The role of micro blogs in workplace learning: the #lrnchat phenomenon

Christina A. Ritchie

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THE ROLE OF MICRO BLOGS IN WORKPLACE LEARNING:
THE #LRNCHAT PHENOMENON

A dissertation submitted in partial satisfaction
of the requirements for the degree of
Doctor of Education in Organizational Leadership

By
Christina A. Ritchie
May, 2014

Linda Polin, Ph.D. – Dissertation Chairperson
This dissertation, written by

Christina A. Ritchie

under the guidance of a faculty committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements of

DOCTOR OF EDUCATION

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DEDICATION

To my family:

Ann and David Ritchie; Drew, Heidi, Ethan, and Zack Ritchie;

Lisa, Mike, Nick, and Rachel Dionisio –

You have been my strength to continue through this journey.

When I was ready to give up you gave me courage.

“Thank you” will never completely capture what your support has meant to me.

I love you all!
ACKNOWLEDGEMENTS

First and foremost, I would like to extend a heartfelt thanks to the participants and facilitators of #lrnchat. Your willingness to participate and engage made this study possible. Writing this dissertation has been a journey of learning unlike any other. Fortunately, I was blessed to have guides to assist me in finding my way through the challenges. My lead guide was my advisor, Dr. Linda Polin. Without her patience—and at times impatience—I would not have made it to the finish line. Dr. Polin taught me to trust my own thought process and push through the challenges by taking the first steps. Thank you does not begin to express the gratitude that I have for her tutelage. My other guides have been Drs. Schmieder-Ramirez and Madjidi. Both of these individuals have been leaders and guides throughout the doctoral program. I will never forget the examples of leadership and support in the classroom in both Los Angeles and in China. Thank you both!

Throughout the EDOL program, I was blessed to have a group of colleagues that became my closest friends and inspiration through this process. Together we took turns cheering on, coaching, comforting and pushing each other. Without the three of you, I am not sure if I would have made it through. Mike Wocjchowski, Kristen Huyck, and Dean McCall; you made the EDOL program fun! I sincerely looked forward to coffee and dinner with you each and every Wednesday. I love sharing ideas with and learning from all of you. Our discussions on coursework and life have made an everlasting impact on me. Thank you!

Finally, I want to thank my partner. Ellen Rubach; your support and encouragement helped me cross this finish line. I am so blessed to be able to build a life with you. Thank you for believing in me and continuing to encourage me when I questioned my abilities. You are my everything!
VITA

EDUCATION

Doctorate in Organizational Leadership - Pepperdine University, Malibu, CA
Masters of Business Administration - Colorado State University, Fort Collins, CO
MS, Student Affairs in Higher Education - Colorado State University, Fort Collins, CO
BA, Psychology, Business Administration - University of Denver, Denver, CO

PROFESSIONAL EXPERIENCE

Ancora Incorporated dba National Temp Services, Scottsdale, AZ (2012 – Present)
Owner and Chief Executive Officer
Built and grew a full service staffing agency. Created an employee centric culture to support long term assignment completion for clients. Marketing company across three primary segments: call centers, manufacturing operations and construction skilled trades. Placed employees in three states exceeding client expectations on attentiveness and quality placements. During the first year of business tripled revenue.

Clear Channel Outdoor, Phoenix, AZ (2011-2012)
Vice President, Learning and Development
Serve as the senior level thought leader on learning and development initiatives. Support software implementations through change management, communications and learning initiatives. Develop the sales management role across the country through coupling organizational strategic programs along with the leadership and coaching skill building sessions to assist in the facilitation of the program. Structure and facilitate needs analysis for position definition and talent management development. Assist different functional departments in addressing various learning needs.

VCA Animal Hospitals, Los Angeles, CA (2004-2011)
Vice President, Training (2009-2011)
Vice President, Training and Recruiting (2008-2009)
Assistant Vice President, Training and Recruiting (2007-2008)
Director, Training (2004-2007)
Apply dynamic strategic planning, prioritization, and project management skills toward consistently achieving critical deadlines while maintaining high quality standards in establishing a training department and restructuring the recruiting department. Spearhead all facets of companywide training initiatives utilizing various delivery methodologies to over 520 locations and 40 states across six different business units. Exhibit strong leadership abilities in directing all facets of day-to-day operations for the recruiting department, including conference booth management, marketing development, applicant tracking system maintenance, employee referral program management, and career website updates. Conduct comprehensive research and analysis and utilize findings to prepared curricula for each position group within the animal hospital division.

**Training Coordinator**
Led a cross-functional team with accountability for spearheading a leadership training program for future hospital and field leaders. Designed and developed instructor led client service training program. Facilitated Train-The-Trainer program for 30 trainers delivering training to over 2,000 employees and supported roll out to 68 locations across the country. Created a “mystery shopping” program to measure results of client service phone training.

Friendship Hospital for Animals, Fort Collins, CO (2002-2003)

**Hospital Manager**
Boosted productivity and performance by building collaborative relationships with employees, establishing a positive work environment, and spearheading all aspects of marketing, finance, and human resources administration. Cost-effectively allocated and administered the budget to maximize use of resources while controlling costs.

Career Center, Colorado State University, Fort Collins, CO (2002)

**Temporary Career Counselor** for an employee on medical leave.

Accenture (Formerly Andersen Consulting), Denver, CO (2000-2001)

**Senior Analyst**
Successfully evaluated data and used findings to establish a multi-faceted organizational structure including overseeing all aspects of job definition, staffing level assessments, and translation of organizational strategies. Innovatively designed and implemented executive-level communication plan and materials.

Housing and Food Services, Colorado State University, Fort Collins, CO (1995-1998)

**Complex Coordinator (1997 -1998)**
**Hall Director (1995-1997)**
ABSTRACT

This study investigated the role of the social media niche of micro blogs in workplace learning. Micro blogs consist of messages containing fewer than 140 characters that are sent to a broad audience. Using the #lrnchat group as a case study, a mixed method study was designed. Through a survey followed by in depth interviews, the researcher sought to understand how micro blogs are being used currently to support workplace learning and whether the micro blog group functioned as a community of practice.

Once participants discovered #lrnchat, they had a high level of engagement with the group. The information shared in the group is of value in the workplace to participants and is used on a weekly basis. When compared to other sources of professional development, the #lrnchat group ranked high in terms of the timeliness of responses received and the quality of information provided by the group. During the interview, participants were asked about best practices in participating in a micro blog group for the purpose of learning. The responses included being selective on who they follow on the micro blog and avoiding trying to read everything that comes through on the feed. When determining whom to follow on a micro blog, a user is determining what kind and quality of information to add to their individual feed. For this reason it is important to be selective on what streams one chooses to follow. Also, when consuming information from the feed, it is important to take in what is possible and not try to read everything as it becomes overwhelming and loses value. The final finding was that measurements of open communication, shared vocabulary, recalling previous lessons, and learning from one another all indicated at some level that the #lrnchat group functions as a community of practice.
Chapter 1: Introduction

Social media—a term that did not exist prior to the year 2000—is now shaping how individuals interact with the world on a daily and even a minute-by-minute basis. News and information that used to be shared with the world through the television, newspaper, or radio is now accessible minutes after it happens. If one were looking for a new restaurant or a good dry cleaner in the past, one would ask friends and neighbors; now, one can see how hundreds of people’s ratings of different businesses within seconds. This generation’s grandparents sent letters through the U.S. Postal Service to keep in touch with friends and families in other towns. Now, people can share life updates with hundreds of people across the globe within seconds. Information is available to everyone at a faster rate than ever before.

Social media now occupies an important place in people’s lives, whether or not they interact with it directly. The Invisible Children organization and their Kony 2012 campaign illustrated this point beautifully. On Tuesday, March 6, 2012, Invisible Children launched a 30-minute video about the leader of Uganda’s Lord’s Resistance Army, Joseph Kony. The video called for Americans to contribute money to oust this “indicted war criminal” (Ringel Morris, Counts, Roseway, Hoff, & Schwarz, 2012, p. 3). Using social media to distribute this message, over 2 days, the video was viewed 32 million times. Prior to the launch of this campaign, few people had heard of Joseph Kony. The use of social media to distribute this powerful message allowed it to reach individuals that interact with social media regularly and caused it to spread to the television news, newspapers, and news magazines, touching everyone accessing news from any media. As the Kony campaign indicates, social media can have a powerful impact on individuals, communities, and the world.
Social media has become a prominent way to share information. Some people only see social media as a nuisance or a waste of time (Cormode & Krishnamurthy, 2008; Qiu et al., 2010), however, its inherent characteristics may make it a viable professional development tool. Social network sites are defined as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. (Boyd & Ellison, 2008, p. 211)

These social connection sites allow members to connect with friends and colleagues and follow their lives or careers and can be used to facilitate networking.

One such type of social network is a blog. The term blog refers to a website that allows the author to post his/her opinion or share information on topics of their choice in a type of online journal (Andersen, 2007). Blogs provide individuals a stage on which to share their thoughts and ideas on virtually any topic. Building upon the idea of a blog, micro blogs were developed subsequently. With their character limit and tagging function, micro blogs have a unique niche that may be able to provide value as a medium for professional development.

In the past, workplace education typically came in the form of a college course, a continuing education seminar provided by an employer, a professional conference, a training vendor, or a book. However, as technology has integrated with human life, it has also enhanced how people get information and therefore how they learn. People now have at their fingertips a wealth of information and a multitude of ways to access this information. From search engines to Apple iPhone’s Siri, to social media and beyond, these technologies provide a means to search through information efficiently and create personalized learning opportunities.
Web 2.0 and Social Networks

The Internet began as a unidirectional dissemination of information, much like a traditional newspaper, except on a screen and with a much faster dissemination rate. With the advent of Web 2.0, the Internet allowed the free exchange of information. Rather than having to host one’s own website in order to post information to the Internet, Web 2.0 added a level of functionality to the web that allowed a general end user to post information on a site and have that information be shared with the masses (Alexander, 2006).

[T]he essential difference between Web 1.0 and Web 2.0 is that content creators were few in Web 1.0 with the vast majority of users simply acting as consumers of content, while any participant can be a content creator in Web 2.0 and numerous technological aids have been created to maximize the potential for content creation. The democratic nature of Web 2.0 is exemplified by creations of large number of niche groups (collections of friends) who can exchange content of any kind (text, audio, video) and tag, comment, and link to both intra-group and extra-group “pages.” (Cormode & Krishnamurthy, 2008, p. 1)

Companies began to utilize this additional functionality and set up defined online communities with specific parameters. One such example of a niche group is Facebook, which utilized the additional functionality provided by Web 2.0 and created a format through which each person is able to create a personal profile and share the profile with a selected group of people.

The segmenting of people with whom information is shared and the way in which information is shared has prompted a variety of applications to address different needs. These applications range from the dissemination of photographs to videos to essays to combinations of all of these, and the vehicles for dissemination of information continue to evolve. Due to the
exchange of information and ideas through these applications, they have been termed social networks, which have become their own segment of applications utilizing the Web 2.0 ability to exchange information (Andersen, 2007; Boyd & Ellison, 2008; Cormode & Krishnamurthy, 2008).

Social network applications such as MySpace, Facebook, LinkedIn, and Twitter, among others have created a vehicle for interpersonal interaction and sharing of ideas (Alexander, 2006). Social networks, also called social media, have provided a new way for sharing information and learning. “Webs 2.0’s lowered barrier to entry may influence a variety of cultural forms with powerful implications for education, from storytelling to classroom teaching to individual learning” (p. 32). Social media is proving to be a viable and prolific method for disseminating information. This open exchange of information was one of the elements that Tim O’Reilly (2005), founder and CEO of O’Reilly which is known for publishing technology manuals, used to differentiate Web 2.0 from Web 1.0. Now, organizations need to evaluate how social media can be used to deliver value to the workplace.

