the case studies (Research Question 1). From there, I will discuss the ways Twitter helped or retarded efforts to develop a sense of online community in these courses (Research Question 2). I will conclude the chapter by proposing my own definition of online community (Research Question 3).

Comparison of #SDI09 to #ODUSDI

I coded for all 19 indicators of social presence and reported those results in Chapter 4 because I was unsure what I would find and what indicators might prove most illuminating. I will not discuss every indicator in detail in this dissertation as some factors revealed little difference from case study to case study and others demonstrated little impact with regards to my research questions. To that end, I will be highlighting some key differences in this chapter and featuring specific indicators relevant to my specific line of inquiry. As I discussed in previous chapters, the social presence indicators fall into three categories: affective, cohesive, and interactive.

Findings: Cohesive indicator differences.

I find it revealing that the most common indicator type in each case study was the cohesive category — the indicator type that most directly demonstrates connectedness or community. This is the first important finding of my study. In the 2009 SDI archive (marked with hashtag #SDI09) 43.93 percent (n=3,612) of the total tweets were cohesive in nature. Similarly, cohesive indicators accounted for 43.40 percent (n=2,549) of the total codes within the 2011 SDI archive (marked with the #ODUSDI hashtag). Within the cohesive set of indicators, I will discuss one factor I deem critical to my research (hashtag) and three others where there appeared to be a large difference in percentages (vocatives, group reference, and off-topic).

The second finding of my study concerned the use of the course hashtags. Because Twitter can be used asynchronously (and, in the case of the off-campus portions of the course was most likely used asynchronously), we cannot assume those

participating in and viewing the tweet stream would have a shared context. The hashtags allowed a participant to filter out other non-relevant tweets in his or her Twitter client thus bringing order to the chaos and better ensuring that he or she could follow the course conversation. While this initially might seem more of a methodological concern (i.e. How were tweets selected for inclusion within each case study archive?), I concluded there was a compelling reason to consider the use of the #SDI09 and #ODUSDI hashtags as more than a filtering criteria. The hashtags also fulfilled a strong cohesive function. Because a participant must consciously label his or her tweet each time one is composed to ensure it appeared in the filtered stream, he or she labeled not just the text as relevant, but also labeled him- or herself as a member of that classroom community. This indicator reflects the strongly performative aspect of using the hashtag. In fact, participants occasionally retweeted their post or reposted a message because they forgot to include the course hashtag in the original (*see Table 28*). Even guests to the tweetstream (scholars whose work we were studying or fellow PhD students not enrolled in the course) had to use the appropriate hashtag to be socially present and engage the entire group. They, therefore, became — at least temporarily — part of the established community. The rhetorical significance of this textual inclusion cannot be overlooked. I will discuss it further in this chapter as I consider my second research question.

Table 28: Retweeting with Hashtag

Tweet ID	From Twitter User	Tweet Text
87253710014648300	rachelb213	oops, no hashtag! RT @rachelb213: RiS p. 147 "only bad descriptions need an explanation" #odusdi

My third finding concerns the use of vocatives within the tweetstream. While 14.15 percent (n=327) of the #SDI09 archive codes were vocatives, that percentage increased to 30.18 percent (n=456) in the #ODUSDI archive. This difference may be both technologically and rhetorically significant. By the time the second case study archive was collected, many of the student participants had much more extensive experience with Twitter and the microblogging format. As a result, more tweets in the #ODUSDI archive used multiple usernames in individual tweets than the previous archive. In other words, rather than omitting a username altogether (and addressing a comment to the class at large) these tweets specifically named multiple people (engaging specific, smaller subsets of the class). From a technological standpoint, the authors of these tweets tended to rely less on an @Reply (a message directed to one specific user) likely understanding that inclusion of multiple usernames ensured that the tweet would show in various feeds of the Twitter client used by the intended recipients. For example, a tweet with only the hashtag and no username would appear in the hashtag search feed in the application. One that includes usernames within the tweet would show in that column as well as the “mentions” column (the feed that shows any tweet specifically including your username). Using this strategy of including multiple usernames within a tweet not only shows a more sophisticated use of the tweet syntax and understanding of the twitter client user interface, it also serves a rhetorical function — engaging subsets of the community directly in continued conversation rather than addressing tweets to a nameless, faceless whole. In essence, this construction recognizes specific “neighbors” within the virtual community.

My fourth finding centers on the rhetorically significant use of the group reference indicator. This designation accounted for 13.20 percent (n=305) of the total #SDI09 archive codes and 22.70 percent (n=343) of the #ODUSDI codes. While I cannot provide specific causes for this difference with certainty (because I did not directly interview or survey participants), I can offer some potential reasons. By 2011, the number of PhD students enrolled in the doctoral program had increased and participants had greater opportunities to encounter and become more familiar with each other. As a result, the participants became likelier to use terms such as “we” or “us.” In short, the digital archives reflect a shared ethos. From a modern rhetorical standpoint, we might construe this textual move as evidence of Burke’s consubstantiation. In *A Rhetoric of Motives*, Burke (1969) explains,

A is not identical with his colleague, B. But insofar as their interests are joined, A is *identified* with B. Or he may *identify himself* with B even when their interests are not joined, if he assumes that they are, or is persuaded to believe so. Here are ambiguities of substance. In being identified with B, A is “substantially one” with a person other than himself. Yet at the same time he remains unique, an individual locus of motives. Thus he is both joined and separate, at once a distinct substance and consubstantial with another.... To identify A with B is to make A “consubstantial” with B (*emphasis in original*, pg. 20-21).

While I cannot claim this increased incidence of group reference as evidence that microblogging facilitated a feeling of online community (the line of inquiry examined by my second research question), it certainly documents strong cohesiveness among class participants and points us toward the conclusion that a sense of online community did indeed exist — a conclusion that will be further supported as I answer my first research question.

The final large difference within the cohesive indicators, and my fifth finding, occurred under the off-topic code. It represented 12.84 percent of the #ODUSDI archive codes but 20.55 percent (n=475) of the #SDI09 codes. I posit a technological reason for this difference. The first SDI used the #SDI09 hashtag and Twitter as both a front- and backchannel (I will further explain and define these terms within the context of my second research question). However, the second SDI studied used not only Twitter and the #ODUSDI hashtag, but also employed a Skype chat function as an additional backchannel. As a result, more of the 2011 class participants' off-topic comments may have found their way into the Skype backchannel. While I was able to collect the log of that backchannel (having been added by a member of the group using that social media outlet), I have neither reviewed nor analyzed that log as it lies beyond the scope of my IRB approval and my dissertation focus. Although the numbers of tweets coded with the social sharing indicator are fewer and the differential less, the existence of the Skype backchannel might also explain the differences between archives under this code as well (3.68 percent (n=85) for #SDI09 and 1.79 percent (n=27) for #ODUSDI).

Interactive indicator differences.

The interactive category of indicators was the second most prevalent after the cohesive category for #SDI09 representing 29.06 percent (n=2,389) of total codes and the third most prevalent for #ODUSDI representing 26.09 percent (n=1,532) of total codes. The large differentials across archives occurred in two of my emergent codes (@reply and retweet). My sixth finding concerns the use of the @reply. In the #SDI09 archive, 40.42 percent (n=934) of the total codes were @replies compared with 25.88 percent

(n=391) of the total codes in the #ODUSDI archive. Again, this difference may be a function of increased familiarity with the microblogging technology. Becoming proficient in conveying messages in 140 characters was initially a challenge for students as evidenced by their use of multipart tweets (for example, tweets labeled 1 of 3, 2 of 3, and 3 of 3). A byproduct of this might be a tendency to address comments to a single person rather than including additional users to preserve characters for the actual message. Two years later, greater familiarity with the microblogging format allowed for more concise messages and, therefore, the direction of a tweet to multiple users (causing the vocative code percentage to increase rather than the @reply code).

Additionally, a greater facility with tweet syntax allowed participants in the #ODUSDI tweetstream to structure a reply to a user in the form of a retweet — my seventh finding. This represented 7.36 percent (n=170) of the #SDI09 archive as opposed to 19.46 percent (n=294) of the #ODUSDI archive. In contrast to the 2011 students, 2009 participants had little experience in this particular digital space and were, therefore, less familiar with its conventions of communicating. In fact, on a few occasions within the #SDI09 archive there is evidence of one of the professors describing the appropriate construction of a retweet. By 2011, however, participants were more savvy, having extensive experience with Twitter through personal and other in-class use. As a result, the #ODUSDI participants used retweets more adeptly to agree with, expand upon and explain comments. They were able to direct a comment to a single classmate without invoking the @reply syntax.

Affective indicator differences.

The affective category of indicators was the second-most prevalent for the #ODUSDI archive representing 30.51 percent (n=1,792) of the total codes and the third-most prevalent for the #SDI09 archive representing 27 percent (n=2,220) of the total codes. The two largest differentials occurred in the value and self-disclosure codes.

Having compared the social presence coding results from my two case studies, I will compare my findings to those of other scholars using this approach to provide further context for my dissertation.

Comparison to Swan's 2002 Study Data

In 2002, Karen Swan reported on two studies examining course design and interactivity among students. The first study involved a survey of students participating in online courses regarding their satisfaction, perceived learning, and activity in the courses (p. 28). The second study reported in her article (and the one more relevant to my dissertation study) examined immediacy, social presence and interactivity in asynchronous online discussions (p. 35). For her second study:

Data were collected from the discussions that took place in a graduate-level course in educational computing given entirely online in the spring 2001 semester. The course consisted of four modules that ran sequentially across the semester. In each module, there were three large discussions initiated by instructor questions and roughly corresponding to the three weeks students were directed to spend working in each module. Students were required to submit one response to instructor prompts and two responses to their classmates in each discussion. They could, of course, submit as many responses as they liked, and many participated a good deal more than required (p. 36).

Data collected included discussion strands from the first discussion in each module posted within the first five days because these presented the longest timeframe for the “most evolved” discussions. This resulted in a total of 235 postings in 39 discussion threads or approximately 10 percent of all course postings (p. 36). These transcripts were then coded against her 15 indicators of social presence. I began my analysis with Swan’s 15 indicators and added 4 emergent codes of my own (*See a listing of Swan’s codes and my own in Chapter 4 in Table 6.*).

It is impossible to conduct a direct comparison between Swan’s data and my own for a variety of reasons. Chief of among them is that Swan and I utilized different coding strategies. As I outlined in Chapter 3, my analysis merely considered whether an indicator existed in a tweet or not thus examining a binary — presence or absence. Presence of an indicator (or multiple examples of it) within a tweet earned a code of 1 (it exists). Absence of an indicator earned a blank or 0. In contrast, Swan’s coding sought a magnitude value for each indicator. For example, if a discussion post had five examples of paralinguistic used, each was coded as an instance of that indicator’s use (a value of 5). Swan found a total of 1,366 verbal immediacy indicators in 235 postings; an average of about 6 indicators per post (p.39). This compares with 8,221 codes applied in the #SDI09 archive (2,311 tweets total) or an average of 3.56 indicator types per tweet and 5,873 codes in the #ODUSDI archive (1,511 tweets total) or an average of 3.89 indicator types per tweet. The greatest numbers of indicators in a single tweet in the #SDI09 archive was 9 (which occurred in three different tweets) as compared to 10 indicators in a single tweet in the #ODUSDI archive. The median, mode and standard deviation for my data sets are presented in Table 29. The differences in average number of indicators between my data

and Swan's likely lie in two factors. First is the binary counting of my study versus the magnitude counting of codes in Swan's study. Second, Swan studied discussion board postings with an average of 82.4 words per post. In contrast, I studied tweets that, by virtue of the social media platform used, could be no more than 140 characters per message.

Table 29: Average, Median, Mode and Standard Deviation for #SDI09 and #ODUSDI

	#SDI09	#ODUSDI
Total # Indicators	8 222	5 873
Average # Indicators/Tweet	3.56	3.89
Median	3.00	4.00
Mode	3.00	3.00
Standard Deviation	1.48	1.48

Directly comparing how the coding is similar or different at a granular level between Swan's 2002 data and my dissertation data would require that I have access to Swan's coded data set (which I do not). Despite these differences, I do believe it worthwhile to consider the data side-by-side for some gross comparison. For example, although Swan sought magnitude and I considered a binary presence or absence, we can still examine the percentage of each data set that included either an affective, cohesive or interactive indicator because we are examining the percentage of that total number of codes not comparing the number of codes themselves. In Swan's data set, 48.53 percent of the codes were affective indicators, 34.36 were interactive indicators, and 17.20 percent were cohesive indicators. In contrast, the most common category of indicators in

both my data sets was cohesive (43.93 percent in #SDI09 and 43.40 percent in #ODUSDI). The second most common category in #SDI09 was interactive (29.06 percent of codes) followed by affective (27.00 percent). In #ODUSDI, the second most common category was affective (30.51 percent) followed by interactive (26.09). Although the rank order is different between my two data sets, the total difference is small (about 3 percent). The primacy of different indicators types in each study is likely attributable to the online environment examined in each study. I will examine the differences between the discussion board format and the social-media-based microblogging format as I answer my second research question later in this chapter. However, it is not surprising that Swan's data point to cohesive indicators as the least common category. The discussion board format she studied generally places a focus on dyadic discourse with teacher. Communication tends to occur in an academic register and is only marginally aimed at a peer student audience. In contrast, Twitter tends to encourage a more informal register and targets peers for discussion.

Comparison to Akayoglu, Altun & Stevens' 2009 Study Data

In 2009, Akayoglu, Altun and Stevens published findings from a longitudinal, ethnographic study with computer-mediated discourse analysis. In their study, they analyzed the chat logs of an online community of practice (Webheads) to discern the "functions and frequencies of social presence categories in these chat logs" (p. 6). The members of the online community of practice had been interacting since 1998 and Akayoglu, Altun, and Stevens analyzed data included in the chat logs from August 2007 to August 2008. In all, 39 different participants joined in the chat sessions analyzed

although the number in any particular session ranged from 11 to 14 (p. 7). The researchers used pseudorandom number-generation software to select five of the 42 chat logs posted for analysis. These chat logs were then coded using the base codes established by Rourke et al (1999) and supplemented with additional codes by Akayoglu, Altun & Stevens based on the Model and Template for Assessment of Social Presence created by Rourke et al (2001) (p. 9; *also see Table 4 in Chapter 3*). The goal of their research study was to determine:

- the discourse patterns in text-based CMC environment in terms of social presence indicators (affective, cohesive and interactive); and
- the most frequently used functions of social presence in chat logs in an online community of practice (p.5)

In analyzing the five selected chat logs, Akayoglu, Altun & Stevens assigned 2,555 social presence indicator codes. According to their analysis, 22.35 percent (n=571) of the codes were affective indicators, 47.12 percent (n=1,204) were cohesive indicators, and 30.53 percent (n=780) were interactive indicators. It is impossible to make in-depth comparisons to their data given several critical differences in the community studied as well as a lack of several key pieces of information:

- They studied a community of practice rather than a classroom environment.
- At the time of their study, the community examined had been in existence for 10 years (as opposed to the relatively short duration of a summer course).
- No word count or post length information is included in their report.
- Their methodology does not explain whether they coded for magnitude or a simple binary (presence or absence).
- The researchers also did not provide a total number of conversational turns analyzed so it is impossible to provide an average number of codes per turn or other similar statistics for comparison to my dissertation data.