Many social networks focus on a niche market (Cormode & Krishnamurthy, 2008). For example, LinkedIn has focused on professional networking and Facebook is based on connecting friends. Examining all social networks and how they may add value to an organization is a daunting task that exceeds the scope of this study. For the purpose of this discussion, a small segment of social networks has been selected: micro blogs.

Micro Blogs

Micro blogs are the grandchildren of what were once called web logs. The terms web and log were then merged to form a new word, blog. Blogs became popular vehicles for sharing ideas and writings via the web. Micro blogs are short-format blogs limited to 140 characters, hence the
name *micro blog*. The purpose of this form of social media was to share information in short bursts. One of the primary differences between a micro blog and other social networks is the breadth of people that can access this information; micro blogs are not constrained to predefined audiences, such as mutually accepted connections, but rather broadcast to the micro blog population at large. It should be noted that some micro blogs do exist within other applications and as such limit their broadcasting to others that share use of the application. This is typically found in enterprise applications, such as SalesForce.com, that are used within a single organization behind a firewall to ensure privacy, hence the constraints.

Micro blogs function in a manner that is different from all other social networks. In addition to limiting the number of characters used to 140, the micro blog allows anyone access to the information shared. This creates an environment that allows micro blog users to read what others have written without being visible to the authors. In contrast, if the micro blog user wishes to receive all of the commentary made by a specific author, he/she can *follow* that person. Consuming a micro blog is much like subscribing to a magazine. Anyone can purchase a magazine at a convenience store and read it; the publisher of the magazine will know that a magazine has sold, but not to whom. If the magazine reader consistently likes the content, however, he/she may choose to subscribe to the magazine, therefore disclosing to the magazine publisher his/her name and address. The ability to remain anonymous while reading a micro blog post is a unique characteristic of micro blogs.

**Value of Information**

The value that an individual places on information will define the people that he/she chooses to follow on a micro blog. Choosing to follow someone can take multiple forms. Someone may choose to follow another micro blogger that delivers information in a way that is
familiar and relevant. The type of information shared may influence who follows. The viewpoint from which information is delivered may also affect whom one chooses to follow. A better understanding of what type of information is valued by the follower will allow the researcher to define how micro blogs might be used in other fields, such as workplace learning.

Micro blogs were initially met with some skepticism. The limitation of 140 characters seemed far too few to allow for any communication of value. However, the micro blog caught on with general society and has grown to half a billion registered profiles (Bennett, 2012). A social media tool that was originally developed to provide brief inconsequential comments has now evolved into providing small, easily digestible bits of information to a growing audience. A new medium by which to disseminate information could mean a potential new vehicle by which to deliver learning. Learning is simply information that is received and incorporated into behaviors, thoughts, or attitudes, and a vehicle that provides information in bite-sized, relevant bursts could prove beneficial in workplace learning.

A better understanding of the definition of value for information on social media sites as well as how this may influence who is followed can benefit organizations that are seeking to connect further with employees, potential employees, or even customers. The purpose of this study was to investigate how micro blogs are being used in the workplace currently, how connection with others via a micro blog might support the creation of a virtual community, and how people choose whom to follow on a micro blog. A better understanding of these elements of micro blog use will allow insight into user behavior, which can then be extrapolated to how organizations can benefit from micro blogs and even leverage them as an informal, timely learning methodology.
Workplace Learning

As technology has evolved, so have methods for delivering information. As the delivery of information has evolved from storytelling to printed word to electronic posting and exchange, so have the methods for delivering learning. Workplace learning focuses on encouraging the employee to determine his/her own learning needs and select where he/she would like to receive learning on the determined need (Rowden, 2007). As with much of information exchange, workplace learning has moved from almost exclusively delivering learning through instructor-led formats to recognizing that electronic delivery may be a viable delivery method. Workplace learning has long derived benefits from the development of communities that have the ability to share knowledge and best practices. Etienne Wenger (2000) coined the term communities of practice and has done extensive work exploring how bringing together and collectively sharing the knowledge of a group can benefit everyone. The evolution of technology to deliver information and therefore learning has also had an impact on workplace communities of practice.

Gaining a greater understanding of how changes in information delivery will impact on learning in the workplace will allow organizations to harness and use technology to their benefit. Micro blogs are just one segment of social networks that are a product of the advancement of technology. Micro blogs have been tested and proven to add value in different venues than those for which they were originally intended. Should an organization understand the value that employees seek from micro blogs, micro blogs could then be used as a means to deliver information to the employee in a way that he/she would like to receive it. By delivering information to an employee in a favorable manner, the employee is more likely to seek out the information and contribute to it, creating a community that shares knowledge and exchanges ideas. These types of communities are examples of social learning and communities of practice.
enacted in life. One such community facilitated through a micro blog has been selected as a case study to examine these phenomena in action.

#lrnchat is a weekly facilitated discussion that occurs on a micro blog called Twitter and offers an exchange of ideas that centers on learning. Participants in #lrnchat come from a variety of backgrounds, and participation is open to anyone. In order to submit a comment or follow other participants’ comments, the hashtag designation #lrnchat must be used. The unique nature of #lrnchat is that it uses an asynchronous communication platform, a micro blog, to facilitate a synchronous exchange of ideas. This enables the exchange of information in a new and different way, creating a community.

#lrnchat is a facilitated by posting five questions every week on the micro blog (J. Bozarth, personal communication, February 11, 2013). The questions are delivered at specific time intervals over the designated #lrnchat hour. By using #lrnchat as a case study, the researcher hoped to learn more about this virtual meeting and gain insight into how a micro blog-supported community can engage and further learning initiatives within the workplace.

Summary

In his book The Tipping Point, Malcolm Gladwell (2010) discusses how the organization of society in certain instances builds up enough evidence or momentum to cause a paradigm shift. At the present moment, the distribution of information or knowledge may very well be at that tipping point. Frans Johansson (2006) discusses how innovation can be sparked through the combining two schools of thought and allowing a synergistic outcome. Historically, information or knowledge has been shared in a variety of ways, but as members of society become connected to one another more electronically, the distribution of information is shifting to an electronic format. This shift can be seen in the reduced production of paper-based newspapers and the
increase of electronic news dissemination. Even traditional pedagogical intuitions are utilizing
electronic learning environments. Using electronic media is the present and the future of
information sharing. Looking at the evolution of professional development, communities of
practice, and the integration of micro blogs, an intersection of needs and strengths may fill a
niche for adult professional learners.

Asking questions about how adults are using micro blogs for learning in the workplace,
how micro blogs can support the development of learning communities, and how followers
support their own educational goals are critical to better understanding how organizations might
best use micro blogs in workplace learning initiatives. Probing more deeply into an existing
micro blog community may facilitate understanding of how micro blogs can impact workplace
learning efforts.
Chapter 2: Review of Literature

Micro blogs and workplace learning are two concepts that rarely are discussed in the same conversation. Micro blogging began as a way to provide real-time updates on users’ lives. It was intended as a social connective vehicle. As organizations began to shift the use of micro blogs to educate and engage customers with their products or brands, the potential for additional uses of the micro blog platform emerged. If organizations are using micro blogs to connect with clients, it is conceivable that the micro blog platform can be used to connect with employees as well. The micro blog platform enables organizations to engage and exchange ideas with external clients. Based on how micro blogs are being used, it is plausible that a micro blog could be used for the purpose of soliciting employee feedback, inviting product questions or discussions, or disseminating information internally. To begin this discussion, it is important to know if people actually learn from micro blog posts. Studies have been conducted on how micro blogs have been used to enhance student education (Fox & Varadarajan, 2011; Kassens-Noor, 2012), but little research has been done on using micro blogs as way to share real-time learning in the workplace.

Social Networks

To begin this discussion it is first important to understand the foundation of social networks. Social network sites (SNSs) have capitalized on Web 2.0, which allows interactive communication rather than static unidirectional information dissemination (Cormode & Krishnamurthy, 2008). The value of didactic communication far predates the web, but when the web was able to facilitate a two-way exchange of communication, it opened the door to other possible uses. Web 2.0 facilitated didactic exchange in what has since become known as the phenomenon of social networking, the idea of which is to utilize the interactive functionality of
Web 2.0 to facilitate the sharing and exchanging of information with others (Jansen, Zhang, Sobel, & Chowdury, 2009). Whereas Web 1.0 would only allow information to be posted online for consumption (Cormode & Krishnamurthy, 2008), Web 2.0 now allows every Internet user the ability to post his/her own information and ideas online for people to read and upon which to comment. Services such as Friendster, Facebook, MySpace, LinkedIn, Twitter, Yammer, etc., provide platforms designed to facilitate interactions among users. Although each of these online social networks has its own unique product offering, all of them typically allow users to display a personal profile, create connections with other users, and interact with those users with whom they have connected through public or semipublic posts and private messages (Boyd & Ellison, 2007; Cormode & Krishnamurthy, 2008).

The use of social networks has nearly doubled since 2008, with nearly 59% of Internet users utilizing at least one. The increased use of social networking has raised concerns about its impact on face-to-face relationships among users, namely, that online social networks will encourage user isolation from in-person relationships. The Pew Internet and American Life Project conducted a study that explored whether or not active involvement with online social networks reduced the quality and number of relationships the social network user develops. The results of the study showed that social network users tend to have a greater number of close relationships and are less likely to be isolated than a non-user (Hampton, Goulet, Rainie, & Purcell, 2011). These extended relationship networks demonstrate that social networks can be beneficial in connecting people with one another in person and do not encourage isolation. A high level overview of the most prevalent social networks is provided in Table 1.

It has also been found that adults over age 30 place a high value on using social networks to connect with others around topics of similar interest (Smith, 2011). Creating connections and
encouraging interaction around an area of interest through social networks lays the foundation for a social network to be able to bring greater value to users than just social interaction. This idea will be more fully developed in the subsequent discussion of communities of practice.

Table 1

**Social Media Sites Overview**

<table>
<thead>
<tr>
<th>Social Network Site</th>
<th>Features</th>
<th>Site founded</th>
<th># of users</th>
<th>Average user age</th>
</tr>
</thead>
</table>
| Facebook            | • User defined profile  
• Profile shared only with user selected group  
• Mutually connect with other users to see profile updates | March 1, 2006* | 800 million** | 38*** |
| MySpace             | • User defined profile  
• Profile shared only with user selected group  
• Mutually connect with other users to see profile updates | August 2003^ | 25 million^^ | 32*** |
| LinkedIn            | • User defined profile  
• Profile sharing variable based on user setting and paid membership  
• Mutually connect with other users to see profile updates or paid membership allows visibility of profiles | June 2003**** | 64 million** | 40*** |
| Twitter             | • User defined profile  
• Profile shared with all (default setting)  
• All users can see profile updates (default setting) | July 13, 2006* | 100 million** | 33*** |

*Note.* *(“A Brief History of Microblogging,” 2008)*  
**(“Infographic: Social Media Statistics For 2012,” 2012)*  
***(Hampton et al., 2011)*  
****(Boyd & Ellison, 2007)*  
^*(Gillette, 2011)*  
^^*(“17 MySpace Statistics,” 2012)*
As mentioned previously, each of the social networks has a unique market or niche that it is trying to serve with its product. Each network has different properties that fall into three categories: message distribution, length, and shared activities. Message distribution pertains to who in the social network can see the message post and is a common way in which social networks differ (Boyd & Ellison, 2007; Cormode & Krishnamurthy, 2008). Some social networks restrict who can view their user updates based on mutually accepted connections, i.e. Friendster, Facebook, and LinkedIn. Sharing messages across the entire end user population is the other end of the spectrum. The second category is message content, which is characterized by what type of media can be shared such as text, hyperlinks, pictures, videos, news articles, etc. Finally, some social networks have the ability to facilitate activities such as games among users. The blend of these three categories, along with the niche to which they cater, is what makes each social network its own unique product. One of the unique social network functions is the distribution of messages in a concise format, which is referred to as a micro blog. Both the social networks Yammer and Twitter are micro blogs. Other micro blog sites exist, but Yammer and Twitter are the most widely recognized. Micro blogs are a type of social network that has been researched less than sites such as Facebook and MySpace.

**Micro Blogs**

Micro blogs are a subset of social network sites that communicate messages via short bursts of information. Using the three categories mentioned previously, one can better understand the uniqueness of micro blogs in the spectrum of social networks. Micro blogs broadcast messages to the entire user population (unless the author activity specifically designates the audience). The second category is message content. Micro blogs allow abbreviated hyperlinks to be used in sharing information that extends beyond the base 140-
character limitation. These abbreviated hyperlinks allow news articles, blogs, photos, videos and many other forms of online media to be shared via the micro blog. The use of interactive games as a form of engagement on the social media site is the third category. At this time, micro blogs are not equipped to facilitate any type of game or interaction beyond discussion. Information can be conveyed as text based messages or links to other sites, pictures, or videos. Each message sent in a micro blog is limited to 140 characters. Although the micro blog phenomenon began as recently as 2006 (Java, Song, Finin, & Tseng, 2007), already 15% of online adults use a micro blog site such as Twitter, which is nearly double the usage since 2010. Twitter usage has been found to be highly correlated with the use of smart phones. Smart phones work well with micro blogs because of the brief messages shared, and 20% of smart phone users are active on Twitter. Micro blogs have been shown to appeal to a wide population of users (gender, age, and race), bringing a variety of ideas to micro blog social network sites (Smith & Brenner, 2012).

**Demographic of micro blog users.** The use of all social networking sites has almost doubled since 2008 (Hampton et al., 2011). The use of the micro blog site Twitter has also risen. A February 2012 study found that 15% of online adults use Twitter and eight percent use it on a daily basis. The demographic of micro blog users is diverse. While the usage rates between men and women are equal, the age of typical users ranges from 18-49 with only a five percent drop in usage for the next age bracket of 50-64 years (Smith & Brenner, 2012). These age ranges are indicative of a medium that spans several generations, which means that micro blogs are a form of social network that has been adopted readily. The age span across micro blogs users also indicates that micro blogs are being used both by the existing workforce population as well as the emerging workforce.
Features and functions of micro blogs. A few features that increase the usefulness of a micro blog are the use of hashtags (#) and the @ symbol (Karch, 2009; Lomicka & Lord, 2012). Hashtags can be included in the posting and allow people to identify content or subject of the post (Domizi, 2013). This is often seen used when following posts related to an event such as the Olympics (#Olympics), Super Bowl (#Superbowl), a conference (#ASTDNM), or a shared experience (#DisneyMemories). Micro blogs also use the at symbol (@) followed by a name to direct a message to or mention a specific person while posting publicly, for example @BarackObama, @ParisHilton, or @Oprah. The use of the @ symbol was started by a technology savvy group attending the South by Southwest conference in 2007, where participants began using the symbol among themselves. Twitter learned about their usage and incorporated the @ symbol into the tools for the micro blog (Wenger, White, & Smith, 2009).

Should a user wish to send a direct message to another user, the abbreviation DM must be used followed by the @ symbol and the user name of the recipient. These abbreviated codes enable the users of micro blogs to make the most efficient use of the limited number of characters.

Even with the use of symbols, the brevity of the message has raised suspicion as to the value that can be delivered through micro blogs. However, the 140-character limit has not limited the use of micro blogs. Abbreviated hyperlinks are used to make the most of the 140 characters available. Services such as TinyURL.com allow users to enter a lengthy web address that is then truncated to a unique short URL. This enables users to link to web pages, documents, and blog posts that would otherwise be too long to include in a micro blog post. Instagram is an example of a service that allows users to post links to pictures on their micro blog. These abbreviated hyperlinks can link to anything, allowing materials to be referenced, shared, and
generally made available through the micro blog. This access to outside resources has further extended the value of micro blog posts beyond the limitation of 140 characters.

As discussed earlier, micro blogs differ from other computer-mediated communication such as instant messaging, email, or discussion forums. Each of these examples is either directed and sent to a specific recipient (such as instant messaging or email) or focused around a single topic (email or discussion forums), and discussion occurs over a period of time (discussion forums can span years). Micro blogs allow users to post messages to the general public (no direct recipient) instantaneously. By tagging the posted message, other users can follow a specific tag that may be of interest. This allows micro blog users to *eavesdrop* on the musings of a variety of people without revealing that the user is consuming the information: a unique trait within the social network sphere. Micro blog sites allow users to seek out small bursts of information that is appealing to them, which then provides a starting point for further exploration (Lomicka & Lord, 2012). Micro blog users have the ability to read the public feed and subscribe specifically to other users’ posts. When one user chooses to subscribe to another user’s posts, it is called *following* (Java et al., 2007). It is possible to follow anyone that has a public micro blog either publicly or privately.

By selecting whom to follow either publicly or anonymously on a micro blog, a user creates his/her own unique blend of communities to which he/she belongs. The user may participate actively through the sharing of ideas and resources in one topic area, while silently monitoring the exchange on other topics. Learning takes place when ideas are challenged or connections are made between ideas. Micro blogs bring together a variety of experiences and depth of knowledge in different fields. The breadth of thought brought together within a micro blog platform allows a free exchange of ideas from different industries and experiences. Through
this diversity of ideas, a synergistic result can emerge (Johansson, 2006). Since learning takes place as a result of exposure to various thoughts and challenges, the exchange of ideas via a micro blog may be a viable platform to support learning.

**Use of micro blogs.** Micro blogs have been used in a variety of ways in different settings that highlight their features and benefits. Originally, micro blogs were created to share small updates on what was happening to users throughout the day. Some viewed these updates as useless information, which led them to doubt the value of the micro blog platform (Savage, 2011). Companies then began using micro blogs to promote their products and or services, creating a new function beyond moment-to-moment personal updates. The use of symbols (# and @) and abbreviated hyperlinks has fueled the development of many marketing functions used with micro blogs. This new sphere of functionality has demonstrated the existence of additional uses for this social networking platform. Companies found value in using this social media tool to reach new clients, promote products, and run seasonal campaigns, among other initiatives. Beyond the business world, education has also discovered different ways to utilize a micro blogging platform. Educators are using micro blogs to create out-of-classroom discussions and idea exchanges. Televisions networks use micro blog hashtags to facilitate discussions about television shows or news broadcasts. These different uses demonstrate ways in which micro blogs can create value in different settings.

Marketing was one of the first additional uses for micro blogs beyond the personal status update. One study was done to look at how micro blogging might serve as a vehicle for electronic word of mouth marketing, the purpose of which is to generate conversations about a product or a brand to increase general awareness, ideally with a positive connotation. It was theorized and then proven that Web 2.0, and more specifically the Twitter micro blog platform,
could be a successful vehicle for word of mouth marketing. It proved so successful that the authors recommended that corporations use micro blogging as a part of their overall marketing strategy (Jansen et al., 2009). Organizations benefit from their micro blog marketing programs. Facilitating an exchange of ideas around a product or service stimulates business and therefore impacts the bottom line. If the use of micro blogs is having such a profound effect in reaching external clients to educate them about a product or a service, micro blogs could also have an impact on workplace learning. The proven sharing of ideas and opinions across a micro blog platform can open the door to other potential uses.

Encouraging the sharing of opinions has also been shown to enhance recruiting efforts. Laick and Dean (2011) investigated the use of a micro blog platform to enhance organization employee recruiting efforts. Micro blogs were used to post positions and offer applicants a glimpse of the organization’s culture. The transparency of the corporate culture during the recruiting and hiring process enabled the hiring of better candidates that were able to adapt to the organizational environment more easily. This is another example of how micro blogs have facilitated learning.

The idea of a micro blog being used for marketing has been discussed, but marketing is frequently a unidirectional, pre-defined message from an organization to a customer. This is valuable information but does not highlight the true value of a micro blog: the ability to exchange ideas with a large diverse population. Only through exposure to many different thoughts and ideas can one gain insight from a micro blog. An example of this can be seen in the trending of micro blog information. Tracking posts on a micro blog has allowed researchers access to a valuable data set. By tracking specific words in posts on a micro blog, researchers have been able to generate advance warning about flu outbreaks, validate seismic activity, and
learn about conditions such as fires or dust storms that may affect air quality (Savage, 2011). The real-time nature of posts on a micro blog allows a free flow of ideas that, collectively, can advance knowledge.

Higher education has also used micro blogs to enhance knowledge. Faculty Focus, a respected higher education teaching publication, has done studies over the past 3 years looking at how university faculty members use Twitter. In the 2009 report, 30.7% of faculty surveyed reported using Twitter (“Twitter in Higher Education 2009,” 2009). In 2010, that number increased to 35.2% (“Twitter in Higher Education 2010,” 2010). Faculty participating in the survey reported using Twitter to share information with peers a majority of the time (Gerstein, 2011; “Twitter in Higher Education 2010,” 2010). Faculty members are increasingly seeking out the exchange of ideas on a micro blog for their own development. However, several articles have outlined how Twitter or a micro blog platform is also being used to enhance formal educational efforts.

Several studies have investigated how using a micro blog as a supplemental communication medium concurrently with an instructor-led course during an academic term impacts learning beyond the classroom. The results indicate that based on the amount of communication that was exchanged freely and without defined learning goals, informal learning took place outside of the classroom. Micro blogging has proved to be a new form of communication that can be leveraged for learning, whether by reading, commenting, or sharing original thoughts. Ebner, Lienhardt, Rohs, and Meyer (2010) believe that the lack of structure in the medium further has facilitated the informal learning process. Kassens-Noor (2012) took the idea of informal learning supported by micro blogging even further by finding that this communication medium is best suited to combined knowledge creation among a group. The
downside of this finding is that using a micro blog specializing in instantaneous messaging does not allow the learner time to reflect on what is being shared, which in turn affects the depth of critical thinking involved. However, the use of Twitter has had a positive impact on learning through the facilitation of peer-to-peer discussion, which was found to lead to practical applications of the subjects discussed (Domizi, 2013; Dunlap & Lowenthal, 2009; Gao, Luo, & Zhang, 2012; Junco, Heiberger, & Loken, 2011; Kassens-Noor, 2012; Lomicka & Lord, 2012).

Higher education is not the only venue by which micro blogs can impact learning. Ross, Terras, Warwick, and Welsh (2011) outlined how micro blogs can be used to facilitate back channel discussion during professional development events. The study was conducted within the confines of a conference; it looked at the benefits attained by facilitating micro blog communication outside of the formal conference proceedings. The authors found that although a micro blog does not facilitate a single linear flow of thoughts, it does enable the sharing of thoughts, ideas, questions, and shared resources about a common experience. Sharing in this manner was found to expand the communication and participation within the conference attendee community. In addition to supporting conference attendees, it has also been proposed that using this back channel communication can also educate the community on different topics (Shiffman, 2012).

**Micro blogs supporting communities.** Wenger et al. (2009) took the next step in looking at how technology, specifically micro blogs, has supported the development of communities of practice. Their work looked at how technology has impacted how humans connect with other people, organizations, and groups, and conversely how these connections impact the use of technology. The authors draw a parallel between ecological communities or habitats and technologically supported communities. “What makes the habitat work is not just a
set of physical features, but also the ways in which the species has learned to take advantage of these features for its survival” (p. 37). Micro blogs were not designed specifically to support the development of communities; rather, the original intent was to send and read brief messages about what someone was doing or thinking. However, short bursts of communication and the ability to link to more thorough resources have allowed users to move beyond the brief status updates and further expand the use of micro blogs to support communities of practice. The term community of practice describes a model for informal, situated learning that can be used either in or outside of the workplace.