However, the primacy of cohesive indicators agrees with my findings from coding the #SDI09 and #ODUSDI archives for indicators of social presence. Having provided

context for my findings via studies performed by other scholars, I will now turn my attention to the three research questions proposed within my dissertation.

Confirming the Existence of Online Community

As I discussed in Chapter 1, it is often taken for granted that community exists in online classrooms. Kling and Courtright (2003) report an absence of empirical proof noting instead that community appears to be an aspirational concept. Other scholars echo this sentiment arguing we do not know how often community actually exists in distance learning (Cook D.L., 1995) and cautioning us not to take online classroom community for granted. These admonitions led to the formulation of my first research question — an attempt to empirically document the existence of online community:

- **Question 1:** Do the evaluative frameworks (Community of Inquiry and Rovai's classroom community) confirm an online community exists in the three courses examined?

My reasons for selecting these evaluative frameworks are explained in Chapters 2 and 3.

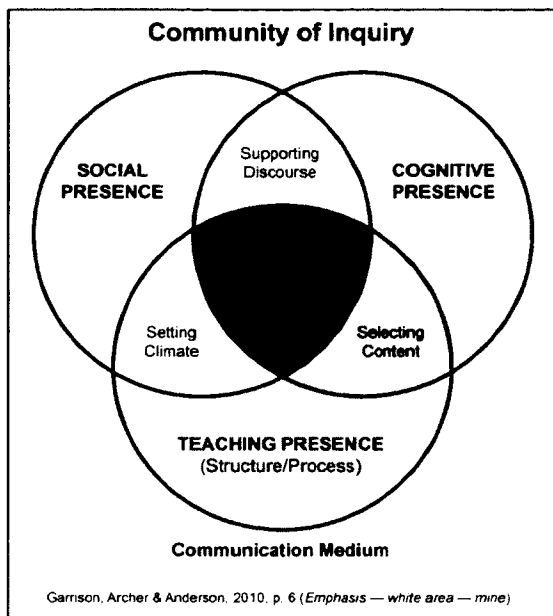
It is now time to apply them.

Community of Inquiry.

The Community of Inquiry framework is comprised of three core components that have remained relatively stable in the ten years since the model's creation (Garrison, Anderson & Archer, 2010). Cognitive presence reflects the learning and inquiry process (Garrison, Cleveland-Innes & Fung, 2010) and is defined as the degree to which participants within a CoI are able to construct meaning via sustained conversation (Rourke et al., 1999, p. 51). Teaching presence is comprised of the pedagogical design

concerns that facilitate and direct social and cognitive processes for the purpose of realizing beneficial learning outcomes (Garrison, Cleveland-Innes & Fung, 2010, p.32). Social presence, then, manifests itself when learners project themselves socially and emotionally in a CoI (Rourke et al., 1999). It is the extent to which participants in a computer-mediated environment feel affectively connected (Swan & Ice, 2010). These components overlap as noted in Figure 9 below.

Figure 9: Community of Inquiry Venn Diagram



Although all three are important, social presence is a mediating variable between the other core concepts (Garrison, Anderson & Archer, 2010; Garrison, Cleveland-Innes & Fung, 2010). A primary goal of teaching presence is setting the online classroom climate so that students' social presence can flourish. If students are projecting strong

presence into the digital environment, the resulting supportive discourse makes it possible for students to demonstrate cognitive presence (Garrison, Cleveland-Innes & Fung, 2010).

In terms of teaching presence, the minimum course requirements for microblogging were far exceeded. In fact, students continued to tweet during the course even after they were no longer required to do so. In addition, the instructors minimized their participation in the tweetstream generally confining their comments to explanations or clarifications requested by students, instruction on how to use Twitter, and occasional questions that probed for deeper explanation from students relative to assigned readings. Instructor tweets comprised 13.85 percent (n=320) of the total posts in the #SDI09 archive and 10.52 percent (n=159) of the total posts within the #ODUSDI archive.

As the findings reported in Chapter 4 demonstrate, extensive student social presence is clearly evident within the case study archives. The 2,311 tweets in the #SDI09 archive received 8,222 codes when reviewed for the 19 indicators of social presence and the 1,511 tweets in the #ODUSDI archive received 5,873 codes. A full table reporting coding data for all 19 indicators is presented in Appendix B. Cohesive indicators were the predominant type found within the archives as discussed earlier in this chapter. Both affective and interactive indicators also were well represented. Considering this high level of social presence, one would expect also to find supportive discourse — an indicator of cognitive presence. Several social presence indicators confirm this cognitive presence. High percentages for the affective value indicator (37.13 percent of the total tweets (n=858) for #SDI09 and 42.69 percent (n=645) of the total tweets for #ODUSDI) demonstrate that participants are making judgments and

evaluations about the course content and readings. Additionally, the interactive indicators (see Table 27 in Chapter 4) demonstrate robust acknowledgment of peer comments, agreement and disagreement with other posts, approval of comments made by others, invitations to join a conversation or expand upon posts, and considerable use of the @reply and retweet functions of Twitter. Consideration of the empirical evidence leads me to my eighth finding: my study would suggest that a Community of Inquiry did exist during the two Summer Doctoral Institutes.

Rovai's online classroom community.

Taking to heart the warnings that discussion of online community tends to be aspirational rather than empirically proven, I have opted to apply a second theoretical framework to my data to confirm the existence of community in these case studies. Alfred Rovai (2002) offers four dimensions as evidence of classroom community: spirit, trust, interaction, and learning. The first dimension, spirit, “denotes recognition of membership in a community and the feelings of friendship, cohesion, and bonding that develop among learners as they enjoy one another and look forward to time spent together. Community spirit allows learners to challenge and nurture each other” (2002, p. 4). One indicator of cohesion among SDI participants is the number of posts made beyond the course requirements. Students were obligated to post one tweet per assigned reading in each class. And in one of the 2009 courses as well as the 2011 course, the obligation extended further requiring that students also post at least 2 replies to tweets from their peers.

Although based on a different theory, results from my Community of Inquiry coding for social presence can be of assistance in searching for evidence of Rovai's criteria. In analyzing the data archives, a tweet was coded "off topic" (OT) if it did not pertain specifically to a reading or an on-topic comment from a peer. These messages were not mandatory responses. Instead, they demonstrated a bond or desire to communicate with peers beyond the scope of specific course requirements for posting. Out of 2,311 total tweets in the #SDI09 data set, 20.55 percent ($n=475$) were off-topic. Out of 1,511 tweets in the #ODUSDI data set, 12.84 percent ($n=194$) were off-topic.

One example of off-topic interaction comes occurs when Twitter was used in 2009 as a backchannel to on-campus classroom activities. Participants were not required to tweet, but they elected to do so as demonstrations of support for their peers who were delivering class presentations (*see Table 30*). This is particularly noteworthy given that classmates could easily have provided (and did provide) real-time, face-to-face feedback on presentations. However, this behavior demonstrates the existence of community through a commitment to sharing that praise with colleagues not present for the class meeting and in the desire to make the appreciation and support a public experience for the group rather than a dyadic interaction with the person being praised.

Table 30: Sample Tweets Exemplifying Group Support for Classroom Presentations During #SDI09

Tweet ID	From Twitter User	Tweet Text
2807426840	ebensen65	#sdi09 @slday29 Interesting take on cultural literacy and satire. Emphasizes the need to expand our definition of cultural literacy.
2807439562	ebensen65	#sdi09 @zpalm001 Wonderfully detailed presentation on Hungarian politics. Brings new meaning to email etiquette.
2807510608	slday29	@zpalm001 great maps/stencils on a really complex topic #sdi09
2807534596	LizaPotts	Good presentation on Cultural Literacy, the Daily Show, and Wandering Governors by @slday29 #SDI09
2807563392	LizaPotts	Fascinating tour of Hungarian politics, nationalism, and digital culture by @zpalm001 #SDI09

In 2011, participants also used Twitter to announce and organize a group outing to a movie (*see Table 31*).

Table 31: Sample Tweets Demonstrating Off-Topic Conversation and Activities During #ODUSDI

Tweet ID	From Twitter User	Tweet Text
86111219978747900	rhetorjib	@snobles Oh, yes! I squeezed in a third(?)fourth(?) re-read of HP7 just before SDI started up. We'll see movie while at #odusdi Join us?
86494268209893300	LizaPotts	#odusdi RT @THR: Excitement for Harry Potter and the Deathly Hallows #HP7 grows on Twitter http://t.co/A7SDBdC
91700877139783600	writersbloc	@rhetorjib Actually, @ECSpiegel helped me figure out--feel free to come by for help! We're just hanging out until Harry Potter. #odusdi
92367870650105800	gossettphd	Harry Potter w some #odusdi peeps. LHopefully both movie & food will be good! #idiographic @ CineBistro http://gowal.la/c/4BAo4

Another example of spirit is the use of humor. Humor facilitates the creation of common understanding and helps generate solidarity and group identity (Baym, 1995). In fact, humorous discourse has a determining influence on the community sharing the humor. Laughter and smiles confirm that a comment is humorous and that the audience relates to the values of a joke or appreciates the intellect required by the joke (Hubler &

Bell, 2003). Those physical and audible cues are missing in text-based digital exchanges like tweets. Instead, text-based CMC attempting to be humorous may rely on playing with the appearance of text or characters in addition to the typical word play (Hubler & Bell, 2003).

To that end, I coded tweets as humorous (H) if they included sarcasm, jokes, clichés, colloquialisms, textual laughter equivalents (LOL), emoticons and/or other humor-based examples of paralanguage. Within the #SDI09 tweet stream, 12.94 percent (n=299) utilized humorous elements while 10.46 percent (n=158) of the tweets on the #ODUSDI tweets did the same. Examples of the use of humor are included in Chapter 4 in Table 10.

Text-based humor in CMC allows for “constitutive laughter” — the collaborative process of perpetuating humor by extending it through a series of messages (Hubler & Bell, 2003) as demonstrated in Table 32. According to Hubler & Bell, text-based “laughter” that persists through discursive threads helps constitute an online community because it demonstrates that participants share the values and knowledge implicit in an ongoing joke (2003, p.280).

Table 32: Example of Constitutive Laughter from #SDI09

Tweet ID	From Twitter User	Tweet Text
2786920481	slday29	ecotone - sounds like enviro-friendly suntan lotion #sdi09
2786957676	cristinanoh	@slday29 Ha! #SDI09
2787113478	gossetphd	LOL! RT @slday29: ecotone - sounds like enviro-friendly suntan lotion #sdi09

In fact, humor cannot be separated from the group in which it is used. “It is embedded shared knowledge, shared codes, and shared emotional significances which provide its meaning and determine its appropriateness” (Baym, 1995). As Hubler & Bell explain, “Group formation, from a rhetorical perspective, is partly a process of situating individual ethos appeals in relation to each other so that a common group ethos emerges” (2003, p.287). That development of group ethos and bonding over humor, therefore, is a sure signal of classroom community. The fact that more than one in every 10 tweets utilized humor points to the existence of a group ethos and a sense of online classroom community in the 2009 and 2011 SDI courses examined in this study.

Rovai’s second dimension, trust, refers to the feeling that community members can be trusted and relied upon (2002). He contends trust is comprised of two components — credibility and benevolence (the extent to which learners are interested in the welfare of other community members and are motivated to assist others’ learning (p. 5). Working online complicates formation of sustainable trust between participants (Kling & Courtright, 2003), but there is evidence that participants exhibited credibility and benevolence as the sample tweets in Table 33 demonstrate.

Table 33: Sample Tweets Exemplifying Rovai's Concepts of Credibility and Benevolence in #SDI09

Tweet ID	From Twitter User	Tweet Text
2392150519	cristinano	@ebensen65 How would I even find the class? What do I search for? I am brand new to Skype. #SDI09
2392161473	dcook020	#sdi09 I never read anything about a Skype session for 894 (just 895 Tues/Thurs, 7 PM). If there is one, where did you see that?
2392189683	ebensen65	@cristinano Go to skype.com to download the software. It's pretty easy to do. #sdi09
2392203796	ebensen65	@dcook020 I found the course meeting times under the General Info heading on the syllabus on the course Web site. #sdi09
2392212385	ebensen65	@dcook020 Wish you would also take a look to double check, but I don't think it's an issue since we haven't heard otherwise. #sdi09
2392229515	ebensen65	@cristinano Oh. If we were meeting, Dr. Gossett would have contacted us for a group session. But we haven't heard anything. #sdi09
2392235901	ebensen65	@cristinano Sorry to cause worries. But I keep looking at the syllabus to see if I have misread it and I don't think so. #sdi09
2392248338	cristinano	@ebensen65 Ok. Thanks! #SDI09
2392254957	cristinano	@ebensen65 I looked it over too, and it does seem like we should meet. #SDI09
2392300027	dcook020	@ebensen65 #sdi09 Yeah, I can see why you'd think that. I thought 894 meetings were only during the 2 weeks we're on campus. Hope so.

Perhaps the best proof that classroom community formed online came during the last week of the course when posting tweets was no longer required. Despite this fact, students and the professor continued to have discussions and offer support as the deadline for the final course paper drew closer (*see Table 34*).

Rovai notes, "Without trust, the classroom is filled mostly by the instructor's presence" (2002, p.5). That was not the case in the two archives. Overall, only 13.85 percent of the #SDI09 tweets ($n=320$) were generated by the instructors with one professor contributing 11.42 percent ($n=264$) and the other contributing 2.42 percent ($n=56$). In the #ODUSDI archive, the instructor tweeted 10.52 percent of the messages ($n=159$). As content analysis of the data set demonstrates, student presence accounted for almost nine out of every 10 tweets.