**Workplace Learning**

Workplace learning is a comprehensive term that is used to describe professional development for an employee. It implies “human change or growth that occurs primarily in activities and context of work” (Fenwick, 2001, p. 4). The best way to explain the premise behind workforce learning is to compare and contrast it with training and development. Training and development exist to conduct formal training on specific job tasks. Training focuses specifically on a short-term perspective: how to teach an employee a specific competency. The development part of the training and development equation has the same task/skill orientation, except over a longer term. In contrast, workplace learning is more focused on encouraging the employee to seek out and self-select the learning in which he/she wishes to participate in a workplace setting (Rowden, 2007).

Workplace learning can be divided into three broad categories: formal, informal, and incidental (Watkins & Marsick, 1992). The first category of formal learning is also referred to as training. The second category of workplace learning, informal learning, is differentiated from formal learning by the learner’s involvement in selecting the learning goals and methods
(Walden, Bryan, & Ramlall, 2011; Watkins & Marsick, 1992). The final classification of workplace learning, incidental learning, can be explained as learning that occurs naturally, such as how to behave in a situation or within a culture. Incidental learning is frequently identified as a subset of informal learning. Each category of learning is valuable for delivering different types of content.

**Formal learning.** Formal learning or training refers to structured activities that are designed to provide instruction on a task or role. Formal learning initiatives are built around predefined objectives. The organization determines the objective for the formal learning initiative, and then the training is designed and developed based on the best delivery method. A learner may attend a formal training in an instructor-led class, participate in a webinar, view an asynchronous eLearning module, or read a manual. In each of these scenarios, the information is being transferred predominantly in one direction: from the instructor to the learner. The purpose of these types of formal learning is to deliver a consistent message—the goal of achieving the stated objectives—to a group of learners.

**Informal and incidental learning.** Informal learning takes place outside of the formal educational process, whether it be in academia or the workplace. Informal learning has been further broken down into three categories: self directed learning, incidental learning, and socialization (Schugurensky, 2000). Self directed learning is designated by the learner’s intention to learn and then being aware that he/she learned something from the experience. Socialization is the internalization of values and beliefs. The learner is not consciously seeking the learning and is usually unaware that learning has taken place. Incidental learning is described in both the macro model of types of learning as well as the more micro model of types of informal learning. The meaning of incidental learning in both models is the same; incidental learning is
unintentional, such as learning by participating in a task, but the learner still gains knowledge or skills (Rowden, 2007). This dissertation focuses on the intersection between informal and incidental learning.

**Adult Learning in the Workplace**

When discussing workplace learning it is important to note the assumption that the workplace is populated by adults, as the principles involved in designing and developing any learning initiative must be centered on adults. The development of adult learning and therefore workplace learning is supported theoretically by andragogy: the “the art and science of helping adults learn” (Knowles, 1980, p. 43). Malcolm Knowles identified the following principles of adult behavior that serve as a foundation for developing adult learning today:

1. Adults need to understand why they need to learn something.
2. Adults have a personality that is self-directed, as opposed to dependent on another human being.
3. Adults come to any learning experience with a vast knowledge based on their experiences.
4. Adults become ready to learn when they encounter something they need to know.
5. The orientation for adult learning is life-centered, making learning immediately applicable rather than providing general subject knowledge.
6. Adults are motivated to learn intrinsically rather than extrinsically (Knowles, Holton, & Swanson, 2005).

Knowles’s work has been challenged and further investigation has been done on these constructs. His critics pose questions about whether or not the principles are actually a theory and argue that they are confusing and vague (Davenport & Davenport, 1985; Hartree, 1984). It has also been
said that while it is not a proven theory, it is a “set of grounded principles of good practice” (Brookfield, 1986, p. 98). However, even with these and other critiques, Knowles’s principles remain the foundation of adult learning today. The theme of each principle outlined in Knowles’s work has become a subject for ongoing research regarding adult learning.

**Need to know why.** Adults wish to be active participants in their learning. They want to know why they are being asked to learn, what they are being asked to learn, and how the information will be applicable to their lives (Holton, Swanson, & Naquin, 2001). Presenting this information up front in any learning initiative provides valuable context that helps to engage the adult learner and prepare him/her for the other principles of adult learning. The foundation of why, what, and how prepares the learner to engage further as other adult learning principles are applied.

**Self-directed.** Adults have a strong sense of identity and self-knowledge, which creates a desire to make choices for oneself. The desire to have some control over what is happening in an adult’s life also applies to learning new information. Many descriptive and research studies have been done on self-directed learning. One study done in Ontario, Canada found that self-directed learning is a common, if not universal, activity in adults; however, many do not view what they have learned through self-directed efforts as education because it was not delivered through more formal distribution methods (Tough, 1979). This description coincides with that of informal learning. Merriam, Caffarella, and Baumgartner (2007) classified the extensive literature on informal learning into the three primary categories based on the goals of the authors of the literature on informal learning:

(1) to enhance the ability of adult learners to be self directed in their learning, (2) to foster transformational learning as central to self directed learning, and (3) to promote
emancipatory learning and social action as an integral part of self directed learning.

(p. 107)

Students look to instructors or teachers to direct their learning. Growing up and learning that this is the model for learning disempowers adults to seek out their own learning. The second goal category is the infusion of transformational learning into self directed learning. Transformational learning is defined as learning that effects a fundamental change in the way individuals interact with the world around them (Kegan, 2000). Authors that fall into this category, such as Brookfield (1985, 1986) and Mezirow (1985), posit that adult learners need to reflect critically on what is being learned and how it integrates with the world and their own personal values. This introspection is supported through participation in dialogue that challenges and supports the learner’s beliefs.

**Experience and knowledge.** The second principle of adult learning focuses on preexisting adult knowledge and experience. Adult learners enter any learning environment with vast amounts of knowledge from their life experiences. An adult’s identity is closely tied to his/her life experiences; therefore, to disregard these experiences is to dismiss the adult (Knowles, 1980). Past experiences can be valuable assets to ongoing learning. One person’s experience can act as a learning opportunity for another person, making previous experience a valuable learning tool. The desire to understand one’s own life experience better is a motivator in taking on self directed learning. As an adult learns new information or knowledge and compares it to existing belief systems, the comparison can create a transformational learning experience or a paradigm shift. It should be noted, however, that an adult’s prior experiences can also act as an obstacle to learning.
**Readiness to learn.** An old Buddhist proverb states, *When the student is ready, the master appears.* Adults as self directed learners will not actively seek out knowledge for which they do not recognize a need; only once life has shown a need to learn something will the adult learner seek out the requisite knowledge. Readiness is defined as the ability and willingness to accomplish a task (Hersey, Blanchard, & Johnson, 2001) and is determined based on the specific task and not the person in general. In looking at the specific task, the adult determines if he/she has the ability to learn about it, as well as whether he/she is willing to learn information on the topic. While articulated discretely here, these questions are asked and answered virtually instantaneously in the adult learner’s mind. The need for the specific knowledge engages the adult’s mind, as is his/her willingness and ability to learn it, at which point he/she is ready to attain the desired skills or knowledge.

**Life centered knowledge.** When presenting new knowledge to adult learners it will benefit the learning process if the knowledge is immediately applicable to real-life situations. Learning is triggered when an adult lacks the appropriate knowledge for the situation at hand. Whereas traditional formal education tends to present broad-based information on a subject, adults prefer to seek out knowledge on specific topics that can be applied to a life situation. This characteristic of adult learning highlights the importance of empowering adults to find information about issues they are facing (Knowles et al., 2005; Rowden, 2007). By making learning available at the time it is needed adults can utilize their self-directed nature to find resources to address the subject before them.

**Internal motivation.** Adults tend to want to learn for intrinsic reasons such as personal growth, performing their responsibilities better, etc. Intrinsic motivation can be seen as a two-step process. The first step occurs when an adult determines if the idea, task, or activity is
interesting. Should the idea, task, or activity be determined to be engaging, the adult will explore or investigate it. If the task proves to be challenging and provides developmental feedback, it will be deemed intrinsically motivating (Reeve, 1992). Once the topic is deemed as such, the adult will be ready to begin learning more about it. Whereas adults will respond to extrinsic motivators such as monetary bonuses or career advancement in the short term, for long-term impact, intrinsic motivators like self-esteem and recognition are the best choice (Rowden, 2007).

These six adult learning principles are tied to each other closely, together creating a framework by which to deliver effective learning to an adult population. These elements highlight that adults want to understand their participation in the learning experience, want to have some choice in what they are learning, need to have the experience they bring respected and leveraged, and need to be ready to learn the new material. Moreover, the topic should be currently relevant to their lives. Based on these elements, adults need to be motivated internally for the greatest success in any learning initiative. These adult learning principles are valuable in both formal and informal workplace learning.

**Social Elements of Workplace Learning**

Adults learn on their own; however, much of what one learns as an adult occurs in various groups. The workplace provides a great deal of new information to learn, from procedural information to how to behave in a new culture. These two different types of information require different types of learning, both of which must utilize and leverage adult learning principles. An adult learner learning to use a new computer program may have scripted computer exercises to complete to practice his/her new skills. This type of learning would be done independently, relying on prior knowledge of how to operate a computer, positional knowledge, and the applicability to his/her current role. An adult that is new to an organization
will learn about the culture through interacting with others. This type of learning would be community dependent, once again utilizing and respecting prior knowledge, applicability to the current position, and an internal motivation to be successful. Both independent and social learning utilize adult learning concepts, but address different needs in the workplace. The focus of this dissertation is social learning.

Human beings are essentially social beings. Social interaction in workplace learning refers to the interaction between co-workers. The adult learner constructs knowledge by articulating ideas, receiving feedback, and refining ideas based on interactive discussions (Brown & Duguid, 1991). This social exchange incorporates several of Knowles’s adult learning principles, such as having an active role in defining the context and content of the discussion, the ability to share prior experiences, and internal motivation. Senge (1990) also identifies dialogue as a primary component of social learning. Learning is a social activity that can occur during both formal and informal daily interactions with others. These interactions and exchanges can happen across a variety of media, including face-to-face conversations, phone calls, video chats, and micro blog exchanges.

Communities of practice. The evolution of the social construct within learning serves as the foundation for situated learning, which dictates that learning occurs as a result of the interplay between activity, culture, and the context in which it the learning occurs or is situated. Lave and Wenger first presented the idea of social learning, also called situated learning, in 1991. Lave and Wenger (1991) noted the interplay between social interaction and situated learning and coined the term communities of practice, which are defined as groups of people that choose to come together around a particular interest and share knowledge over a period of time. Communities of practice support the exchange of informal and incidental workplace learning.
Some examples of communities of practice include professional organizations, networking groups, and work teams. Communities can be formed based on a shared interest, a concern, or a project. Communities of practice are valuable to organizations because they provide opportunities for informal learning. A group of people’s ability to come together to discuss a specific topic and work toward a common goal allows participants to learn from each other and create a network of resources.

Social learning systems and therefore communities of practice both challenge and benefit organizations. Organizations need to begin to support and encourage participation in communities of practice; however, these social learning networks often do not fall within the constraints of a single organization, and therefore cannot be directed or controlled (Wenger, 2000). The benefit of social learning systems is that knowledge distribution is becoming more prolific, especially among those that have the ability to form and leverage communities of practice. The shared experience among employees increases institutional memory and helps bring new members into the culture of the community through incidental learning (Wenger, 1998). This is made possible based on the structure that is defined by a community.