Table 34: Sample Tweets Offering Support in Advance of Final Assignment Deadline for an #SDI09 Course

Tweet ID	From Twitter User	Tweet Text
3295023082	varhodes	Paper writing going more slowly than anticipated. Keep getting more ideas to discuss. Must. Stay. Focused. #MyMantra #SDI09
3296747944	LizaPotts	@ebensen65 Think of the cutting as 'other projects' or 'stuff I will use in the journal article' #SDI09
3296869238	ebensen65	Okay. But not happy w/ final paper. & still 320 over limit RT @LizaPotts: @ebensen65 'stuff I will use in the journal article' #SDI09
3297136367	varhodes	Good advice. RT @LizaPotts: @ebensen65 Think of the cutting as 'other projects' or 'stuff I will use in the journal article' #SDI09
3298319410	slday29	@ebensen65 w/o revising. my paper would look like paint splattered on a wall. then again, some folks love "abstract art." @lizapotts
3298352974	LizaPotts	@slday29 Abstract art has little appeal. I prefer a Waterhouse. Perhaps a Mucha. #SDI09
3299258216	slday29	Alas. Back to work. RT @LizaPotts: @slday29 Abstract art has little appeal. I prefer a Waterhouse. Perhaps a Mucha. #SDI09
3307117562	tenzanoiiron	@LizaPotts Furries on @maddow. Now THAT would have been fun to trace. My #furries search column is PACKED FULL. #sdi09
3307519805	tenzanoiiron	Today is D-Day for all of us in 895! Give it your all and your best! #sdi09
3309888388	cristinano	Y'all were right. This paper could be a dissertation topic. Must remember, as Latour says, paper ends when you've reached word limit #SDI09
3310170440	LizaPotts	@cristinano Some of us wrote our dissertations using ANT and Articulation Theory ;) #SDI09
3310463242	cristinano	@LizaPotts oh i had no doubt that ant could be a dissertation. i doubted jon and kate though. #SDI09
3310524326	tenzanoiiron	@cristinano I've been told multiple times that the furry fandom would make excellent dissertation material. Why not Jon & Kate? #sdi09
3310571560	cristinano	@tenzanoiiron as an anti-fan it's part of my anti-fan resistance! #SDI09
3310603498	tenzanoiiron	@cristinano HATER :) #sdi09
3310618301	tenzanoiiron	@cristinano For the record, I'm apathetic to J&K +8 #sdi09
3310743186	cristinano	@tenzanoiiron Then you are a non-fan #SDI09 they are less interesting :P #SDI09
3310765604	tenzanoiiron	@cristinano Touche #sdi09

Rovai's third dimension, interaction, is necessary but not solely sufficient for the development of a sense of community (2002). He explains, "If we cannot fully promote sense of community through the quantity of interaction, we must foster community through the quality of interaction. A useful distinction in examining the relationship of community and interaction is the categorization of interaction by Hare and Davis (1994) as either task-driven or socio-emotional in origin" (p.5). Task-driven interactions focus on completion of assigned tasks while socio-emotional interactions are directed toward relationships among learners (p.5). Content analysis of the #SDI09 dataset reveals that

79.45 percent ($n=1,836$) were on-topic or “task-driven” with 20.55 percent ($n=475$) off-topic or “socio-emotional” in nature. Similarly, content analysis of the #ODUSDI dataset revealed that 87.16 percent ($n=1,317$) were on-topic and 12.84 percent ($n=194$) off-topic. Beyond this simple binary distinction, it is possible that a single tweet could contain both task-driven and socio-emotional elements. In fact, the #SDI09 archive averaged 3.56 indicators per tweet and the #ODUSDI archive averaged 3.89 indicators per tweet. Considering the social presence indicators that are socio-emotional in nature (emotion, humor, self-disclosure, greetings & salutations, vocatives, group reference, social sharing, and approval) in addition to the off-topic indicator, nearly 31 percent of the total codes in the #SDI09 archive and nearly 37 percent of the total codes in the #ODUSDI archive displayed social or emotional elements (*see Table 35*).

Table 35: Social Presence Indicators Denoting Socio-Emotional Elements

Indicator of Social Presence (socio-emotional in nature)	#SDI09		#ODUSDI	
	Number of Codes	Percentage of Total Tweets (2,311)	Number of Codes	Percentage of Total Tweets (1,511)
Emotion	132	5.76%	107	7.08%
Humor	299	12.94%	158	10.46%
Self-Disclosure	718	31.07	753	49.83%
Greetings & Salutations	28	1.21%	12	0.79%
Vocatives	327	14.15%	456	30.18%
Group Reference	305	13.20%	343	22.70%
Social Sharing	85	3.68%	27	1.79%
Off-Topic	475	20.55%	194	12.84%
Approval	161	6.90%	94	6.22%
Subtotal:	2,530	--	2,144	--
% of Total Codes (below):	--	30.77	--	36.51

Rovai's research indicates that feelings of classroom community are "moderately related" to interactivity; that dialogue is more important than structure (2002, p.7). But that interactivity can be more difficult to experience online than in face-to-face contexts. Coherence — the perception that conversation "holds together" and makes sense in an example of discourse — can be a critical consideration for computer-mediated communications (Lapadat, 2007, p. 64-65). Lapadat calls to our attention research showing that "despite violating the sequential turn-taking of oral conversation and their chaotic surface appearance, synchronous online discussions are coherently structured, and this coherence is perceived by participants. They [researchers] noted that this coherence is facilitated by participants' use of explicit reference markers (1996; also Honeycutt, 2001)" (2007, p. 65).

Because Twitter can be used in an asynchronous manner, we cannot assume that those viewing the tweet stream have a shared context. Indeed, given its public nature, the first explicit marker that helps provide coherency is the hashtag #SDI09 itself. This label allows a participant to filter out other tweets bringing a measure of order to the "chaos." Three social presence indicators contribute to the sense of coherence. The use of @replies (directing a tweet to a particular Twitter user by placing their user name at the beginning of the post) provides a direct connection to another user and bolsters topical coherence. Interestingly, 40.42 percent ($n=934$) of the #SDI09 dataset and 25.88 percent ($n=391$) of the #ODUSDI dataset were coded as @replies (@) indicating a high degree of conversation between participants and pointing to substantial coherence. Similarly, sending retweets (placing the marker "RT" in front of another user's post and

broadcasting again) often with additional detail or comment draws a direct connection between comment and reply. In this case, 7.36 percent ($n=170$) of the #SDI09 archive and 19.46 percent ($n=294$) of the #ODUSDI archive were coded as retweets (RT). Together, @replies and RTs make up nearly half the messages included in the 2009 and 2011 data sets (47.78 percent and 45.34 percent respectively). Finally, by definition, the acknowledgement indicator (Ack) denotes that a tweet directly refers to a posting from another participant in the archive. In the #SDI09 archive, 17.91 percent ($n=414$) were coded acknowledgment while 13.04 percent ($n=197$) of the tweets in the #ODUSDI archive were assigned the same code. These features point to a high degree of coherence within the tweetstream.

Learning, the final dimension of classroom community, refers to “a commitment to a common educational purpose” (Rovai, 2002, p.6). That commitment is clearly demonstrated by the fact that such a high percentage of tweets in each data set were “on topic” dealing directly with the readings or subjects being discussed as part of the course syllabus (79.45 percent in the 2009 SDI archive and 87.16 percent in the 2011 SDI archive). Similarly, the high level of employing @replies and retweets points to a collaborative approach to knowledge construction within the group. Additionally, students also began to make connections across courses (*see Table 36*) and with an outside doctoral reading group hosted by the English department (*see Table 37*).

Table 36: Sample Tweets from #ODUSDI Demonstrating Participants Making Connections Between Classes

Tweet ID	From Twitter User	Tweet Text
86051650426503100	snobles	#ODUSDI Findability is about WORDS, our speciality. Words are messy tho (Phelps rdg supports this). Love needing to really know words.
96545074254594000	snobles	For those of you rdg activity theory book for Louise, chapters 9 & 10 have great ANT moments that add to this article. #ODUSDI
88594880359706600	snobles	@rachelb213 RT inside perspective on theory production - I loved his definition of concept and thought about Phelps's class lots #ODUSDI
91248644002553800	writersbloc	I keep finding connections between both classes! "@snobles: Can't help it! Thinking about productive theory while reading DC. #ODUSDI"
91260274329399200	rachelb213	@rhetorjib @snobles @writersbloc collision of classes: what are JJE's concepts? #odusdi
92231350454726600	snobles	I have to say that Louise's class had me rdg Slack to see how concepts and theories are used! #ODUSDI
93073568086245300	writersbloc	This summer is making me suspicious of my own language; no term is safe: articulation, concept, theory, actor ... the list goes on #odusdi
96208858069991400	rachelb213	again seeing overlap w/ #odupt as i read re: genre theory and gaming #odusdi
96251848251539400	rhetorjib	me 2, loving the immersion RT @rachelb213: again seeing overlap w/ #odupt as i read re: genre theory and gaming #odusdi

Table 37: Sample Tweets from #SDI09 Exemplifying Participants Making Connections to a Departmental Reading Group

Tweet ID	From Twitter User	Tweet Text
2922518676	varhodes	Hmm...Jenkins: cnvrgnc not technological, involves ppl RT @ebensen65: #sdi09 Latour p189-190: Always a human behind a non-human (actant)....
2922578549	varhodes	@ebensen65 in some respects, blk boxes = convenient shorthand. Not have to trace every blk box back to all actors... till it fails. #sdi09 #
2922580973	LizaPotts	Convergence of your readings? :) #SDI09 @varhodes @ebensen65
2922597174	varhodes	@slday29 think it's cuz we're inextricably linked. Can't have things w/o ppl to make. can't live as ppl sep from influence of things. #sdi09
2922605864	varhodes	Yeah... or extreme fatigue! LOL RT @LizaPotts: Convergence of your readings? :) #SDI09 @varhodes @ebensen65
2922959377	LizaPotts	@varhodes Reminiscent of arguments against technological determinism made by Williams in Television (from Tuesday's reading group) #SDI09

Examining the digital archives from each Summer Doctoral Institute through the lens of Rovai's theory provides a basis for answering my initial research question. Both quantitative and qualitative data from this analysis suggest strong evidence of all four dimensions — spirit, trust, interaction and learning — thus providing a second

affirmative response. My application of Rovai's evaluative framework to the data presents my ninth finding — confirmation of a sense of online community existing in the three courses examined.

Microblogging as a Facilitator of Online Community

Having empirically demonstrated the existence of online community via two theoretical constructs, it is now time to turn my attention to the social media environment in which this occurred. Clearly, online community can be seen in a microblogging archive meaning the social media tool (in this case, Twitter) can support a community. The question becomes whether Twitter is a viable tool for developing online classroom community:

- **Question 2:** In what ways did microblogging facilitate or hinder community formation in this context?

I will begin to answer this question through further application of Rovai's theory and conclude with my own observation about the affordances of Twitter compared to other learning technologies.

Rovai (2002) offers seven factors positively correlated to classroom community: transactional distance, social presence, social equality, small group activities, group facilitation, teaching style and learning stage, and community size. Although scholars have noted that a CMC tool is not sufficient for creating community in and of itself (Lee, 2006), examining the factors relevant to Twitter among these seven domains should demonstrate whether the social networking technology is useful in terms of building

stronger online classroom community. For these purposes, I will closely examine the factors of transactional distance and social presence.

Five of Rovai's factors do not specifically apply to a technological tool. I will, however, cover each of them briefly as further background in considering the development of community in this case study. Two are closely related in that they deal with the number of participants engaged either in an online classroom community or a particular task. With regard to community size, Rovai notes that common sense says that a smaller class will have increased learner-instructor and learner-learner interactions (2002, p.10). He notes the impact of a 1979 meta-analysis by Glass and Smith of 80 studies that suggested smaller classes are significantly better than larger ones with respect to student achievement, classroom process, and teacher and student attitudes (p.10). Rovai explains that 8-10 students appears to be "a reasonable estimate of the critical mass needed to promote good interactions" and places the upper limit that a single instructor can reasonable handle within a single online class at 20-30 students (p.11). Since one class during the 2009 SDI included eight students and the other included nine, both courses fall within this range. In the 2011 SDI, the course enrollment was five. Similarly, Rovai suggests that small groups of less than 10 students support concepts of situated learning and communities of practice (p.8). Again, both courses fall within this parameter for total number of students meaning any small group work would necessarily fall below that threshold.

Rovai notes that another factor that influences the growth of online classroom community is social equality. Recalling the 1986 work of Belenky, Clinchy, Goldberger, and Tarule, he discusses two gendered textual communication patterns that threaten

social equality: “(a) the separate voice, that is the separate, autonomous, or independent path which is typical of the majority of men (and some women); and (b) the connected voice, the relational, connected, or interdependent path, which reflects the majority of women (and some men)” (2002, p.8). The connected voice supports classroom community while the separate voice does not. In the 2011 SDI, one class was comprised six women and two men while the other was comprised of six women and three men. In the 2011 SDI, the course was comprised of four women and one man. In light of this this gender breakout, use of the connected voice would be expected as the norm. Although extensive analysis of gendered voice is beyond the scope of my dissertation, the gender breakdown of participants falls in lines with Rovai’s observations and I did not see any impact of Twitter skewing type of voice found within the discourse.

Two other factors identified by Rovai as contributing to the growth of online classroom community center on the instructor. He notes that a sense of community is supported in an online environment when the teaching style is aligned with the student’s learning style. Dependent learners are more comfortable in an environment that privileges structure over dialogue while self-directed learners prefer an environment that prizes dialogue over structure. Because they were populated by graduate students (primarily PhD students), the SDI 2009 and 2011 courses fall clearly in the latter category. Most of the students enrolled in the courses were veteran distance learning students in that they had taken multiple courses that included a distance component. For those who needed additional guidance or structure, the instructors provided opportunities for communication outside Twitter (via Skype video calls, telephone conversations, and face-to-face meetings during the on-campus portion of the course).

The other teacher-related factor that contributes to online community identified by Rovai is group facilitation — efforts meant to inspire learners to interact, keep students on-task, and build and maintain the group (2002). Selection of Twitter as the primary vehicle for online discussion and requiring students to post a minimum number of tweets was intended to keep students on task. The aim of this research is to examine whether these instructional designs also facilitated the building and maintenance of community. Additionally, both instructors participated strategically in discussion; not dominating the tweet stream, but rather asking specific questions to prod students thinking (*see Table 38*). In fact, of the 13.85 percent ($n=320$) of tweets generated by the instructors in the #SDI09 data set, 58.90 percent ($n=192$) were directed to or responses to students. And, of the 10.52 percent ($n=159$) of tweets generated by the instructor in the #ODUSDI data set, 84.28 percent ($n=134$) were directed to or responses to students.

Table 38: Sample Tweets of Instructors Asking Questions

Tweet ID	From Twitter User	Tweet Text
2876833524	gosssetphd	Good ? define "real" RT@mimiodu: #sdi09 Manovich: animation, artificiality, special FX. Which 1995 film is more real: Toy Story or W
2876887980	gosssetphd	so do M and B&G agree more than disagree? RT @ebensen65: #sdi09 Manovich "cinema [has evolved] to a subgenre of painting."

Rovai calls on Moore (1993) in defining transactional distance as the psychological and communicative space between learners and instructors (2002). Transactional distance is dependent on dialogue and structure (Moisey, Neu and Cleveland Innes, 2008) where structure refers to the amount of control exercised by an

instructor in a learning environment as opposed to dialogue that affords the student a greater level of control (Rovai, 2002). High levels of structure and low levels of dialogue translate into a greater or “remote” transactional distance while lower levels of structure and higher levels of dialogue result in “closer” transactional distance and a stronger sense of community (Moisey, Neu and Cleveland Innes, 2008, p. 22).

Transactional distance is closely related to the concept of immediacy. Swan notes that immediacy (also defined as the perceived psychological distance between communicators) can be enhanced verbally (via behaviors such as offering praise, soliciting viewpoints, use of humor, and self-disclosure) and non-verbally (via physical proximity, touch, eye contact, facial expressions, and gestures) (2002, p.35). This leads to my tenth finding which centers on transactional distance. Previous examples from the data set demonstrated that although non-verbal cues are not available via CMC instructors and classmates engaged in other text-based equivalents of verbal cues. Additionally, analysis of the #SDI09 archive reveals a high level of dialog — nearly 50 percent @replies or RTs (47.78 percent in #SDI09 and 45.34 percent in #ODUSDI) — in an asynchronous social networking environment characterized by low levels of structure (especially low structure in comparison to online discussion forum tools). It is important to note that @replies and retweets are specific affordances of Twitter and therefore help support its viability for facilitating online community.

To best encourage all learners to participate in online discussions on a regular basis, Rovai advises that students be made aware that participation in classroom discourse is not only required, but also graded. All three SDI 2009 and 2011 courses required participation in Twitter-based discussion and awarded grades for doing so.

While there may be classroom-management reasons for this requirement, doing so may not be the best choice if promoting a greater sense of community is the primary concern. I will return to this point in more detail in Chapter 6.

The final factor that contributes to classroom community building is social presence (Rovai, 2002). Participating in CMC creates social presence for communicators by projecting identities and building online communities through the use of verbal immediacy behaviors (Swan, 2002). According to social presence theory, what matters in relationships developed via CMC is that participants in a discussion feel that the other communicator is a “real person” (Bikowski, 2007; Akayoglu et al., 2009). In her study of an online community, Bikowski found that the students who formed friendships online felt that their peers were real; that their peers were expressing emotion, engaging in humorous exchanges, sharing pictures and talking about their personal lives (2007). As discussed earlier in this chapter and demonstrated with various examples, use of humor, engaging in off-topic exchanges, and sharing personal information are common features of the #SDI09 and #ODUSDI datasets. Clearly, the ability to have so many codes appear in just 140 characters points toward Twitter’s viability in this regard. Thus, my eleventh finding: the high degree of social presence supported by the use of microblogging allows Twitter to enhance online community development.

Dunlap & Lowenthal note, “What seems to be missing [in online courses] is the just-in-time, and sometimes playful, interactions that happen before and after class, during a break, and when students and faculty bump into each other between class meetings” (2009, p.129). It is precisely these types of opportunities that Twitter affords in a more meaningful way than some other learning management software (LMS) used for

online courses. Consider the discussion board forum (such as the one found in Blackboard). This can be envisioned as a closed virtual space a person enters for the purpose of completing an assignment and then, subsequently, leaves. It is a relatively static — or, at best, sporadically used — empty virtual room. The writing and communication that takes place within the room tends to be constructed in an academic voice and targeted primarily at the instructor (not classmates). The conversation is dyadic in nature; focused on the instructor. Even though a response to peers might be required, the student's colleagues are not the primary audience. Interactions here are unlikely to be “playful” or the “just-in-time” conversation sought by Dunlap and Lowenthal. As a result, the discussion board format would appear less likely to generate affective bonds and a sense of belonging to an online community.

The empty room metaphor of the discussion board stands in stark contrast to Twitter's Burkean Parlor. Here, the conversation is perpetual; occurring before the student arrives and continuing after she leaves. Precisely because it is a form of social media, the digital environment of Twitter presents an intersection of various interests and identities. The course hashtag (in this case, #SDI09 or #ODUSDI) stands as a virtual cocktail table within the digital Burkean Parlor around which students may stand and converse about course-related academic topics. But a few digital steps away, the conversation continues about politics or entertainment that are as much a part of the students' lives. I have discussed the performative nature of using a hashtag in Twitter elsewhere in this dissertation, but it is a notion worth revisiting. Employing the course hashtag is a conscious self-labeling as a member of the online classroom community. But given the public nature of Twitter, the hashtagged posts will also appear in the

tweetstreams of non-academic followers extending the identification as part of an online classroom community and, perhaps, prompting questions about that membership or the content being discussed. This returns us to the important notion of digital underlife.

A discussion board forum is private; owned by the instructor and the educational institution. A student must have assigned institutional credentials to enter the space and has little to no control over her or his identity. Twitter, on the other hand, is hyper-public. The social media environment and even the course hashtag may be used by anyone. Another key difference centers around the student's construction of her identity. In this social media environment, she may construct herself as she sees fit. She chooses her own username. She decides what information will reside in her public profile (if any). She will engage in academic activities, but may also pursue her interests in online gaming and alternative music. In short, she may exercise her digital rebellion from the identity that an academic institution might attempt to force upon her. Because her peers can "follow" her, they can learn more about her and her interests. This brings us much closer to Brooke's hope as discussed in Chapter 1 around the concept of writing underlife. The social media aspect of the Twitter microblogging platform allows for the increase of the "self's possible roles, widening the ways literacy is used in the celebration and establishment of viable sustainable communities" (1999, p.241). The student's social presence may be constructed and conveyed as she sees fit. My twelfth finding supports an affirmative answer to my second research question — that microblogging in general and Twitter specifically helps facilitate community formation because the virtual space stands at a digital crossroads of the student's interests while also allowing her to construct her digital identity.

As I noted briefly in Chapter 1, community cannot be mandated. It must be developed from the inside out (Cook D.L., 1995) — a challenge considering the physical separation. Indeed, the reduced visual cues afforded by the distance-learning environment may contribute to an increased feeling of isolation and disconnectedness in learners (Liu et al, 2007). Electronic tools do not define community; rather the partnerships and interactions between participants foster or hinder development of community in an online environment (Lee, 2006). However, chosen technologies do shape the way we think and approach a task and, in the case of social networking tools, foster interaction, collaboration, and contribution (Gunawardena et al, 2009). Whether emergent or designed, online community is incremental and fluid evolving through nurturing conditions (Ke & Hoadley, 2009).

Dunlap & Lowenthal (2009) like Potts, Gossett & Rhodes (2010) have noted discontent with various online distance-learning tools such as discussion forums or blogs. Because asynchronous discussion forum and chat tools found within interfaces such as Blackboard require that students navigate through the system's structure to access them, discourse within those environments may appear forced and out of context (Dunlap & Lowenthal, 2009). Twitter is a viable alternative to foster online community not only because it is free, established, and enjoys a growing participant base, but also because it recaptures the informal, free-flowing, just-in-time banter common in face-to-face settings (p.130). In addition, Twitter's lightweight microblogging structure provides an additional advantage — it is highly mobile and easily accessible (McNely, 2009). The ability to use mobile devices and simple applications to tweet make the social networking tool a more

immediate option for engaging in online classroom community discourse and an attractive alternative to courseware such as Blackboard (Dunlap & Lowenthal, 2009).

No pedagogical strategy or technological tool is a panacea, however. And while my research reveals Twitter is a viable platform for facilitating online classroom community, it is important to consider some of the challenges associated with its use. It is clear from the archives that the 2009 students were less familiar with Twitter, the social software's user interface, and the syntax for tweets. Participants struggled with the 140-character limit imposed by the social networking software as evidenced by multipart posts. The 2011 students demonstrated an increased familiarity and comfort with tweeting, but an instructor cannot assume all participants will have an equal facility with Twitter. A relevant limitation of this study stems from this fact. The data sets are comprised of appropriately hashtagged tweets from the three courses studied. By definition, if a student had limited participation in the online conversation because of discomfort with the social media tool or failed to use the hashtag, his tweets would not be reflected in the archive. Despite, this potential challenge, I do not find evidence that microblogging retarded online classroom community formation in any significant manner and see no need to reject the social media tool.

Because technology shapes the online environment itself and the nature of interaction, it can facilitate online learning communities (Liu et al, 2007). Specifically, my case studies suggest a thirteenth finding: Twitter allows instructors and class participants to change the rhetorical situation — change their audience, shape their online persona and ethos, and alter the academic register of discourse used in the class. As a

result, the Twitter microblogging platform can be seen to facilitate a sense of online classroom community within the context of my two case studies.

Revising the Definition of Online Classroom Community

My third and final research question asks whether my concept of online classroom community changed given my research:

- **Question 3:** What revisions to our definitions of online classroom community does my research suggest?

Having reviewed the existing scholarly literature and after considering the various definitions and alternatives provided in light of my findings, I now offer my fourteenth finding in the form of an alternative definition that could serve a heuristic function in identifying the presence of online classroom community.

A community isn't simply a collection of people. That's a "group" — an assemblage with no implied bonds or connections except perhaps some aspect of collocation in time and/or space (for example, a group of people standing outside the building). A "class" is similar in context: this is a group of people who are gathered (typically) in a location (generally a common classroom; although distance learning may mean this is a common virtual space) at the same time (again, online educational trends may mean the class is asynchronous and students may not be together at the same point in time). The added component in a class is the common bond of purpose. But shared purpose (passing the course or acquiring knowledge) alone does not create community. While there may be a shared sense of purpose, it is still centered on the individual (What will I learn? What do I need to do to pass this course?). There is little (or no) required

focus on classmates. In addition, traditional classroom dynamics may set up a dyadic relationship between the student and the teacher.

A sense of online classroom community goes beyond that. There is a focus on relationships between peers. It is not just about the student-professor dynamic. Peers bond with each other. They engage each other actively around course material. They express concern for each other academically and, perhaps, personally. This may manifest itself by the sharing of information about a peer's research topic or by engaging in extended conversation about a discussion topic of interest to one participant that is not of interest or benefit to the other participants. In a classroom community, students engage around more than just the class material. They participate in off-topic conversations and contribute to a shared ethos. They begin to identify collectively with the group rather than using the course name as a temporal or geographic marker (for example, English 101 at 2 p.m. where the course name merely connotes some academic purpose or stands in as a location marker).

Sense of community is related to the amount of time spent together (whether through virtual presence or physical proximity). However, the time students spend in the typical class meeting is not necessarily enough. As a graduate student (and as an undergraduate student), I participated in courses that lacked a sense of community. I saw my peers during our prescribed meeting time, but did not think of them or interact with them between those sessions. In some regards, this was because the primary relationship — the one assigned priority — was the dyadic student-professor relationship. Because class time might focus on presentations, instructor lecture, or directed activities, there was little time for social, off-topic conversation that can lead to bonding. While these

interactions might happen before or after class or during a break in an evening course, this was not necessarily sufficient time.

Similarly, synchronous presence in the same physical location is not enough. While there might be peer-to-peer dialogue during class, it takes place in an environment with high instructor presence; in a space where the focus is a dominant relationship centered on the teacher. Consider the example of a physical neighborhood. While there may be strong emotional ties between certain neighbors, physical proximity is no guarantee that inhabitants will interact or feel any sort of bond. It is certainly possible (although there are usually other factors that drive the connection), but simple colocation is not enough.

Social media allows opportunities to forge stronger bonds largely because it can move beyond the physical classroom space and its singular context. Social media contributes to community — and moves people beyond being just a group — because it often blends personal and academic spaces. Consider the example of another piece of academic software: Blackboard. It functions solely as an academic space. Students don't "hang out" there. They visit this digital construct to fulfill an academic assignment and then move on. The environment provided and the questions typically asked are designed to facilitate dyadic conversations via pseudo-academic writing — writing that is cast in a more formal register, focused on a singular purpose (demonstrating acquired knowledge) and, generally, authored for an audience of one (the instructor).

Social media spaces, on the other hand, better allow for the student's personal and academic worlds to merge or overlap. A person's myriad identities and/or personas may converge. This is particularly true when using Twitter for an academic requirement and

following a hashtag as part of the course. A hashtag is a label preceded by the pound sign (#) that facilitates grouping of and searching for comments on a related topic (for example, #ENGL801). While a hashtag may serve other purposes (such as a vehicle for sarcasm or a textual aside), I will focus on its aggregation-enabling function for the moment. Using an appropriate Twitter client, a hashtag can be used to filter the tweetstream so that only relevant tweets appear. However, a fellow student may forget to employ the hashtag in a particular post. Therefore, a person might “follow” peers allowing the posts written by colleagues to appear in a friends or followers column in the Twitter client. As a result, the participant would see comments from classmates alongside posts from friends or celebrities or other academics being followed. Or, depending on the Twitter client employed, the participant might see an academic search column next to the general tweetstream that includes messages from friends or posts about the participant’s particular interests. And, because the Twitter client serves multiple purposes, the participant has a greater propensity to leave the social software active — to “live” there.

The participant is more inclined to exist for longer periods within this particular digital space because it includes not just her academic world but also parts of her social world. Because she spends more time in this social media environment, she increases the likelihood that she will have the opportunity to serendipitously engage in conversations with classmates as they post. She also might see their off-topic posts. She experiences more opportunities to bond whether around academic exchanges or purely social interactions.

Third place, backchannel, and digital underlife.

In essence, this social media environment becomes a digital Third Place.

Oldenburg and Brissett (1982) noted that a “third place” exists outside the workplace and home (p. 266) and provides a location where people can gather primarily to enjoy each other’s company (p. 269). They identify taverns and bars as the dominant third places in society at the time of their writing (p. 269.). These spaces must be accessible, and patrons appropriate it as their own. In short, it must be well integrated into their daily lives (p. 270). According to the authors, third places have some key characteristics. They provide opportunities for “pure sociability” and play (p. 270-271) and the discourse includes non-discursive symbolism (p. 272). According to Oldenburg and Brissett, discursive symbolism “is used when individuals are establishing contracts, solving problems, buying merchandise, discussing personal problems, planning parties, meeting clients, etc.” (p. 272). Non-discursive symbolism, on the other hand, “establishes not contractual bonds between people but spiritual ones; not simply *knowledge of* people but *knowledge about* people” (emphasis in original, p. 272). Another hallmark of the third place is unpredictability — not that something unpredictable is guaranteed to happen, but simply that it is possible given the mixture of people, experiences, and diversity present in the space (p. 274). Those in the third place also note that time often “slips by” amid the interesting company; that they lose track of how much time they have spent in the space (p. 276).

Soukup (2006) summarizes Oldenburg’s refinement of the third place concept from Oldenburg’s 1999 book *The Great Good Place: Cafes, Coffee Shops, Bookstores,*

Bars, Hair Salons and Other Hangouts at the Heart of a Community noting several characteristics of third places:

- they are located on neutral ground;
- they are a leveler (meaning hierarchy and class distinctions are minimized);
- the main activity is conversation;
- the space is accessible;
- they serve as a home away from home with regular attendees; and
- the mood is playful (2006, p.423).