Communities of practice come together and work as a group to define their structure. Structure is not defined by traditional organizational standards such as hierarchical charts or learning objectives; rather, the community comes together around a specific topic or interest. Through their interactions, the group defines the meaning, determines how the community will do things, sets boundaries, and establishes how learning within the group becomes a function of experience and competence (Wenger, 1998). These interactions serve the community of practice by strengthening bonds as the community evolves together, which continues to bring further informal benefits to organizations.
Situated learning and communities of practice have been found to exist in online learning environments as well as in person. A study done on asynchronous online learning found that “strategies requiring learners to take a perspective in an authentic scenario facilitate cognitive presence, and thus critical thinking and higher levels of learning” (Darabi, Arrastia, Nelson, Cornille, & Liang, 2011, p. 216). Darabi et al.’s (2011) study opens the possibility of utilizing technology to create and support communities of practice. Although their study did not address micro blogs specifically, it did focus on online active asynchronous communication exchanges, finding that situated learning facilitated through online discussion could yield a positive impact on learning.

**Case Study: #lrnchat**

In recent decades, workplace learning has evolved significantly and continues to change. Micro blogs may be the next arena for workplace learning, leading to the question, How can micro blogs support the development of workplace learning through communities of practice? One group has created a social learning environment that functions as a community of practice using a micro blog. This example interweaves all of the concepts discussed thus far. #lrnchat utilizes the micro blog platform to facilitate these interactions with the assistance of hashtags (#). A designated day and time for participation along with the use of the identifying hashtag (#lrnchat) help to define the community. The topics are selected and questions are developed to facilitate participant communication (J. Bozarth, personal communication, February 11, 2013). Learning is the center of the topic for this group, which draws a variety of participants. Participants’ self-selection to engage in this discussion incorporates the use of adult learning principles. The culmination of these theoretical constructs within this actual community using a micro blog platform for facilitation makes it a perfect case study for this research.
In 2007, a group of learning thought leaders came together to facilitate a weekly exchange of ideas, called a chat, using a micro blog. Marcia Connor, a leader in workplace learning, approached five other leaders in her field and proposed the idea of creating the #lrnchat group. Connor had seen another community created using a micro blog and wanted to bring her peers together in a similar setting (C. Quinn, personal communication, February 1, 2013).

The group of five learning leaders began by designing a plan. Originally, the group decided to host the exchange for an hour and a half. They felt this would give ample time for the selected layout, which consisted of everyone introducing themselves by posting a message on the micro blog that included their name, where they are located, and then the #lrnchat hashtag. Members that identified themselves as being new were coached by the more seasoned participants. As the group evolved over time, it posted the rules for the group on the micro blog at the beginning of the designated chat time.

Following introductions, five questions were posed on a central topic. Using pre-defined questions allowed the moderators of the chat to participate more actively while keeping the posted ideas moving and on topic. The instructions on how to participate in the #lrnchat exchange guide participants to avoid trying to read all of the #lrnchat posts because the posts will come in at varying times and may not be sequential, or they may come in so rapidly that reading every post would be overwhelming and the free exchange would be lost.

Several years ago, someone asked for a transcript from #lrnchat. This request prompted the facilitating group to create a blog that maintains the transcripts from the #lrnchat meetings each week. The blog also includes the guidelines on how to participate in the #lrnchat exchanges, as well as interesting articles about #lrnchat.
When the facilitators were asked about the demographics of the #lrnchat participants they had little to say. As was explained previously, micro blogs allow people to observe without having to identify themselves. While it is possible to estimate demographics using third party programs, it is impossible to know how many non-participant observers might be gaining insight from the exchanges that take place in this community.

The group has worked hard to identify a time slot that will work for the various United States time zones. Although many international participants have attended in the past, just recently another micro blog community was created that was set at a more appropriate time for European participants.

As is the case with any community, #lrnchat has faced challenges. Foremost, the facilitation of the #lrnchat community does not happen without effort; much work goes into keeping this community moving forward. The facilitation team has evolved over the years; only one person on the current team was a part of the original five that founded the group. The facilitation group began by having conference calls to determine topics for the discussion; the conference calls evolved into email exchanges. Currently, the facilitation group uses a private Facebook page to exchange ideas on the topic for the #lrnchat exchange each week.

The central focus on the community has also come into question. #lrnchat participants come from a variety of backgrounds, including K-12 educators, higher education faculty, workplace learning professionals, and lifelong learners. This wide variety brings many different ideas or perspectives, but also some conflict on the core themes.

Summary of Literature

Micro blogs create a social interchange of ideas, positioning themselves as a potential vehicle for social learning in the workplace. The large number of educated users, the alternative
uses that have already been proven such as marketing campaigns, and the support for communities of practice lay the foundation for micro blogs to support ongoing workplace learning. Micro blogs facilitate short burst communications that are virtually instantaneous, allowing a rapid exchange of ideas. This immediacy makes micro blogs ideal for assisting in resolving issues and providing timely resources.

Malcolm Knowles (1980) identified six principles of adult learning, each of which supports the interchange of ideas using a micro blog platform. Micro blogs facilitate the social or informal learning that results from a community of practice. The #lrnchat community uses a micro blog platform to facilitate an exchange of ideas. An examination of this case leads to various research questions, such as, Why do #lrnchat participants choose to participate? How is the information shared on #lrnchat used in the workplace? How does the #lrnchat micro blog community compare to other sources of professional development? What best practices have been identified in using a micro blog for the purpose of learning? Does the #lrnchat micro blog community function as a community of practice? The answers to these research questions will benefit informal workplace learning communities of practice.

Bringing the new Web 2.0 technology of micro blogs together with an informal learning strategy using communities of practice might prove to be an effective addition to a formal workplace learning structure, providing organizations the ability to relate and connect to their employees in a way that aligns with Knowles’s (1980) adult learning principles. Immediacy, depth of content, and connection with others outside of organizational, industrial, and geographical boundaries creates a rich forum for the sharing of ideas and learning opportunities.
Chapter 3: Methodology

Methods of information delivery have changed drastically in recent decades. Microblogging has become a means to transfer or share information in short bursts across large networks of people. Whereas email is sent to a predetermined group of people and Facebook posts are only viewed by mutually acknowledged friends, micro blog posts are broadcast to everyone, casting a much wider net and communicating information to a public network of people. The short bursts of timely information appeal to the adult learning style. One group, #lrnchat, has been identified as implementing these principles in a quasi-informal exchange of ideas on a regular basis using a micro blog. #lrnchat, a facilitated weekly presentation and exchange of ideas among participants, was used as a case study for the application of adult learning, communities of practice, and workplace learning theories. Using this forum as a case study provided insight into the reasons users employ the micro blog distribution method, how #lrnchat meets the need for just in time professional development, and what best practices have been identified through participation.

Overview of Mixed Methods Design

The research being conducted was a mixed method study focusing on the description of the workplace learner as a micro blog participant. The study took place in two phases. During the first phase the researcher conducted an online survey, which served two purposes. The first purpose was to survey #lrnchat micro blog users, understand why they chose to participate, and learn about the strength of the community of practice created through involvement in this group. The second purpose was to identify participants that use the #lrnchat micro blog for workplace learning and solicit their participation in the second phase of the study: follow-up phone
interviews. The purpose of the phone interview was to explore how participation in #lrnchat has benefitted participants and uncover any best practices learned during participation.

**Phase 1: Survey**

Phase 1 of the study, the online survey, was used to inform phase 2, as well as gather information pertinent to the research questions. Volunteers for the online survey were solicited through the weekly meeting of #lrnchat over a period of 4 weeks. #lrnchat is an ongoing active micro blog community on Twitter (a micro blog site). The members of the #lrnchat group are both workplace learning professionals as well as academics from both higher education as well as post secondary educational institutions. The fact that this group of professionals comes together for a weekly synchronous idea exchange via a micro blog indicates a higher than average chance that they utilize the micro blog as a vehicle for learning. The researcher contacted the group of facilitators for #lrnchat and received permission to solicit participation in the online survey. Study participants were recruited from #lrnchat through a series of micro blog postings during the weekly discussions. These postings requested participation in the online survey. During the administration of the survey participants were asked if they would participate in a 30-minute phone interview on their use of the micro blogging community. The request for participation was presented to participants over the course of 4 consecutive weeks during the synchronous meeting times.

**Survey Structure**

Study participants completed an online survey (Appendix A). The survey contained four sections, which included demographic information, information about the participant’s experience with #lrnchat, the participant’s use of professional development resources, and questions about #lrnchat as a community of practice.
**Demographic questions.** The first section asked the survey participant for basic demographic information. The demographic questions were placed as the first section of the survey to engage the participant and allow him/her to get comfortable answering questions. The specific questions focused on the participant’s professional field, length of experience, and level of education. These areas were selected because the literature suggested that these elements might correlate with participation in social media. The final question in this section invited the participant to volunteer to participate in a follow on survey. If the participant answered Yes, indicating he/she was willing to participate in a phone interview, he/she was asked to provide contact information for scheduling purposes. If the participant responded No to the invitation, he/she was not asked for contact information and continued to the next section of the survey.

**Participant’s experience with #lrnchat.** The second section of the survey focused on the participant’s experience with the #lrnchat group. In this section, the participant was asked how he/she learned about the #lrnchat group and how he/she chose to participate in the group. To better understand how survey participants interact with the #lrnchat group, questions were asked about how frequently they attend the synchronous group, how they schedule their attendance, whether or not they multi-task during the synchronous exchange, and how long they typically follow the live exchange. In addition to the level of involvement during the synchronous events each week, participants were also asked if they engage with other #lrnchat participants outside of the designated synchronous exchange. The information from this section provided a better understanding of the type of relationship #lrnchat participants have with this micro blog-based synchronous exchange.

**Participant’s use of professional development resources.** The third section of the survey requested information on resources the participant may use for professional development.
Once the resources were identified, further questions were asked about these resources, such as how frequently each resource was used, and whether each resource provided a quality and or timely response when the participant had a professional question. This section of the survey tied back to the use of #lrnchat by asking whether or not information shared during the #lrnchat synchronous exchange is useful as a professional development tool and, if so, how frequently the information gained from #lrnchat is of use in their professional forum.

**#lrnchat as a community of practice.** The fourth and final section of the survey was an existing instrument developed to measure two aspects of a community of practice: the group’s ability to assimilate shared knowledge and put it into use, and the level of engagement a person feels within a community of practice. It has been theorized that micro blogs support and encourage the development of communities of practice (Wenger et al., 2009; see more in depth definition in Chapter 2), and this section of the survey measured the use of knowledge from the #lrnchat community as well as the level of connection participants feel with the #lrnchat group. This instrument, developed by David Cadiz, John E. Sawyer and Terri L. Griffith (2009), consists of 12 statements measured on a 7-point Likert scale ranked from *strongly disagree* to *strongly agree*. The authors used confirmatory factor analysis and path analysis to assess validity of the instrument. The results of these tests demonstrated internal consistency of the instrument and “provide[d] distinct explanatory power” (p. 1035). The instrument was further validated through additional testing with a second organization.

Two changes were made to this instrument for its use in this study. The original instrument used a 7-point Likert scale, which would give a participant the ability to make a neutral selection on the scale. The researcher reduced the number of selections on the Likert scale to six, therefore forcing the participant to select a response on one side of the scale or
another. The second change to the existing instrument was verbiage in the statements themselves. The initial instrument was used in technology-based communities, so the statements used the term “technical specialty” (Cadiz et al., 2009, p. 1055) to identify the group where the participants worked. This phrase was changed to field for the use in this study because it held the same meaning as technical specialty and did not change the intent of any of the statements in the existing instrument, but would be more acceptable and understood by survey participants. The theoretical foundation for each survey question and which research question the survey question supports is outlined in Appendix B.

**Validity.** The survey was validity tested prior to being distributed to participants. In order to test validity, the survey was reviewed by two professionals who are experts in micro blogs and social media. Their insight into the questions posed by the survey and feedback allowed the researcher to revise questions to better gather the information being sought. Upon receiving their feedback and making necessary adjustments to the survey, it was then tested for reliability.