Oldenburg and Brissett (1982) conclude that “third places represent one of the important vestiges of community; an experience of mutual concern and appreciation for people who are ostensibly different from oneself” (p. 276). Soukup further explains:

For the individual, the third place offers relief from the stressful demands of work and home life and provides the feeling of inclusiveness and belongingness associated with participating in a group’s social activities. For the greater community, the third place strengthens community ties through social interaction, fosters commitment to local politics via informed public discourse and promotes safety and security through open and visible interaction (p. 423)

This concept of third place has been applied to a variety of fields and subjects:

- architecture, ethnology, cultural studies, linguistics, and education (Cook M., 2005, p. 85);
- sociology, new media studies, marketing, and urban planning (Soukup, 2006, p. 423);
- schools and family learning programs (Cook M., 2005);
- computer mediated communication tools such as MUDs and newsgroups (Soukup, 2006) and MOOs used for second language learning (Schwienhorst, 1998);
- online gaming environments (Steinkuehler & Williams, 2006); and
- social network sites such as Facebook and Hi5 (Köhl & Götzenbrucker, 2014).

And, I believe that the theoretical construct of the third place converges in my study with the concepts of digital underlife and digital backchannel.

For as long as there have been speakers and audiences, there has been backchannel communication — whether as a whispered aside or, later, a passed note.

However, the rapid development of increasingly sophisticated digital tools and widespread availability of wireless internet access has afforded the creation of larger, virtual backchannel spaces. The term “backchannel” derives from linguistic and political contexts. In the linguistic sense, backchannel communications are utterances or non-verbal signals that indicate a listener is listening to a speaker (Kellogg et al., 2006, p. 451). Examples of this include a listener nodding his or her head or saying “uh huh” to signal agreement with the speaker. In the political sense, backchannel offers a connotation of being informal, unofficial, unwanted or illicit and allowing for potential deniability (Kellogg et al, 2006, p. 451; McCarthy et al., 2004, p.550). Defining the term in a digital context, Yardi (2008) notes,

The central function of the backchannel is its use as a secondary or background complement to an existing frontchannel. The frontchannel may consist of a professor, teacher, speaker, lecturer, conference panel, or other similar environment containing a centralized discussion leader who is usually collocated in the same physical space as the participants. (p. 144).

She argues that digital backchannel in a classroom setting “offers a unique communication medium, a novel toolkit through which students can create, identify, and filter new modes of learning” (2006, p. 852). But, not all speakers and teachers agree that this technological affordance is beneficial, and their concerns are not unfounded. Digital backchannel “revolts” have become increasingly common at technology and academic conferences (Guernsey, 2003; Madrigal, 2008; Madrigal & Wortham, 2008; Rhodes 2010) and some fear similar outcomes in the classroom. Despite the potential challenges and concerns of some instructors, a properly implemented digital backchannel can be a

beneficial complement to the classroom setting and provides a vehicle for fostering online community.

When used for backchannel purposes, Twitter functions in a generally synchronous capacity. Participants gathered for a class use the microblogging tool to comment in real time outside the frontchannel. But the technology also may be used asynchronously as a frontchannel — or serve in both modes. Figure 10 shows how Twitter may be used asynchronously in a frontchannel capacity between classes but convert to a synchronous backchannel during class. Because of its course structure (*see Figure 3 in Chapter 3*), SDI 2009 primarily engaged Twitter as an asynchronous frontchannel (*see Figure 11*). The technology served as the primary vehicle for discussion during the off-campus portions of the course. While it could still have functioned as a synchronous backchannel during course meetings, participants used it this way only sparingly to make comments and post supportive tweets during student project presentations.

Figure 10: Typical Twitter Utilization Between Class Periods and as Backchannel to Class Session

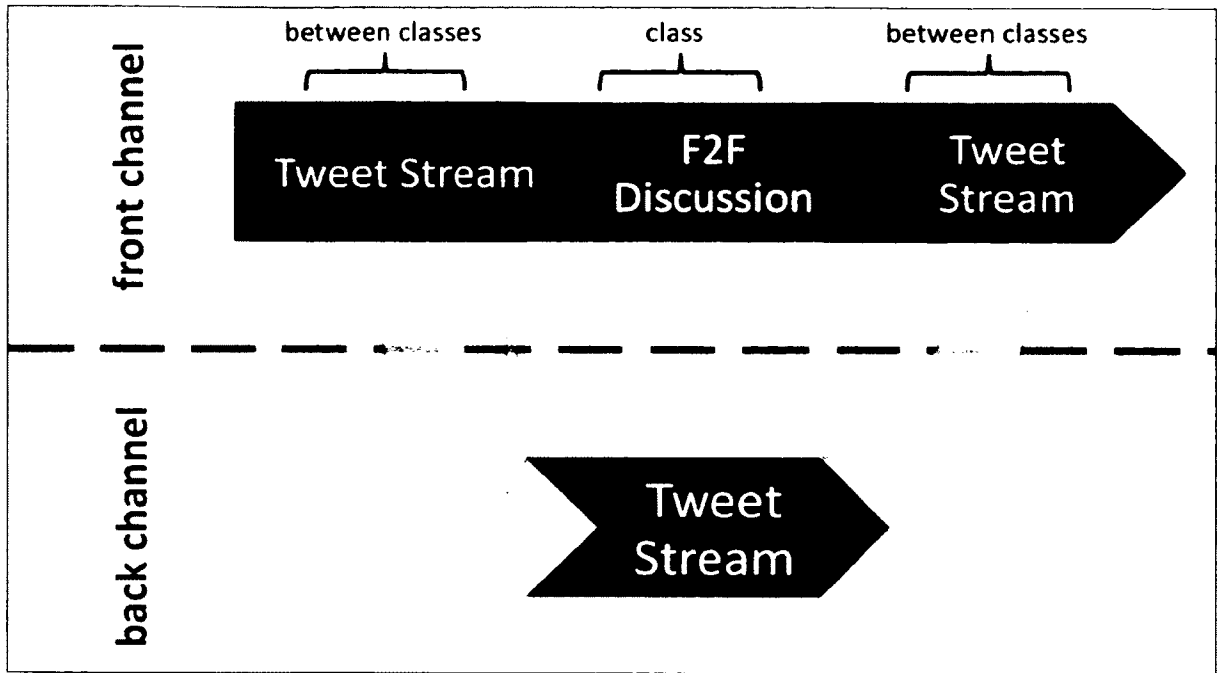
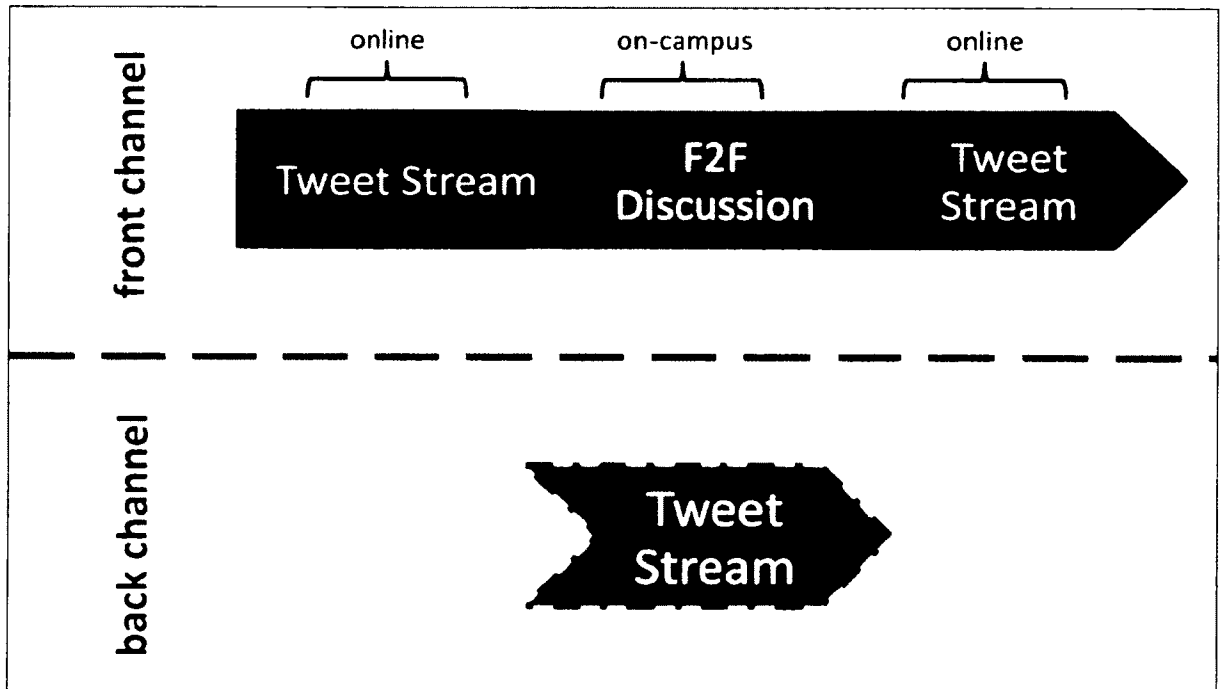


Figure 11: Foregrounding Twitter as Frontchannel in SDI Courses



While the microblogging tool Twitter can facilitate the formation of online classroom community as demonstrated in the answer to my second research question, this oscillation between serving as front- and backchannel can present some challenges to fully realizing the potential of the social media tool for building community. Knowing Twitter's public nature and the fact that it served as a frontchannel for much of the class, students are aware of the instructor's presence in the digital space — no matter how much she minimizes her participation. In fact, as noted elsewhere in this dissertation, students in the 2011 SDI established a second backchannel (a Skype chat) to communicate outside the “official” course environment. It is here that the convergence of the concepts of backchannel, digital underlife, and the third place must be considered.

Mueller (2009) explores the interplay between Brooke's concept of underlife (modernizing it in the context of a digital underlife) and the digital backchannel made possible by increasingly networked technologies. He notes that both concepts have adapted with the changing times (p.242) and clarifies that underlife consists of the range of behaviors employed to subvert the primary communications channel while backchannel names the disruptive space in which these behaviors occur and a participant may assert an identity contrary to the one the institution imposes or expects (p.243-244). Conceding that instructors may find this new digital challenge threatening, Mueller proposes that digital underlife be moved beyond the binary of contained or disruptive descriptors to include a third: productive; an understanding that enacting this digital underlife might enable meaningful discursive practices (p.246). He notes:

Blogs, Twitter, and Facebook are among the applications supporting productive digital underlife for growing numbers of writing teachers —

“productive” because these platforms provide connectivity in many of the ways traditional institutional scenes cannot, and because these writing practices yield tangible, collaborative works (eg. conference proposals, conversations, informal drafts) (p.247).

I concur that these entwined concepts of digital underlife and backchannel can foster productive results — particularly when we weave in the notion of a digital third place. Oldenburg and Brissett contend that third places should encourage and thrive on emotional expressiveness: “It is our feeling that a person ought to have a place where he can bellow like a fundamentalist preacher now and then, and not have to confine his protests to cryptic sarcasms at the watercooler or to taking ‘little digs’ at his spouse across the dinner table” (1982, p. 278). This type of outburst would be wholly inappropriate in a discussion forum residing within the college LMS. Social media venues (including microblogging platforms such as Twitter), however, provide a virtual environment to opine and bloviate as necessary. But, one must consider the cost when that digital venue is owned (or, at least, monitored and managed) by the instructor. While this research study validates existence of online classroom community and makes a case for the ability of Twitter to foster it, the greatest benefits may come from releasing official control. Third places must be fully integrated into the students’ daily lives and they are best equipped to determine which social media platform that might be. They must allow for sociability and play — opportunities that can be significantly hampered if the digital space is micromanaged by a high degree of instructor control.

While it is beyond the scope of this study to determine whether participation in a social media space should be mandated or even graded, such a pedagogical choice merits further consideration. The courses in my case study required a minimum number of posts and that resulted in robust participation. But if the goal is to build a sense on online

community that dissuades program attrition and strengthens bonds between students, perhaps such a requirement is not necessary. Mueller explains that students do not always appreciate to the same degree the online activities favored by instructors (2009, p. 243). Perhaps, instructors — and, by extension, educational institutions — would be better served by relinquishing control; making students aware of the options for digital third places and encouraging them to participate without creating the environment for them or requiring engagement. This convergence of backchannel, digital underlife and third place concerns and the productive complications they present to our distance learning classrooms leads me to propose a definition of online classroom community that inextricably links consideration around the digital space with the affective components common to previous definitions.

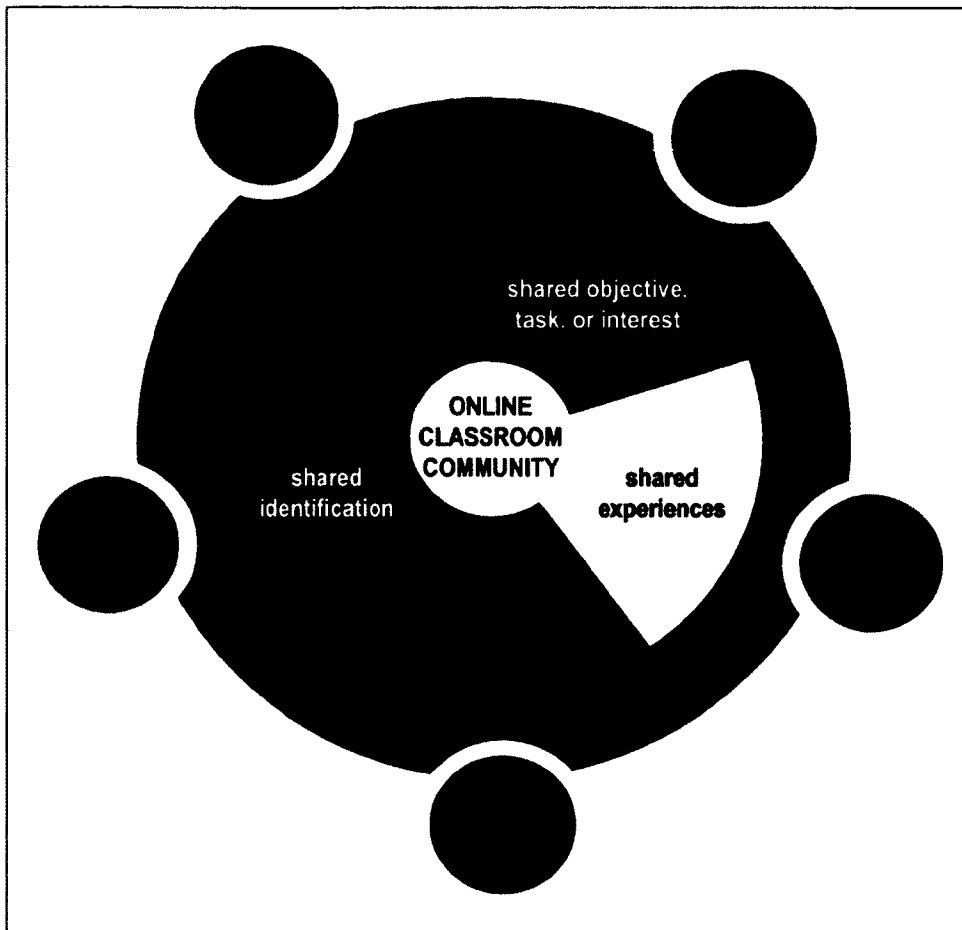
Defining online classroom community.

I contend that online classroom community, then, is based on five components: shared virtual space; a shared objective, task or interest; shared experiences; shared obligation; and shared identification (*See Figure 12*). I will discuss each of these elements before summarizing my findings and concluding this chapter. Each of my five proposed elements may be present in lesser or greater degrees than the others, but the strong presence of all elements points to a higher likelihood of the existence of a sense of online community. However, it is important to be mindful that each student may have a different perception about the existence (or absence) of this bond. For this reason, I often will use the phrase “sense of community” in this dissertation to foreground the subjective

perception of this connection and minimize the binary conception that community either exists or does not.

The first concept, shared virtual space, is straightforward but critical. While specifically included by Rheingold (2000) and Gee (2004) and various scholars employing the Community of Inquiry framework, this element is omitted completely by Rovai (2000, 2002) and not considered specifically in a digital context by Harris (1999) or Lave and Wenger (2001). An online community must have a place to exist. In light of the distributed-learning context of this dissertation, that space can be virtual (or some hybrid blend between virtual and physical space given the graduate program being studied includes both on-campus and distance-learning students). This shared virtual space may be made possible by one or more social media tools that allow the space to serve as frontchannel, backchannel or both. Considering the lightweight, flexible nature of these types of social media tools, students may create their own companion virtual spaces to established “official” digital academic spaces. Additionally, in the context of online distributed learning, it is important to keep in mind that students may inhabit these spaces synchronously (for example, during a scheduled course meeting), asynchronously (if the course is self-paced), or some blend of the two (if students use the digital space on their own time between synchronous meetings).

Figure 12: Diagram of Proposed Definition for Online Classroom Community



This space must be built around key characteristics — namely that the digital environment allows participants to project social presence. This concept will be explored in more detail later in this dissertation, but essentially means that participants have a sense that the “others” they are interacting with online are real people. A virtual academic space that seeks to enhance a sense of online community also must allow for a decentering of student/teacher dyad instead allowing for robust peer-to-peer interaction in both “official” class-related tasks and via informal, more social situations. Quite simply, with conversational serendipity comes greater emotional response. These opportunities

for off-topic discussions come most often before and after class or during breaks as students physically present on location stand in the hallway and chat. These are the conversations that occur as students wait for the professor to arrive. During these times, a person feels connected to the group (and, thus, part of a community). She or he rarely sits silent in those moments. The person participates and relates on an emotional level. To fully capitalize on the prospects for facilitating online classroom community, students also should be encouraged to establish their own digital third place — a virtual space that serves as a backchannel suitable for acting out the digital underlife behaviors discussed earlier in this chapter.

The second component of online classroom community — a shared objective, task, or interest — hearkens to Gee's concept of an affinity space. Harris discusses this in context of writing. Lave and Wenger view this in terms of a particular profession or recovery from alcoholism. Rovai and the Community of Inquiry scholars see this shared objective as learning. The crux of this element is simple. The group of people cannot simply be assembled. It must have some unified purpose or interest. Take the earlier example of people waiting outside the building. There are likely to be many divergent reasons for their presence. But, if the group is assembled at a bus stop, a sporting event, or a concert, the participants share a foundation upon which some bond may be built (however fleeting).

It is important to note that a sense of community need not persist indefinitely. Indeed, it is highly unlikely that it ever would. An exceptionally weak form of community may exist for the duration of the bus ride. But the greater the interest or the longer the duration of the task, the greater the chance a stronger sense of community will

evolve. In the case of an online course, this bond may last only for the duration of the semester — still a worthy pedagogical goal. But, should the relational bonds be strong enough, that sense of community could persist. In the case studies examined for this dissertation, there is evidence of this persistence beyond the time-limited courses themselves. What began simply as a course hashtag (#SDI09) in the first Summer Doctoral Institute morphed into an ancillary hashtag for the doctoral program (#ODUPhDE) that overlapped with the second SDI course hashtag (#ODUSDI). During that second SDI, students formed their own ancillary backchannel via Skype chat. That community eventually migrated to a Facebook group open to any English doctoral student and then spawned an additional closed group for English PhD candidates. While the Skype chat and Facebook group interaction are beyond the scope of both my dissertation and my IRB approval, this evolution of digital spaces utilized is worth considering and must be accounted for in my proposed definition. This migration demonstrates that shared objectives may broaden or change from completion of a single course to program support or even stronger affective connections.

The strength of these bonds can be enhanced via the third component of online classroom community, shared experiences. Rheingold (2000) noted these experiences might take place in the virtual environment or the physical world. Lave and Wenger (2001) couch these experiences in terms of legitimate peripheral participation aimed at skill acquisition. Gee (2004) discusses these experiences in the context of gaming. And, Rovai and the various Community of Inquiry scholars center these experiences on learning activities. In the simple example of people standing at a bus stop, the shared experience of waiting for a late bus can lead people to interact more frequently; rolling

their eyes and commiserating over the lost time. Similarly, the hours spent together in a class may foster bonding. In addition to time spent working together on projects or engaging in discussion about course content, providing opportunities for class members to socialize and learn more about each other outside the confines of an assignment can boost sense of community. While an instructor should design these circumstances into their syllabus, some students may bring these shared experiences with them to the class. They might have taken classes with peers before. They may have shared experiences within the program (registration woes, favorite professors, etc.) that carry over into the current course setting. While these pre-existing bonds may exist, the instructor should not count on this being the case instead doing all she can to provide opportunities to gain these shared experiences within the confines of her course. Additionally, a well-established student-centered third place can offer additional opportunities for sociability and play and help coalesce these shared experiences thus reinforcing the next factor of my definition.

The fourth component of online classroom community is a shared obligation to each other and to the group at large. A sense of community is not guaranteed in a course; nor is it an automatic function of either physical or virtual presence in an educational setting. Rheingold notes that public discussions must be carried on with “sufficient human feeling” to form “webs of personal relationships” (2000, p. xx). Lave (2001) points out that newcomers are reliant upon oldtimers for skill acquisition while oldtimers are reliant upon newcomers to ensure the continued existence of the Community of Practice. Gee (2004) notes that various types of knowledge, participation and leadership are valued and situate within the context of working together to advance in online games.

Rovai (2002) describes this factor as trust in his model of online classroom community while these elements may be found within the social presence indicators utilized within the Community of Inquiry framework. On a personal level, I have participated in classes where the participants have just been a group. There also are times when I have taken a course with a good friend. But that situation describes a dyadic relationship (or, multiple simultaneous dyadic relationships). Without the emotional connection, we were merely a group of people cohabitating a virtual or physical space. In other instances, I've felt a bond — one I would call “community” — with my classmates. I have been genuinely interested in their projects and areas of research. I have suggested ideas or passed along scholarly articles that I thought would be of help. I've offered encouragement in the hours before the final paper was due. I've demonstrated concern if community members weren't feeling well or had run into personal difficulty.

But, I recognize the sense of community I felt (when I have, indeed, experienced it) is time-bound. In most cases, it lasted only the duration of the course — only as long as participants shared a common purpose. Some of the “closeness” or bond carried over, but it wasn't always enough to keep me in continued contact with my peers. It wasn't enough to sustain the community beyond the final class meeting. This observation tracks closely with elements of Gee's affinity space concept, but the potential exists for deeper connection — particularly if enacted in a student-organized digital third place. Indeed, encouraging such a student-centered virtual space is a worthy goal. While class participants may cooperate and interact regularly because of their shared affinity, a shared obligation to each other and to the community as a whole can be more powerful and productive. Nurturing that shared obligation can help fight feelings of isolation in

part-time or distance-learning students. Decentering the professor-student dyad spurs an increased reliance on classmates. This mutual support and genuine concern delivers both educational benefits in the course and a stronger sense of connection for distance-learning and traditional students. Expressing this emotional scale in mathematical terms:

Group of Classmates < Affinity Space < Community

The fifth and final component of online community is shared identification. Harris (1999) discusses this in terms of broad examples such as discourse communities and speech communities while Lave (2001) places it in the context of midwives, butchers, and recovering alcoholics. Rovai accounts for this element in his dimension of spirit or sense of belonging and this factor may appear within the Community of Inquiry framework in various indicators of social presence. However, perception of community is clearly subjective. Gee identifies the challenge of determining precisely who is in the community and who is not. As a result, he argues for a rejection of the notion of community as a starting place in some cases. But, it is not necessary that a student recognize herself as part of a community for the sense of community to exist. At a minimum, relationships and/or bonds must have formed beyond the typical student-professor dyad. Indeed, as more connections begin to form between students or groups of students, the stronger the potential for community. And, while a specific student may not see himself as a member of a “community,” his classmates may see him as a part of it. Again, this highlights the importance of discussing a “sense of community” rather than falling into the trap of a binary distinction. Like the other components of online community, this element may be present in stronger or lesser degrees. A community may

form without explicit recognition. Naming it as community is not required for it to exist, but the sense of community is likely to be stronger if the acknowledgement is overt.

As can be seen, the various models for community share common aspects. However, they are not all couched in terms of an online educational setting and some decouple the critical element of the digital space from the affective factors. Others ignore the emotional elements altogether in favor of task-oriented skill acquisition. For this reason, I offer a new definition of online classroom community; one that places each of the elements on equal footing. An online classroom community is one that includes shared virtual space(s); a shared objective, task or interest; shared experiences; shared obligation; and shared identification. Although the degree to which each factor is present may vary and I offer no distinct measurement for how much of each element must be present, I believe that this definition can serve as a useful heuristic for assessing the presence of online classroom community.

Summarizing the Analysis

This dissertation sought to answer three key research questions:

- **Question 1:** Do the evaluative frameworks (Community of Inquiry and Rovai's classroom community) confirm an online community exists in the three courses examined?
- **Question 2:** In what ways did microblogging facilitate or hinder community formation in this context?
- **Question 3:** What revisions to our definitions of online classroom community does my research suggest?

Through careful analysis of the findings presented in Chapter 4, I have utilized the Community of Inquiry framework and Rovai's conceptual model to empirically prove the existence of online classroom community in my two case studies. Further, I was able to

demonstrate the ways in which the microblogging tool Twitter helped facilitate development of that sense of online classroom community. In closing, I used the observations derived from the analysis of my data to engage various concepts of community and propose an alternative definition. I will conclude my dissertation by discussing the significance and limitations of my work as well as the possibilities for future research.

CHAPTER 6

CONCLUSION

In the previous chapter I presented detailed analysis of my findings and answered my three research questions. In this concluding chapter I will summarize the ground covered in preceding chapters, highlight the limitations of my study, explain the significance of my dissertation, and conclude by describing potential directions for future research.

I began this dissertation by presenting a common problem encountered by part-time and distance-learning students — a feeling of isolation from the institution and their peers. Students experiencing such alienation are at risk of dropping out. In 2012, more than one in every three students — a total of more than 7.1 million students or 33.5 percent of all students enrolled at degree-granting postsecondary institutions — took at least one course online (Allen and Seaman, 2014, p. 15-16). Thus, this isolation and potential attrition should be of considerable concern to instructors and institutions of higher education. Despite the variety of factors that may come into play when considering attrition, it is critical to consider how the online learning environment can be maximized to support online community formation — a factor that, in turn, could help retain students (*see Rovai, 2002; Rovai & Wighting, 2005; and Xiaojing et al., 2007*).

Kling and Courtright (2003) observe, “many uses of the term *community* are, in fact, aspirational rather than empirically grounded” (225). As a result, it is important to note that we do not know how often community actually develops in classrooms and that assumptions that community exists in many or even most classrooms may be incorrect

(Cook D.L., 1995). While it is possible to maintain community online, it should not be taken for granted (Haythornthwaite et al, 2000). To that end, I introduced three key research questions:

- **Question 1:** Do the evaluative frameworks utilized (Community of Inquiry and Rovai's classroom community) confirm an online community exists in the three courses examined?
- **Question 2:** In what ways did microblogging facilitate or hinder community formation in this context?
- **Question 3:** What revisions to our definition of online classroom community does my research suggest?

The goal of this research study was not to determine whether students learned more or learned more effectively. Rather, I was able to empirically document the existence of online classroom community in two cases studies and demonstrate the viability of the microblogging tool Twitter in facilitating that community development. The focus of my dissertation centered firmly on rhetoric and composition exploring the concept of establishing individual and community identity (ethos); enhancing feelings of connection to an online community (pathos); and proving the ability to form that community online via digitally-mediated words (logos).

In my second chapter I noted that the definition of the term "community" is seldom agreed upon and explored various definitions from across several disciplines. As illustrated throughout my literature review, scholars from various fields see community quite differently. Some eschew the concept or downplay its importance in favor of other constructs such as information ecologies or affinity spaces. Others examine community in different contexts such as the workplace communities of practice or the internet overall. Still other scholars place consideration of the concept of online community in the classroom, but do so from a strictly pedagogical standpoint minimizing or ignoring the rhetorical exigencies. Two of these classroom-based concepts, Rovai's online classroom

community and the Community of Inquiry framework, were discussed in detail as I applied them to my data later in my dissertation study. During the literature review, I also introduced the notion of underlife in the writing classroom — a concept I returned to in my analysis chapter. The concept of underlife proposes that students will find ways to resist institutionally imposed expectations about their identities. They will find ways to rebel and establish their own personae. Underlife is a critical consideration in the digital space as it converges with the concepts of backchannel communications and third place theory.

In my third chapter I outlined my method for collecting and analyzing data in the course of my research study. In answering my three research questions, I employed two established theoretical lenses — Alfred Rovai's online classroom community and the Community of Inquiry framework. My emergent, empirical study is applied research in that it provides an answer for a question of immediate concern in distance learning classrooms. Pragmatic in nature, my mixed-methods approach is focused heavily on praxis or practical application; focused on how an instructor's pedagogy within the English Studies classroom may be better shaped by rhetorical choices that foster a sense of online community. To that end, I conducted case studies of two summer sessions at Old Dominion University (one session comprised of two courses in 2009 and one session comprised of a single course in 2011). Each of these courses required the use of Twitter as a means for discussing course readings. I utilized various web-based software to collect the resulting tweets into two archives — a process that resulted in the collection of 3,822 total tweets. I then coded these tweets for evidence of 19 social presence indicators

(see *Table 4 in Chapter 3*) and reported these findings in detail in Chapter 4 providing various example tweets for each indicator type.