**Reliability.** In order to test the reliability of the survey, a pilot test was conducted with a small sub-group of micro blog users. The pilot testers were colleagues of the researcher. These professionals work in a variety of settings both in and outside of workplace learning and are all active on micro blogs. The various professional experiences enabled a strong reliability test because of the variety of points of view through which the survey was examined.

**Subjects**

**Population and sample.** The population of subjects was drawn from an existing group participating in a weekly synchronous exchange on a micro blog platform, Twitter. The sample was solicited from this population on a voluntary basis. Volunteers for the study were solicited through the weekly structured synchronous #lrnchat sessions. At the beginning and end of the
session, the researcher requested assistance in completing the survey. Participation was requested through a micro blog post. Several different posts were made to invite participants to join the study. This is an example of the type of post that was used to solicit participants: “I am doing research on Twitter and learning and using #lrnchat for the case study. Survey link https://www.surveymonkey.com/s/lrnchat. Thanks for the time!” The request for participation was shared during 4 consecutive weeks of the synchronous #lrnchat exchanges. The length of 4 weeks was selected to generate a fair amount of exposure to participants in the group and involve some participants that may not attend every week, while also avoiding exhausting the #lrnchat group as a resource.

A total of 20 participants completed the #lrnchat survey over the 4 week timeframe. Of those 20 people, 60% were female and 40% male, and 75% of them held an advanced degree beyond their bachelor’s degree. Eighty-five percent of the respondents worked in the field of education and 60% identified themselves as working in the field of workplace learning. The years of experience in the field was notable as 70% of the participants had 9 or more years of experience. Of this group of 20, eight initially agreed to participate in the second phase of the study, the interview; however, only four interviews were able to be conducted.

Phase 2: Interviews

Survey participants that chose to opt in for the follow on phone survey moved into phase 2 of this mixed method study. Interview participants self-selected based on personal interest in participating in the phone interview phase of the study. The process of posting the online survey link during #lrnchat sessions, and then during the survey asking respondents if they would be interested in participating in a phone interview provided an additional benefit. The added benefit was that there is a strong likelihood that only respondents that have utilized the #lrnchat micro
blog either intentionally or unintentionally as a means to gain knowledge for benefit in the workplace would participate in the survey. The group that uses micro blogs for workplace knowledge development is the community on which this study focuses. The ability to narrow down the pool of micro blog users to those that use micro blogs for the purpose of workplace learning is vital to understanding this phenomenon better. Using a case study based on #lrnchat narrows the potential candidates for interviews based on their participation in this specific micro blog synchronous idea exchange based on workplace learning.

Interviews were conducted beyond the survey to provide a different level of information gathering. The survey provided a broad overview of information whereas the interviews allowed the researcher to gain a deeper understanding of how and why end users of the #lrnchat group use participation in the micro blog to facilitate learning. The use of both the survey and interview process provided a more balanced view of how micro blogs might be used as platforms for workplace learning.

Eight individuals volunteered to participate in the interview phase of the study; however, only four participants completed the interview. The four interview participants were split equally based on gender. Three of the four participants worked directly in education. None of the participants had taken a role in the facilitation of the #lrnchat group.

**Interview Construction**

Structured interviews with #lrnchat community members were conducted over the phone. Structured interviews allowed the interviewer to utilize an interview guide containing questions as well as probes allowing the flexibility to gather organic participant thoughts. Additionally, the interview guide facilitated a sense of focus on the topic in order to preserve the intent of the study (Bryman, 2008).
During these interviews, participants were asked a series of questions regarding their participation in #lrnchat for the purpose of learning for the benefit of their chosen profession, what engages them in the learning, how they select whom to follow on the micro blog, and how these selections impact the learning value gained from participation on a micro blog. Finally, participants were asked about best practices that they had developed through their use of the #lrnchat forum.

Interview Protocol

The interview protocol describes the procedures that were undertaken during the course of the participant interviews. The interview followed an interview guide, which detailed the interviewer’s introduction, welcome, and opening explanation of the purpose of the interview. A structured interview method was used to gather data from the participants. A structured interview occurs when a study participant is asked to respond to a series of specific predetermined questions (Wallen & Fraenkel, 2000). The structured interview method was selected to encourage unprompted responses from the participants and generate a rich data sample.

Procedures for interview. During the interview process, the study participant was contacted through phone or email and an interview was scheduled. All interviews were conducted via phone. At the prearranged interview time, the researcher called the study participant. Prior to beginning each interview the researcher would then ask the participant to confirm that he/she had signed the online consent form to participate in the phone interview and ask for permission to record the phone call. The researcher shared information on the research and reiterated the information contained in the consent form, contact information for Pepperdine University’s Internal Review Board (IRB), and contact information for the academic advisor. Following the introduction, a series of open-ended questions was asked with follow-up probe
questions if needed. During the interview, the researcher asked the study participant the following series of questions:

1. What have you learned from your participation in #lrnchat that has benefitted your chosen profession?
2. Where else might you have encountered this particular learning? Why do you feel you attribute the learning to your participation in #lrnchat?
3. How else (beyond participation in #lrnchat) does your involvement in the micro blog impact your workplace learning?
4. How do you select whom to follow on the micro blog that might enhance what you learn from your participation?
5. What best practices have you learned based on your experience with a micro blog?

When a study participant’s answer needed additional clarification, the researcher asked follow-up or probing questions, such as:

1. Can you tell me more about ____?
2. What was your thought process in making that decision?
3. Can you explain that to me a little more?

Each interview lasted between 30-45 minutes. Table 2 presents each of the predefined interview questions and the study research question to which it corresponds. Upon conclusion of the interview, in appreciation of their time, participants were offered a choice between movie passes or a donation in their name to the non-profit of their choice.
Table 2

*Interview Questions’ Relationship to Research Questions*

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Question</th>
<th>Research Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What have you learned from your participation in #lrnchat that has benefitted your chosen profession?</td>
<td>#2</td>
</tr>
<tr>
<td>2</td>
<td>Where else might you have encountered this particular learning? Why do you feel you attribute the learning to your participation in #lrnchat?</td>
<td>#2, #3</td>
</tr>
<tr>
<td>3</td>
<td>How else (beyond participation in #lrnchat) does your involvement in the micro blog impact your workplace learning?</td>
<td>#2</td>
</tr>
<tr>
<td>4</td>
<td>How do you select whom to follow on the micro blog that might enhance what you learn from your participation?</td>
<td>#3</td>
</tr>
<tr>
<td>5</td>
<td>What best practices have you learned based on your experience with a micro blog?</td>
<td>#4</td>
</tr>
</tbody>
</table>

**Institutional Review Board Approval**

This study was submitted to the Pepperdine University Graduate and Professional Schools Institutional Review Board (IRB) with a request for an exemption (Appendix C). The study did not focus on a protected class and poses minimal potential of risk to study participants. The design of this mixed methods study required that study participants self-initiate their participation in the first phase. During the online survey participants were asked if they were willing to participate further in the study by completing a phone interview if they were selected. At this point, participants had the ability to decline further participation, and no contact information was collected from them if they declined. Participants were given the ability to opt out of the study at any time.

Since there was no foreseeable harm to participants and their identities would be protected, the proposed study was approved as an exempt study. In addition, the researcher was granted a Waiver of Alteration of Informed Consent Procedures allowing participant consent.
forms to be completed online. Upon IRB approval, the researcher began phase 1 of the study by soliciting participation in the online survey through #lrnchat.

**Data Collection**

**Survey data gathering procedures.** The survey was administered using an online survey engine, SurveyMonkey. This method was selected for multiple reasons. The link to the survey (https://www.surveymonkey.com/s/lrnchat) could be shared via micro blog post, allowing the researcher to use #lrnchat itself to share the survey with potential participants. Being able to electronically distribute the survey minimized the need to be in close geographical proximity to the survey participants. The electronic survey also created an opt-in situation for the participants. If a potential participant received the link to the survey and did not want to participate, he/she had the ability to not participate and remain anonymous. The survey also contained an electronic consent form that was completed in the affirmative prior to allowing the participant access to the remainder of the survey questions.

The online survey also provided a second opt-in level for participants. The survey responses were anonymous unless the participant agreed to be contacted for the phone interview. Even if a participant agreed to participate in the phone interview their identities were not attached to their interview responses. The addition of anonymity provided a greater level of candor in answering survey questions, while also allowing participants a chance to verify their willingness to participate in the study with a second opt in opportunity. Participants that agreed to participate in the phone interview were assured that their personal information would not be associated with the data submitted in the publication of the study and would only be used for interview scheduling reasons. To ensure this confidentiality, each interview participant was assigned a pseudonym such as Participant 1, Participant 2, etc.
**Data Analysis**

Data analysis was conducted differently for each phase of this study. The online survey provided quantitative data and was analyzed using statistical methods, while the narrative from the phone interviews was analyzed using qualitative methods.

**Survey analysis.** The study is exploring people who participate in the #lrnchat microblogging community for the purpose of learning and whether or not this community would be defined as a community of practice. The data received from the online survey were analyzed using basic statistical methods and used as a solicitation for the interview phase of the study. Table D1 in Appendix D provides information on the different statistical methods that were used to analyze the questions in the survey. Following the demographic information, the second section of the survey sought to determine the level of participation in the #lrnchat community. The third section investigated the #lrnchat community as it compares to other professional development resources to determine sources of quality and timely information. The fourth section of the survey measured the level of perceived engagement in the #lrnchat community of practice. The results provided quantitative descriptive data on how information shared via the #lrnchat group is used in the workplace, how it compares with other professional development resources, and whether this forum supports a community of practice.

**Interview analysis.** In this study, interview participants were asked to give consent for their responses to be recorded to ensure all of their narratives are captured accurately. Narrative responses from all participants were transcribed. The transcripts of the interviews were then compiled using NVivo 10 to identify themes or categories that emerged across the interviews. The first step of analysis involved looking for and capturing specific statements or phrases that pertained specifically to the questions asked. The researcher then looked at these statements
collectively and formulated themes across the different narratives. Some of the themes may have contrasted with others, but this discrepancy only added greater clarity to the uniqueness of the phenomenon being studied. Finally, based on the overarching themes, a descriptive narrative encompassing the collection of experiences was written. The result was a collection of common themes across all micro blog participants’ experiences and a thorough explanation of the phenomenon of using a micro blog as a tool for learning.

**Summary**

Little research has been done exploring the use of micro blogs as a workplace learning vehicle. A mixed methods study was designed and used to describe the phenomenon of micro blogs being a vehicle for learning through the development of communities of practice. The two-phase study was proposed and approved by the Pepperdine University Graduate and Professional Schools IRB. Upon approval, the first phase of data collection began using #lrnchat, a learning community on a micro blog site. Through the weekly synchronous exchanges on #lrnchat, the researcher asked participants to volunteer for an online survey. During the survey, participants were invited to continue on to phase 2 of the study by participating in a phone interview on their micro blog use. The data from the online survey were collected and analyzed using basic statistical methods. The phone interview transcripts were transcribed and reviewed for common themes. Table 3 outlines how both phases of this mixed methods study address the research questions. The combination of both of these data sources provided a rich description of the phenomenon of using micro blogs as a vehicle for learning and the potential for micro blogs to support communities of practice.
Table 3

*Instrument Questions’ Relationship to Research Questions*

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Survey Questions</th>
<th>Interview Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using #lrnchat as the case study, how do #lrnchat participants choose to participate?</td>
<td>#12-20</td>
<td>N/A</td>
</tr>
<tr>
<td>How is the information shared on #lrnchat used in the workplace?</td>
<td>#25-26</td>
<td>#1-3</td>
</tr>
<tr>
<td>How does the #lrnchat micro blog community compare to other sources of professional development?</td>
<td>#21-24</td>
<td>#2, #4</td>
</tr>
<tr>
<td>What best practices have been identified in using a micro blog for the purpose of learning?</td>
<td>N/A</td>
<td>#5</td>
</tr>
<tr>
<td>Does the #lrnchat micro blog function as a community of practice?</td>
<td>#27-38</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Chapter 4: Results

The purpose of this study was to explore the use of a micro blog to advance workplace learning. Micro blogs are a form of social media that limits each message to 140 characters. The most widely recognized micro blog is Twitter. A synchronous Twitter micro blog group, #lrnchat, was selected as a case study for this research. Using this case study, the research sought to (a) explore why participants participate in this micro blog; (b) assess how the information shared on this micro blog is used in the workplace; (c) compare this micro blog community to other professional development resources; (d) identify best practices for using a micro blog for the purpose of learning; and (e) determine if the #lrnchat micro blog community functions as a community of practice. The study was conducted using a mixed methodology approach including both an online survey and a qualitative interview.

Analysis of Survey Responses

For the demographic outlined in Chapter 3, the following responses were collected for the survey items. Question 12 began the data collection portion of the survey and asked how #lrnchat participants learned about this micro blog synchronous chat. Fifty-five percent of respondents stumbled on the micro blog resource as depicted in Table 4.

Table 4

| Frequency Counts for “How Did You First Learn About #lrnchat?” Sorted by Highest |
|-----------------------------------|-----|-----|
| Rating                           | n   | %   |
| Stumbled on it                   | 11  | 55.0|
| Do not remember                  | 4   | 20.0|
| Other                            | 4   | 20.0|
| From a colleague                 | 2   | 10.0|
| Mentioned at a conference        | 1   | 5.0 |
| Through an article               | 1   | 5.0 |

Note. N = 20. Respondents were allowed to give multiple responses.
The next several questions on the survey asked about participant behavior with #lrnchat. Question 13 asked about frequency of attendance to the weekly micro blog synchronous chat. The majority of respondents (60%) said that they attend two or more times per month. Question 14 asked whether or not respondents schedule their participation in the weekly chat or if they just try to remember to attend. Forty percent of participants indicated that they schedule their attendance, while 50% try to remember to attend. Question 15 asked whether or not participants multitask during the synchronous micro blog discussion. Eighty percent of respondents either multitasked sometimes or regularly during the #lrnchat exchange. Table 5 outlines the breakdown of the responses for questions 13-15.

Table 5

*Frequency Counts for Selected Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Attendance Frequency #lrnchat</td>
<td>2+ times a month</td>
<td>12</td>
<td>60.0</td>
</tr>
<tr>
<td></td>
<td>Once a month</td>
<td>3</td>
<td>15.0</td>
</tr>
<tr>
<td></td>
<td>Once every couple of months</td>
<td>4</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>Once every six months</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td>14. Scheduling #lrnchat</td>
<td>Schedule your attendance i.e.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>it is on your calendar</td>
<td>8</td>
<td>40.0</td>
</tr>
<tr>
<td></td>
<td>Try to remember to connect on Thursdays</td>
<td>10</td>
<td>50.0</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>2</td>
<td>10.0</td>
</tr>
<tr>
<td>15. Multitasking during #lrnchat</td>
<td>Yes</td>
<td>9</td>
<td>45.0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>4</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>Sometimes</td>
<td>7</td>
<td>35.0</td>
</tr>
</tbody>
</table>

*Note. N = 20.*
Question 16 delved into how #lrnchat participants interact with the group during the micro blog synchronous exchange. The survey allowed respondents to select what percentage of their time spent during the synchronous exchange they (a) just read without letting others know you are participating; (b) introduce themselves, but do not contribute to the discussion; (c) actively tweet and participate in the discussion; and (d) multitask, catching some of the posts and missing others. Selection, (c) actively tweet and participate in the discussion, received the highest number of respondents \((n = 16)\), while selection, (d) multitask, catching some of the posts and missing others, was close behind \((n = 15)\). The highest median response was, (c) actively tweet and participate in the discussion, earning an 80% affirmative response. Table 6 shows all of the responses.

Table 6

Descriptive Statistics for Participation as Percentage of Time during #lrnchat Session

<table>
<thead>
<tr>
<th>Response</th>
<th>(n)</th>
<th>Low</th>
<th>High</th>
<th>Mdn</th>
</tr>
</thead>
<tbody>
<tr>
<td>16a. Just read without letting others know you are participating</td>
<td>11</td>
<td>0.0</td>
<td>90.0</td>
<td>5.0</td>
</tr>
<tr>
<td>16b. Introduce yourself, but do not contribute to the discussion</td>
<td>9</td>
<td>0.0</td>
<td>20.0</td>
<td>0.0</td>
</tr>
<tr>
<td>16c. Actively tweet and participate in the discussion</td>
<td>16</td>
<td>20.0</td>
<td>100.0</td>
<td>80.0</td>
</tr>
<tr>
<td>16d. Multi-task, catching some of the posts and missing others</td>
<td>15</td>
<td>0.0</td>
<td>40.0</td>
<td>15.0</td>
</tr>
</tbody>
</table>

Note. \(N = 20\).

Question 17 asked respondents how much time they typically spend participating in #lrnchat. Seventy-five percent of respondents said they spend the entire 60 minutes participating in the micro blog exchange. Table 7 shows the breakdown of responses.
Table 7

*Time Spent Participating in #lrnchat*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. Time Participating</td>
<td>Less than 15 minutes</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>15 minutes</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>30 minutes</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>45 minutes</td>
<td>2</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>60 minutes - the full time</td>
<td>15</td>
<td>75.0</td>
</tr>
</tbody>
</table>

During the #lrnchat exchange different resources are shared. Question 18 asked if participants follow the links that are shared during the exchange. Fifty-five percent said they do follow the links provided, 45% said they sometimes follow the links, and respondents said that they did not follow links. Question 19 asked if participants take notes on what is shared. Seventy percent of respondents said that they do not take notes during the synchronous exchange. However, 65% of respondents said that they do review the transcripts posted on the lrnchat.com website. Details of the responses related to this question are outlined in Table 8.

Table 8

*Follow Links Posted in #lrnchat*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Follow Links</td>
<td>Yes</td>
<td>11</td>
<td>55.0</td>
</tr>
<tr>
<td></td>
<td>Sometimes</td>
<td>9</td>
<td>45.0</td>
</tr>
<tr>
<td>19. Take Notes</td>
<td>Yes</td>
<td>2</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>14</td>
<td>70.0</td>
</tr>
<tr>
<td></td>
<td>Sometimes</td>
<td>4</td>
<td>20.0</td>
</tr>
<tr>
<td>20. Review Transcripts</td>
<td>Yes</td>
<td>13</td>
<td>65.0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>7</td>
<td>35.0</td>
</tr>
</tbody>
</table>

The next survey question investigated behavior outside of the micro blog synchronous exchange. Question 21 asked respondents if they engage with other #lrnchat participants outside
of the designated #lrnchat exchange on Thursdays. Ninety percent of the respondents said that they did interact with other participants outside the synchronous exchange (see Table 9).

Table 9

*Frequency Counts for Selected Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. Do you engage with other #lrnchat participants outside of the designated #lrnchat exchange on Thursdays?</td>
<td>Yes</td>
<td>18</td>
<td>90.0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>2</td>
<td>10.0</td>
</tr>
</tbody>
</table>

*Note. N = 20.*

The next area of the survey asked respondents what resources they use for professional development. Ten choices were given and participants were allowed to select multiple answers. The most frequently selected resource was professional publications (magazines, journals, etc.) with 95%. The next highest selected resources were Twitter, colleagues, and blogs with 90% each. Table 10 outlines all of the frequencies for the professional development resources.

Table 10

*Frequency Counts for Use of Occupational Resources Sorted by Highest Frequency*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>22b. Professional publications (magazines, journals, etc.)</td>
<td>19</td>
<td>95.0</td>
</tr>
<tr>
<td>22f. Twitter</td>
<td>18</td>
<td>90.0</td>
</tr>
<tr>
<td>22i. Colleagues</td>
<td>18</td>
<td>90.0</td>
</tr>
<tr>
<td>22g. Blogs</td>
<td>18</td>
<td>90.0</td>
</tr>
<tr>
<td>22h. Websites</td>
<td>17</td>
<td>85.0</td>
</tr>
<tr>
<td>22a. Professional conferences</td>
<td>16</td>
<td>80.0</td>
</tr>
<tr>
<td>22d. LinkedIn (groups, etc.)</td>
<td>15</td>
<td>75.0</td>
</tr>
<tr>
<td>22c. Local professional organizations</td>
<td>12</td>
<td>60.0</td>
</tr>
<tr>
<td>22j. Reference manuals</td>
<td>9</td>
<td>45.0</td>
</tr>
<tr>
<td>22e. Facebook</td>
<td>8</td>
<td>40.0</td>
</tr>
</tbody>
</table>

*Note. N = 20. Respondents were allowed to give multiple responses.*
When organizing the frequency counts for occupational resources used at least monthly, as displayed in Table 11, the most frequently used occupational resource was Twitter with 18 responses (95.0%), followed by websites (85%), colleagues (85.0%), and blogs (80.0%). The least frequently used resources were local professional organizations and professional conferences, each with 10.0%.

Table 11

*Frequency Counts for Occupational Resources Used Monthly, Weekly, or Daily Sorted by Highest Frequency*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>23f. Twitter</td>
<td>18</td>
<td>95.0</td>
</tr>
<tr>
<td>23i. Colleagues</td>
<td>17</td>
<td>85.0</td>
</tr>
<tr>
<td>23h. Websites</td>
<td>17</td>
<td>85.0</td>
</tr>
<tr>
<td>23g. Blogs</td>
<td>16</td>
<td>80.0</td>
</tr>
<tr>
<td>23b. Professional publications (magazines, journals, etc.)</td>
<td>15</td>
<td>75.0</td>
</tr>
<tr>
<td>23d. LinkedIn (groups, etc.)</td>
<td>13</td>
<td>65.0</td>
</tr>
<tr>
<td>23e. Facebook</td>
<td>8</td>
<td>40.0</td>
</tr>
<tr>
<td>23j. Reference manuals</td>
<td>8</td>
<td>40.0</td>
</tr>
<tr>
<td>23c. Local professional organizations</td>
<td>2</td>
<td>10.0</td>
</tr>
<tr>
<td>23a. Professional conferences</td>
<td>2</td>
<td>10.0</td>
</tr>
</tbody>
</table>

*Note. N = 20. Respondents were allowed to give multiple responses.*

Table 12 displays the frequency counts for occupational resources rated by quality response. The resources with the highest quality responses as rated by respondents were professional conferences with 15 (75.0%), followed by professional publications with 13 (65.0%), and blogs with 12 (60.0%). Lowest quality was rated for Facebook with 2 (10.0%) and LinkedIn (groups, etc.) with 4 (20.0%).
Table 12

*Frequency Counts for Occupational Resources Rated by Quality Response Sorted by Highest Frequency*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>24a. Professional conferences</td>
<td>15</td>
<td>75.0</td>
</tr>
<tr>
<td>24b. Professional publications (magazines, journals, etc.)</td>
<td>13</td>
<td>65.0</td>
</tr>
<tr>
<td>24g. Blogs</td>
<td>12</td>
<td>60.0</td>
</tr>
<tr>
<td>24i. Colleagues</td>
<td>10</td>
<td>50.0</td>
</tr>
<tr>
<td>24h. Websites</td>
<td>9</td>
<td>45.0</td>
</tr>
<tr>
<td>24f. Twitter</td>
<td>9</td>
<td>45.0</td>
</tr>
<tr>
<td>24j. Reference Manuals</td>
<td>8</td>
<td>40.0</td>
</tr>
<tr>
<td>24c. Local professional organizations</td>
<td>8</td>
<td>40.0</td>
</tr>
<tr>
<td>24d. LinkedIn (groups, etc.)</td>
<td>4</td>
<td>20.0</td>
</tr>
<tr>
<td>24c. Facebook</td>
<td>2</td>
<td>10.0</td>
</tr>
</tbody>
</table>

*Note. N = 20. Respondents were allowed to give multiple responses.*

Table 13 displays the frequency counts for occupational resources rated by timely response. The resources with the most timely responses were deemed to be Twitter, blogs, and colleagues, with 15 selections each (75.0%), followed by websites and LinkedIn with 13 selections each (65.0%). Least timely responses were local professional organizations (3 responses or 15.0%) and professional conferences (2 responses or 10.0%).