In my fifth chapter I presented my analysis and answered my research questions. I noted early in the chapter that the most common social presence indicator type in each case study was the cohesive category — the indicator type that most directly demonstrates connectedness or community. In the 2009 SDI archive (marked with hashtag #SDI09) 43.93 percent (n=3,612) of the total tweets were cohesive in nature. Similarly, cohesive indicators accounted for 43.40 percent (n=2,549) of the total codes within the 2011 SDI archive (marked with the #ODUSDI hashtag). Additionally I discussed the critical performative nature of using a hashtag. Because a participant must consciously label his or her tweet each time one is composed to ensure it appeared in the filtered stream, he or she labeled not just the text as relevant, but also labeled him- or herself as a member of that classroom community. Even guest participants in the tweetstream had to use the appropriate hashtag to be socially “present” and engage the entire group. Therefore, these guests temporarily became part of the established community. Use of vocatives (addressing a participant by name or Twitter username) and use of group references (such as “us” and “we” or referring to participants in terms of the class or as members of a scholarly community) also enhanced the cohesive nature of the communication. Coding the archives for the 19 indicators of social presence served as a basis for applying both the Community of Inquiry (CoI) framework and Rovai’s concept of online classroom community as a means to answer my first research question.

Empirically Documenting Online Community

Coding the archives for the 19 indicators of social presence allowed me to apply the Community of Inquiry (CoI) framework as a means to empirically document the existence of online community. Social presence manifests itself when learners project themselves socially and emotionally in a CoI (Rourke et al., 1999) and is the extent to which participants in a computer-mediated environment feel affectively connected (Swan & Ice, 2010). Within the CoI framework, social presence is a mediating variable between the other core concepts of teaching presence and cognitive presence (Garrison, Anderson & Archer, 2010; Garrison, Cleveland-Innes & Fung, 2010). I applied 8,222 codes to the #SDI09 archive and 5,873 codes to the #ODUSDI archive.

In light of this high level of social presence, one would expect also to find supportive discourse — an indicator of cognitive presence. High percentages for the affective value indicator (37.13 percent of the total tweets (n=858) for #SDI09 and 42.69 percent (n=645) of the total tweets for #ODUSDI) demonstrate that participants were making judgments and evaluations about the course content and readings. Additionally, the interactive indicators (*see Table 27 in Chapter 4*) demonstrated robust acknowledgment of peer comments, agreement and disagreement with other posts, approval of comments made by others, invitations to join a conversation or expand upon posts, and considerable use of the @reply and retweet functions of Twitter. Thus, the empirical evidence supported the conclusion that a Community of Inquiry did, indeed, exist during the two Summer Doctoral Institutes.

In an effort to further confirm that community existed in the case studies, I also used Rovai's concept of online classroom community as a lens through which to view my

data. Rovai (2002) offers four dimensions as evidence of classroom community: spirit, trust, interaction, and learning. One indicator of spirit — or cohesion — among SDI participants was the number of posts made beyond the course requirements. Similarly, the results of applying the off-topic code support this sense of spirit. These messages were not mandatory responses. Instead, they demonstrated a bond or desire to communicate with peers beyond the scope of specific course requirements for posting. Out of 2,311 total tweets in the #SDI09 data set, 20.55 percent ($n=475$) were off-topic. Out of 1,511 tweets in the #ODUSDI data set, 12.84 percent ($n=194$) were off-topic. As final evidence of spirit in the archive, I examined the use of humor that not only creates common understanding but also generates solidarity and group identity (Baym, 1995). Within the #SDI09 tweet stream, 12.94 percent ($n=299$) utilized humorous elements while 10.46 percent ($n=158$) of the tweets on the #ODUSDI tweets did the same.

Rovai's second element — trust — refers to a feeling that community members can be relied upon. Qualitative examples of this behavior abound within the case study archives. The third dimension of community is interaction. This aspect was demonstrated in multiple ways. The first was evidenced by the high percentage of indicators within each archive that were socio-emotional in nature; interactions directed toward relationships among learners (Hare & Davis, 1994, p. 5). Nearly 31 percent of the total codes in the #SDI09 archive and nearly 37 percent of the total codes in the #ODUSDI archive displayed social or emotional elements. As evidence of Rovai's third element, interaction, @replies and RTs made up nearly half the messages included in the 2009 and 2011 data sets (47.78 percent and 45.34 percent respectively pointing to a high degree of coherence within the tweetstream. The final criteria of learning was demonstrated in the

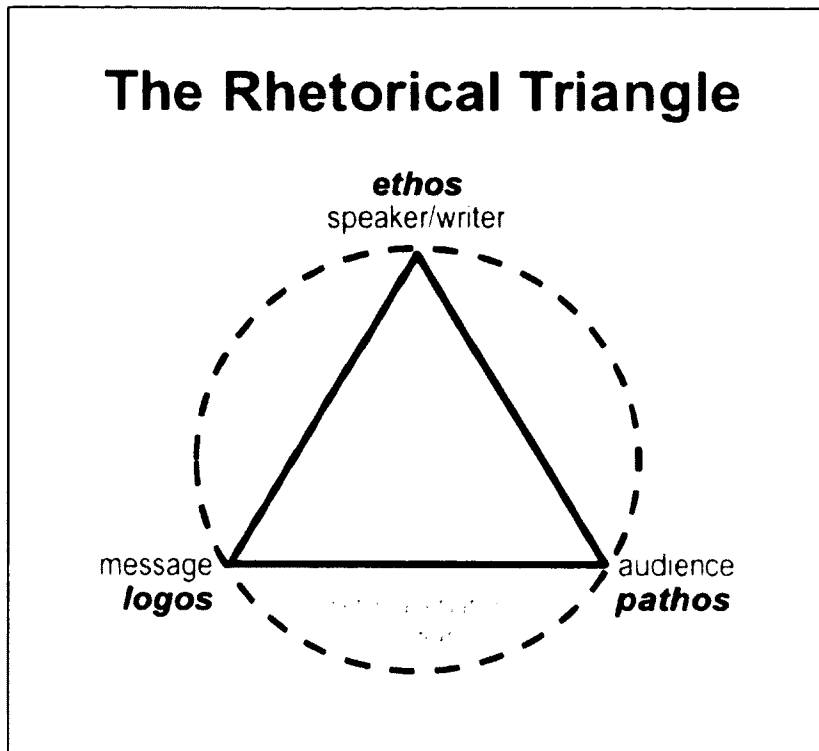
high percentage of tweets in each data set that were “on topic” dealing directly with the readings or subjects being discussed as part of the course syllabus (79.45 percent in the 2009 SDI archive and 87.16 percent in the 2011 SDI archive). Similarly, the high level of employing @replies and retweets pointed to a collaborative approach to knowledge construction within the group. Additionally, students also began to make connections across courses and with readings completed as part of an outside doctoral reading group hosted by the English department. Thus my analysis of the case studies demonstrated that Rovai’s concept of online classroom community could be empirically documented. Since I was able to empirically demonstrate the existence of community by applying two different theoretical frameworks to my social media archives, I turned my attention to showing the microblogging tool Twitter’s capability for facilitating that sense of online community.

Twitter as a Facilitator of Online Community

As my analysis of the archive and consideration of the social software itself demonstrated, Twitter can facilitate the formation of online community. Twitter makes this possible by affording a change in the audience and the register of the message itself; a change in the rhetorical situation (*See Figure 13*). One of the key reasons for this is Twitter’s ability to support close transactional distance — an environment requiring low instructor control while enabling high levels of student dialogue. Although non-verbal cues are not available via CMC, review of the tweet archives revealed that instructors and classmates engaged in other text-based equivalents of verbal cues using the Twitter software. Additionally, analysis of the #SDI09 archive revealed a high level of dialogue

— nearly 50 percent @replies or RTs (47.78 percent in #SDI09 and 45.34 percent in #ODUSDI) — in an asynchronous social networking environment characterized by low levels of structure (especially low structure in comparison to online discussion forum tools). It is important to note that @replies and retweets are specific affordances of Twitter and therefore help support its viability for facilitating online community. Despite Twitter's 140-character limit for microblog posts, tweets can support a high level of social presence in compact text-based communications. As I noted earlier, I applied 8,221 codes in the #SDI09 archive (over 2,311 tweets total) or an average of 3.56 indicator types per tweet and 5,873 codes in the #ODUSDI archive (over 1,511 tweets total) or an average of 3.89 indicator types per tweet. The greatest number of indicators in a single tweet in the #SDI09 archive was 9 (which occurred in three different tweets) as compared to 10 indicators in a single tweet in the #ODUSDI archive.

Figure 13: Elements of the Rhetorical Situation



Twitter’s ability to function as a digital Burkean Parlor also maximizes its potential to facilitate the development of online classroom community. Because it allows for the convergence of the personal, professional and academic lives and interests of its users, Twitter can provide a virtual venue for Dunlap and Lowenthal’s “just-in-time, and sometimes playful, interactions” (2009, p. 19). Precisely because Twitter can support a student’s various interests — whether academic or personal — she is more inclined to spend more time utilizing the tool; spend more time living in the virtual space. This provides not only the opportunity for academic colleagues to learn more about her interests and life outside the classroom, it also provides her the opportunity to construct the identity she wants to present. Because it is not owned by the instructor and centered

on official academic credentials, Twitter (as a digital third place) allows the student to exert her digital underlife behaviors and distance herself from expected roles while forging a stronger sense of community with her peers. It is precisely because Twitter as a virtual environment offers such tremendous potential that I was led to propose a new definition for online classroom community that accounts for digital space in addition to affective components.

An Alternative Definition of Online Classroom Community

Although many of the existing concepts of online community encompassed elements I deemed important, I did not find one that placed the appropriate level of emphasis and the correct combination of factors. Thus, I developed an alternative definition of online classroom community that could serve a heuristic function. An online classroom community is comprised of five key features:

- shared virtual space(s) in which to exist and interact;
- shared objectives, tasks, or interests among participants;
- shared experiences that provide an opportunity to bond;
- shared obligation to each other and the group as a whole; and
- shared identification as a member of the community.

Each of these five elements may be present in lesser or greater degrees than the others, but the strong presence of all elements points to a higher likelihood of the existence of a sense of online community. However, it is important to be mindful that each student may have a different perception about the existence (or absence) of this bond.

Shared virtual space(s) may be made possible by one or more social media tools that allow the space to serve as frontchannel, backchannel, or both. Students also may create their own virtual companion spaces to established “official” digital academic ones.

These alternate spaces better allow them to enact the digital underlife behaviors that ensure they can create their own online persona. Whatever their genesis, these spaces must be built around key characteristics — namely that the digital environment allows participants to project social presence. A virtual academic space that seeks to enhance a sense of online community also must allow for a decentering of student/teacher dyad instead enabling robust peer-to-peer interaction in both “official” class-related tasks and via informal, more social situations. In its most effective form, such a digital environment might function as a digital third place.

The second element — a shared objective, task or interest — focuses the community. A group of people cannot simply be assembled. It must have some unified purpose or interest. That interest may evolve. In fact, it should be encouraged to evolve if the desire is to extend the duration for which online classroom community exists. A sense of community need not persist indefinitely. Indeed, it is highly unlikely that it ever would. However, the third component of shared experiences may strengthen the affective connection experienced for however long the community does exist. Bolstered by opportunities for sociability and play — hallmarks of an effective third place — these shared experiences reinforce the fourth factor of my definition. A shared obligation to each other and the group as a whole is not merely a duty. It is an expression of genuine concern. This obligation may be evident solely within the confines of the classroom (for example, suggesting approaches for research or passing along scholarly articles of interest) or such affective connections may extend into the personal sphere as well.

My fifth and final element of online classroom community is shared identification. Perception of community is clearly subjective. But, it is not necessary that

a student recognize herself as part of a community for the sense of community to exist. At a minimum, relationships and/or bonds must have formed beyond the typical student-professor dyad. Indeed, as more connections begin to form between students or groups of students, the stronger the potential for community. Similarly, a community may form without explicit recognition. Naming it as community is not required for it to exist, but the sense of community is likely to be stronger if the acknowledgement is overt.

Significance of My Findings

While I consider the proposal of an alternative definition for online classroom community the most profound contribution of my research study, I believe the findings conveyed in this dissertation offer additional significant contributions. For example, despite its widespread use in the field of online education, the Community of Inquiry framework had not yet been applied to a social-media-based learning environment such as Twitter. Given the proliferation of social media technologies and the ubiquity of smart phones, my demonstration that a Community of Inquiry can be supported by Twitter provides an additional springboard for ensuring this theory remains relevant in the coming years.

Extensive analysis of my case studies also has positioned me to offer some rhetorically grounded pedagogical recommendations for those instructors considering using a social media component in their online course offerings. I begin with some key questions and concerns for teachers:

- Will you establish an “official” social media venue for the purpose of fostering online classroom community? Will you discuss and encourage the creation of a student-run backchannel and describe various means for sustaining such a space?

- ❑ Can you foster a low-structure digital environment where students direct discussion and assist each other with minimal instructor intervention?
- ❑ What social media tool can be used that allows students to maintain separation between their academic online identity and their social online persona should they desire it? Does it also allow them to engage in digital underlife activities that provide opportunities to actively construct their own online persona free of institutional expectations?
- ❑ Have you allocated time in your course to review the selected social media environments and teach students how to use the necessary digital tools to ensure they master the skills necessary to participate?

If an instructor elects to establish a social-media-based classroom space for discussion, she should consider using Twitter or another social media tool with similar affordances that can function with low levels of instructor control while encouraging high levels of student dialogue. If possible, she should select a tool that capitalizes on the convergence of a student's academic and personal interests. Although a student may elect to minimize underlife practices and maintain a high degree of privacy, choosing a social media tool that stands at the digital crossroads of the student's interest increases the likelihood that he will spend more time in the space and enhances the prospects of online classroom community formation. Additionally, such a digital tool provides a less formal space and requires a less formal academic register — thus changing the rhetorical situation found in typical learning management courseware such as Blackboard. The power of the convergence of backchannel, digital underlife activities, and the virtual third place should not be underestimated in terms of facilitating online community. Thus, I strongly suggest instructors encourage the formation of separate backchannel digital spaces selected by students to ensure that such an environment easily becomes a part of their everyday lives.

Should an instructor elect to utilize Twitter or a similar tool as part of a course, I advise that participation not be made mandatory or be graded. While such required

participation may make sense in terms of ensuring participation and offer an opportunity for assigning another grade, such a mandate may not serve an effective rhetorical purpose instead dampening the sense of community and hindering digital underlife activities.

While online classroom community is possible to sustain in a course where tweeting is required (as evidenced by my case studies), my data demonstrates that students continued to microblog even when such activity was no longer required. I believe that this tweeting behavior continued because students found a social media space that fit within their daily routine. Therefore, purposefully selecting (or, better yet, allowing the students to select) such an environment would seem likely to spur participation without a course mandate.

Further, I suggest that instructors build in collaborative participation opportunities or integrate breaks into lesson plans to allow time to scan the social media channel for questions or contributions. I also recommend that instructors use Twitter (or a similar social media platform) to extend the lecture hall or classroom. A public digital front- or backchannel allows those not physically present to experience the class and provides an opportunity for the message to be passed along and the discussion to live on. Social media also allows an instructor to invite relevant scholars to join class discussions via this digital venue. It is not necessary that the use of such a digital space be synchronous. The backchannel could become a digital frontchannel between class sessions allowing for continued discourse and social exchange.

My research study also demonstrated another significant finding. Far from being merely digital ephemera, the corpus of tweets archived by Twitter and the Library of Congress serve as a rich field for research. Unfortunately, that field remains largely off-limits to scholars. As discussed in Chapter 3, Twitter's Terms of Service prohibit the

redistribution of tweets. This impacts how third-party applications can be utilized to collect information (for example, the need to migrate from TwapperKeeper.com to the yourTwapperKeeper software run on an individual's cloud server). In fact, in perhaps its strictest interpretation, Twitter's Terms of Service might prohibit the inclusion of tweets in this very dissertation that extols the social media platform's utility as a facilitator of online classroom community. At a minimum, such restrictions prevent me from sharing the two archives I collected (#SDI09 and #ODUSDI) with another scholar for her to study on her own. This could be quite a loss as my focused analysis of these tweet archives for the purpose of my dissertation research has convinced me that they might also be rife with possibilities for linguistic study or any number of other disciplinary lenses.

Twitter provides its ongoing archive of tweets to the Library of Congress — and has been doing so for years. However, that corpus has yet to be made publicly available. Based on various reports, I suspect this is largely a matter of infrastructure and staffing to provide access to the Twitter archive. Some reports have hinted at the possibility that scholars could apply for access but that only portions of the archive would be made available; portions dealing with “significant” events such as the Arab Spring or the election of the United States' first African-American president. While clearly important objects of study, I contend that these geo-political happenings are not the only worthy areas of focus. While I have little influence on uprisings in the Middle East, I am well positioned to examine the possibility of facilitating enhanced online classroom community. Having done so, my findings could benefit instructors across the country. My study cannot be the only case worthy of scrutiny within the context of tweeted

communication. To that end, I call on Twitter, the Library of Congress, and other relevant bodies (such as the National Endowment for the Humanities) to find ways to make the extensive tweet archive more readily available to scholars. Having discussed some of the contributions of my dissertation, it is now time to turn my attention to the limitations of my research study.

Limitations of My Study

In addition to those limits discussed in Chapter 3, I have determined some additional limitations to my study that must be considered. First, my study was not designed for inter-rater reliability. While the data in each archive were coded in three separate passes, this coding was completed entirely by me. Engaging others to review the data and apply my coding strategy to ensure similar social presence indicator results would bolster the reliability of my study. It also bears repeating that, by definition, my archives include only appropriately hashtagged tweets. This means some messages sent during the course of the class are missing from my analysis. Similarly, I may be missing the experiences of those students less comfortable with technology as they may not have participated as robustly in the tweetstream as their peers. Another limitation was my inability to map the existing social connections among classmates in each Summer Doctoral Institute. Because of the emergent nature of my study, I was not able to find out how many people already knew each other before the class or who had previously participated in a class with whom. Such information would be not only interesting, but also helpful in diagramming relationships and better understanding the pre-existence of affective bonds and how community formed (or increased or decreased) throughout the

course of my case studies. Additionally, my data is limited to the digital trace (tweets) collected via TwapperKeeper.com and my yourTwapperKeeper cloud server. While the textual archive may “speak,” my study does not provide the SDI participants an opportunity to speak for themselves about these notions of online classroom community. These limitations provide an obvious path for future research.

Future Areas for Research

Each of these limitations provides an opportunity to re-engage my data and conduct further studies. I will now discuss some additional areas for potential research. I could pair transcript analysis of a future course with surveys and/or interviews of class participants to compare the textual evidence to the perceived sense of online classroom community. I also could revisit my existing data by coding for magnitude in each social presence indicator rather than just a binary presence or absence analysis. This would be a worthwhile endeavor as my familiarity with the data suggests that such a review would demonstrate even stronger evidence of social presence. Such a magnitude analysis also would allow for a more direct comparison to Swan’s 2002 study results. Another area for exploration would be comparing my case studies to a course that utilized a Blackboard discussion board forum. This would provide an opportunity for direct comparison between the LMS and social-media-based environments.

In a different vein, my dissertation caused me to consider a social media tool that served both front- and backchannel functions. An additional area of inquiry would be to further consider this concept of oscillating front- and backchannel purposes. How does this type of oscillation impact the digital space and its value to participants — particularly

in terms of digital underlife behaviors and its ability to serve as a third place? Should we consider a name for such an oscillating digital space — an all-channel? Finally, I believe my definition of online classroom community might have broader applicability. While my dissertation was clearly focused on the classroom, I would be interested in exploring whether my five criteria could be applied to an online community in general with equal efficacy. Clearly, this dissertation (as is true of all dissertations) marks a beginning of my scholarly research journey — not an end.

Conclusion

Five years ago, I experienced something new and powerful; something I later came to recognize anecdotally as “community.” Through my research study and the writing of this dissertation, I can demonstrate empirically that my experience was true. I had, indeed, belonged to an online classroom community — one empowered by the microblogging tool, Twitter. As I mentioned in Chapter 1, Brooke (1999) suggests that “the task of the next ten years will be to imagine programs which increase the self’s possible roles, widening the ways literacy is used in the celebration and establishment of viable sustainable communities” (p.241). Some 15 years later, I hope the work of my dissertation has demonstrated that we can continue to achieve Brooke’s goal. The continued growth of online course enrollments and rapid evolution of social media software will provide a plethora of opportunities for us to do so.

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APPENDIX A

SAMPLE SOCIAL PRESENCE INDICATOR

CODING SPREADSHEET EXCERPTS

Archive: #SDI09 • TALLIES

Tweet #	Tweet Text	P	E	Var	H	SD	G&S	var	GR	#	SS	CR	OT	Atk	AE	App	PA	R?	Total	Only #	Alt #	Notes
2424714101	@cristinanoh #sdi09 I'm with U with the Twitter It's cool. but I don't feel we're going quite as deep because of that dang 140 thing			1	1					1		1	1						7		1	H = "that dang 140 thing"
2424729010	#SDI09 Those most deeply immersed in a revolution the least aware of its dynamic pg 199 Thinking about digital natives.					1				1									2			SD = "thinking about"
2424730646	@cristinanoh #sdi09 Hope we can go to Bb's Discussion Bd the last 2 weeks of class for deeper & trackable responses. (Did I really say th			1						1		1							4		1	
2424739955	#SDI09 Previous Tweet referred to McLuhan. Sorry!		1							1									2			
2424747529	@cristinanoh #sdi09 Dang that 140 character thing!		1	1						1			1	1					6		1	Ack = ref to "that dang 140 thing"
2424748076	#sdi09 Is @ebensen65 not multitasking bc of what McLuhan says p 199 "New tech possesses the power to hypnotize bc it isolates the senses"									1						1			2			
2424780693	@cristinanoh Yes! #sdi09 Digital natives are least aware of the tech dynamic McLuhan									1					1				3			
2424787999	@mimodu thx that does help. amt we always entranced? Does it take a screen 2 make us not notice? Is it the object or wht it does? #SDI09									1						1	1		4			
2424802619	@dcook020 #sdi09 Being a devil's advocate here Paper cuts don't go deep, but we sure notice 'em! :)	1			1					1	1								5		1	
2424837908	@mimodu #sdi09 not sure my senses are isolated. I think I am using sight, sound, and touch to tweet			1		1				1									4		1	SD = "not sure"
2424846046	#SDI09 I think I struggle with conceptualizing media/new media. How far do we go? How new do we have to be? Does newer mean more power?					1				1						1			3			
2424856807	#SDI09 What counts as a medium?									1							1		2			
2424912289	@ebensen65 #sdi09 Perhaps McLuhan was driving not just at the senses but the focusing to the exclusion of other stimulus									1							1	1	3			I = perhaps (inviting response)
2424919703	@mimodu #sdi09 Yes. I guess Twitter hypnotizes us, causing us to focus on only one medium (isolates us) (?)					1				1	1				1	1	1	6		1	I = (?). SD = I guess	

Archive: #SDI09 • TALLIES

Tweet ID	Tweet Text	P	E	Val	H	SC	G&S	V	QR	#	SS	CR	OT	Atk	A/D	App	PA	RT	Total	Only #	All Incls
3079317942	@crstinanoh more compelling was the Rebellion. wrt body image. community & social capital online #SDI09 http://bit.ly/FRxgMrt @LizaPot									1							1	1	3		
3088268755	Those in SDI Robot Chicken as fanfic and welder of Intertextuality Thoughts? #sdi09				1				1	1							1		4		1
3088704808	@tenzanoiiron #sdi09 Robot Chicken as fanfic & intertextuality - HAHAAHAHA!	1			1					1								1	4		1
3090334150	#sdi09 interesting interview RT @henryjenkins http://bit.ly/4FLL9I talk with the MIT Enterprise Forum about deliberation vs. aggregation.			1				1		1			1					1	5		1
3099136122	#sdi09 Morville ch6- Labeling-more of an issue the more items brought in2 the same system. Must all systems necessarily converge in future?									1							1		2		
3099146119	#sdi09 morville ch5 Stats on web user behavior was interesting. 5X more likely to buy if found a website and NOT through a banner ad (112).	1		1						1									3		
3099207461	#sdi09 Jenkins -251-I like Doctorow's "adhocracy" term. but wonder about sustainability Will ppl in future only want 2 pay 4 tang.			1		1				1							1		4		1
3099240421	#sdi09 Jenkins re Askwith & TV downloads- 253 "Direct downloads will give fans of endangered shows the chance to vote w/ wallets"									1									1	1	
3102205217	Am glad to see Jenkins address 2008 election in Afterword #SDI09 Demonstrates difficulty for publishing to keep up w/ changes!		1	1						1									3		
3102213145	How can we "map" that whose ecology rapidly changes. #SDI09 A challenge for scholars!			1					1	1						1			4		1
3102217856	Answer to my own question. These changes leave traces #SDI09			1						1			1						3		1
3102751880	Jenkins p275 YouTube describd as spreadabl media which "comes w/ it a greater sense of agency" participatory culture at its be			1						1									2		
3102793352	Jenkins defending his foregrounding of fan cultures may not represent whole population but show cultural trends that affect society #SDI09									1									1	1	

Notes

Val = like, SD = wonder

No Val b/c may be summarizing author

No Val b/c may be summarizing author

Archive: #SDI09 • TALLIES

Tweet ID	Tweet Text	P	E	Var	H	SD	G&S	Voc	GR	#	SS	CR	DT	Ack	AG	App	PA	RT	Ret #	Only #	Av. Ret		
4683400839	Folks from #sdi09 will remember @bmcneily as our class stalker. Clearly, it was research (jk - we enjoyed the backchnl). #sigdoc09 #pwsn			1	1			1	1	1			1						6				
4700074587	@warmick We've used www.twapperkeeper.com See #SDI09 or #PWSM for an example								1	1			1					1	3				
4852593853	#SDI09 is: http://is.gd/4iv5o - Summer Doctoral Institute 2009 (Old Dominion University)								1	1			1						3				
5221902957	@LizaPoits I had a flashback from the #SDI09 artifact exercise. Only from your Twitpic could I pick out the location of you & @gosssettphd ;)	1				1		1	1	1			1					1	7		1		
TWAPPER KEEPER TOTAL		213	153	699	269	719	28	337	306	2071	68	91	478	414	238	331	411	168	621	179	608	139	971
PERCENTAGE		9.22%	6.76%	37.13%	12.94%	31.87%	1.21%	14.10%	13.25%	100.00%	3.00%	3.6%	20.59%	17.91%	9.69%	6.97%	17.70%	7.07%	48.47%	7.25%	8.91%	42.85%	

Notes

red = incomplete tweet in archive downloaded.
 236 total INC tweets = 10.2% of archive
 purple = feedback tweets re Twitter use during class
 orange = supportive banter
 grey = meets criteria but not counted b/c another code used (generally Ack or Voc)

Average # of Retweets	3.00
Median	3.00
Mode	3.00
Standard Deviation	1.48

APPENDIX B

SOCIAL PRESENCE INDICATOR CODING TABLE

		#SDI09		#ODUSDI	
		Number of Codes	Percentage of Total Tweets (2,311)	Number of Codes	Percentage of Total Tweets (1,511)
Affective Indicators	Paralanguage	213	9.22%	129	8.54%
	Emotion	132	5.76%	107	7.08%
	Value	858	37.13%	645	42.69%
	Humor	299	12.94%	158	10.46%
	Self-Disclosure	718	31.07	753	49.83%
	Subtotal:	2,220	--	1,792	--
	% of Total Codes (below):	--	27.00	--	30.51
Cohesive Indicators	Greetings & Salutations	28	1.21%	12	0.79%
	Vocatives	327	14.15%	456	30.18%
	Group Reference	305	13.20%	343	22.70%
	*Hashtag	2,311	100.00%	1,511	100.00%
	Social Sharing	85	3.68%	27	1.79%
	Course Reflection	81	3.50%	6	0.40%
	*Off-Topic	475	20.55%	194	12.84%
	Subtotal:	3,612	--	2,549	--
	% of Total Codes (below):	--	43.93	--	43.40
Interactive Indicators	Acknowledgment	414	17.91%	197	13.04%
	Agree/Disagree	136	5.88%	167	11.05%
	Approval	161	6.90%	94	6.22%
	Invitation	411	17.78%	219	14.49%
	Personal Advice	163	7.05%	170	11.25%
	*@reply	934	40.42%	391	25.88%
	*Retweet	170	7.36%	294	19.46%
	Subtotal:	2,389	--	1,532	--
	% of Total Codes (below):	--	29.06	--	26.09

*Emergent codes in Rhodes 2014 dissertation study noted with asterisk

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Education

- **Ph.D. (English/Professional Writing & New Media)**, Old Dominion University, Norfolk, VA.
- **M.A. English (Professional Writing/Rhetoric)**, 2003. Old Dominion University, Norfolk, VA.
- **Virginia Teaching Certificate in English (additional endorsement in journalism)**, 1997 to 2018. Virginia Wesleyan College, Adult Secondary Education Program. Norfolk, VA.
- **B.S. Communication, minor in Biology**, 1993. James Madison University, Harrisonburg, VA.

Presentations

- **Build It and They Will Come? Searching for Community in Social Media Spaces**, Computers & Writing Conference, June 2013 (Frostburg, MD).
- **Moderation or Presentation? Using Twitter Backchannel for more Effective Conference Presentations**, Computers & Writing Conference, May 2010 (West Lafayette, IN).
- **Tweetagogy: Building Community in 140 Characters or Less**, Association of Teachers of Technical Writing Conference, March 2010 (Louisville, KY).
- **Is a Pixel Worth A Thousand Words? Why Graduate Students Avoid New Media & How Professors Can Encourage Them**, Center for Learning Technologies at Old Dominion University, May 2008 (Norfolk, VA).