All of the survey participants agreed that the information shared by others during #lrnchat is useful in their profession (question 25, n = 20). When asked how frequently they are able to use the information gained during #lrnchat in their work, respondents varied in their responses. Fifty percent said that they were able to use the information on a weekly basis, 25% said they use the information daily, and the final 25% said they are able to use the information monthly. Table 14 displays the results.
Table 13

*Frequency Counts for Occupational Resources Rated by Timely Response Sorted by Highest Frequency*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>24g. Blogs</td>
<td>15</td>
<td>75.0</td>
</tr>
<tr>
<td>24f. Twitter</td>
<td>15</td>
<td>75.0</td>
</tr>
<tr>
<td>24i. Colleagues</td>
<td>15</td>
<td>75.0</td>
</tr>
<tr>
<td>24h. Websites</td>
<td>13</td>
<td>65.0</td>
</tr>
<tr>
<td>24d. LinkedIn (Groups, etc.)</td>
<td>13</td>
<td>65.0</td>
</tr>
<tr>
<td>24e. Facebook</td>
<td>7</td>
<td>35.0</td>
</tr>
<tr>
<td>24b. Professional publications (magazines, journals, etc.)</td>
<td>7</td>
<td>35.0</td>
</tr>
<tr>
<td>24j. Reference Manuals</td>
<td>4</td>
<td>20.0</td>
</tr>
<tr>
<td>24e. Local professional organizations</td>
<td>3</td>
<td>15.0</td>
</tr>
<tr>
<td>24a. Professional conferences</td>
<td>2</td>
<td>10.0</td>
</tr>
</tbody>
</table>

*Note.* $N = 20$. Respondents were allowed to give multiple responses.

Table 14

*Frequency Counts for Selected Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>25. Is the information shared by others during #lrnchat useful to you in your profession?</td>
<td>Yes</td>
<td>20</td>
<td>100.0</td>
</tr>
<tr>
<td>26. How frequently are you able to use information gained from the #lrnchat exchange in your work?</td>
<td>Daily</td>
<td>5</td>
<td>25.0</td>
</tr>
<tr>
<td></td>
<td>Weekly</td>
<td>10</td>
<td>50.0</td>
</tr>
<tr>
<td></td>
<td>Monthly</td>
<td>5</td>
<td>25.0</td>
</tr>
</tbody>
</table>

*Note.* $N = 20$.

The final section of the survey investigated #lrnchat as a community of practice. Questions 27-38 were taken from an existing instrument developed to measure two aspects of a community of practice: the group’s ability to assimilate shared knowledge and put it into use, and the level of engagement a person feels within a community of practice. This instrument was developed by Cadiz et al. (2009) and consists of 12 statements measured on a 6-point Likert scale ranked from *strongly disagree* to *strongly agree*. The results are summarized in Table 15.
Table 15

*Ratings of Community of Practice Scale Items*  

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. I feel comfortable communicating freely with others in my field.</td>
<td>5.20</td>
<td>0.89</td>
</tr>
<tr>
<td>28. In my field there is an open environment for free communication.</td>
<td>5.20</td>
<td>1.01</td>
</tr>
<tr>
<td>29. It is easy to communicate with others in my field.</td>
<td>5.15</td>
<td>0.88</td>
</tr>
<tr>
<td>30. My field has a unique vocabulary.</td>
<td>4.95</td>
<td>0.76</td>
</tr>
<tr>
<td>31. There is a common understanding within my field of the words and meanings that are used within the field.</td>
<td>4.40</td>
<td>0.94</td>
</tr>
<tr>
<td>32. People outside my field might have difficulty understanding the vocabulary members of my field use to talk about the field.</td>
<td>4.70</td>
<td>0.98</td>
</tr>
<tr>
<td>33. Collaborating with other members of my field helps me to remember things that we have learned.</td>
<td>5.35</td>
<td>0.67</td>
</tr>
<tr>
<td>34. Participating in meetings with members of my field helps me to remember things that we have learned.</td>
<td>5.00</td>
<td>0.65</td>
</tr>
<tr>
<td>35. Lessons learned from past experiences shared within my field are easily remembered.</td>
<td>4.85</td>
<td>0.88</td>
</tr>
<tr>
<td>36. I interact with others in my field with the intention of learning from them.</td>
<td>5.55</td>
<td>0.69</td>
</tr>
<tr>
<td>37. I learn new skills and knowledge from collaborating with others in my field.</td>
<td>5.65</td>
<td>0.59</td>
</tr>
<tr>
<td>38. Learning is shared among members of my field.</td>
<td>5.30</td>
<td>1.13</td>
</tr>
</tbody>
</table>

*Note. N = 20. Ratings based on a 6-point metric: 1 = Strongly Disagree to 6 = Strongly Agree.*

**Analysis of Interview Responses**

Of the eight interview volunteers, only four were able to complete the interview phase of the study due to several factors. Five questions were asked of each interview participant:

1. What have you learned from your participation in #lrnchat that has benefited your chosen profession?

2. Where else might you have encountered this particular learning? Why do you feel you attribute the learning to your participation in #lrnchat?

3. How else (beyond participation in #lrnchat) does your involvement in the micro blog impact your workplace learning?

4. How do you select whom to follow on the micro blog that might enhance what you learn from your participation?
5. What best practices have you learned based on your experience with a micro blog?

Each of these questions was asked following a verbal introduction and overview of the study, and after permission was granted to record the interview. Appendix E contains the interview script that was used to introduce the interview with each participant.

Interviews were recorded with the participants’ permission. Following the interviews, each was transcribed and then coded. A total of four interviews were prepared and imported using NVivo 10 qualitative software and coded regarding six categories created based on the interview questions. Additional subcategories for each of the six parent categories were created as each line was read and coding was refined within the categories. An additional category was created titled Themes – major emerging, with subcategories compiled by merging similarly titled subcategories from the original six parent categories subsets; these provide a complete overview of the responses with respect to important themes relating to the use and value of micro blogs.

The result is a total of seven parent categories with 47 subcategories for the four interviews. Based on the NVivo 10 analysis, several themes emerged from these questions; each question had between two and 10 themes emerge.

Interview question one asked participants what they had learned from #lrnchat that had benefitted them professionally. Several themes emerged from the responses. Participants clearly identified that #lrnchat acted as a networking community for them in their professional pursuits. The forum allowed the exchange of ideas and discussions around topics of interest. #lrnchat also allowed for self-directed delivery and access to shared resources, all of which benefited participants professionally.

The second interview question had two parts. The first part of the question asked participants where else they may have found information or resources similar to what they are
receiving with #lrnchat. The second part of the question asked why the respondent attributes the learning to #lrnchat as opposed to one of the other resources. The answers to the first question were disparate as only two themes emerged. Two of the participants mentioned involvement with their former institutions of higher education as resources for similar learnings. One participant mentioned a professional learning organization that has a strong web presence, eLearning Guild. Otherwise, other individual Twitter members and Twitter groups were mentioned. The second part of this question, which asked about why participants’ learnings were attributed to #lrnchat, presented themes that did not answer the question at hand directly. The first emerging theme was around communities and networking. The next emerging theme centered on the idea of exchanges and discussions. The themes spoke to the source of value on #lrnchat, but not necessarily why #lrnchat was attributed as the source of the learning.

The third interview question asked participants how else their involvement with a microblog (beyond #lrnchat) impacts their workplace learning. The primary theme to emerge from this question was the importance of communities and networking. The second most prominent theme was idea exchanges and discussions. Participants mentioned other micro blog groups to which they belonged. The ability to gain access to leaders in the field via the micro blog was also mentioned as a benefit of micro blog interactions.

The fourth interview question asked participants how they selected whom to follow on Twitter. The themes were communities and networking along with idea exchanges and discussions, followed by managing personal networks and being selective about the feeds they follow. Participants indicated that based on their involvement in #lrnchat they were able to find and connect with other similar minded individuals that would further add to their network and provide insight on areas of importance to interviewees.
The final interview question asked interviewees what best practices they have identified through their involvement with #lrnchat. The first best practice theme was to be selective. Participants were selective in different ways. Some were selective about whether the micro blog is used for professional or personal use, whereas others commented on being selective regarding whom they follow on the micro blog so that the information feed does not get cluttered with useless information. This dovetails nicely with the second theme, content management. Having a limited number of characters forces users to be concise in their statements and, depending on how the micro blog is being used for professional or personal purposes, the user may choose whether or not to post on some topics.

As an overview, a list of the top seven themes and the interview questions to which they pertained are depicted in Table 16. It may be noted that both interview questions two and five did not identify any of the top seven themes overall.

Table 16

*Major Emerging Themes by Interview Question*

<table>
<thead>
<tr>
<th>Interview Question</th>
<th>Communities – networking</th>
<th>Idea exchanges and discussions</th>
<th>Personal development tool</th>
<th>Self-directed delivery</th>
<th>Shared resources</th>
<th>Trending – tracking</th>
<th>Workplace Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>IQ1: #lrnchat benefit chosen profession</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>IQ2a: Previous encounter this learning</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>IQ2b: Why attribute learning to #lrnchat</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>IQ3: Micro blog impact workplace learning</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>IQ4: How selections to follow enhance learning</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IQ5: Best practices micro blog</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Research Questions Answered

Participation in a synchronous micro blog community. The first research question sought to identify how participants in a micro blog community chose to participate in that community. #lrnchat was used as the case study to answer this question. This question was answered through frequency counts for responses to survey question 12, “How did you first learn about #lrnchat?” The most frequent response was “Stumbled upon it” with 11 respondents (55.0%), followed by “Do not remember” and “Other” with four responses each (20.0%; Table 17).

Table 17

Frequency Counts for “How Did You First Learn About #lrnchat?” Sorted by Highest

<table>
<thead>
<tr>
<th>Rating</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stumbled on it</td>
<td>11</td>
<td>55.0</td>
</tr>
<tr>
<td>Do not remember</td>
<td>4</td>
<td>20.0</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>20.0</td>
</tr>
<tr>
<td>From a colleague</td>
<td>2</td>
<td>10.0</td>
</tr>
<tr>
<td>Mentioned at a conference</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td>Through an article</td>
<td>1</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Note. N = 20. Respondents were allowed to give multiple responses.

Beyond what led participants to attend #lrnchat, the research also captured the ways in which participants interacted with #lrnchat. Table 18 displays the frequency counts for selected variables pertaining to participation in #lrnchat. Fifteen respondents reported attending #lrnchat at least once a month (75.0%). Despite the relatively frequent attendance, only eight participants reported scheduling #lrnchat on their calendars (40.0%) and half of the participants indicated they “tried to remember to connect on Thursdays.” When asked if they multi-tasked during the #lrnchat session, most (80.0%) reported that they did it at least “sometimes.” Three-quarters
(75.0%) reported participating for the full 60 minutes. Nine participants (45.0%) followed #lrnchat links “Sometimes,” while the rest (55.0%) asserted “Yes.” Most did not take notes during the session (70.0%). About two-thirds of the respondents (65.0%) reviewed the posted transcripts on www.lrnchat.com following the session.

Table 18

*Frequency Counts for Selected Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Attendance Frequency #lrnchat</td>
<td>2+ times a month</td>
<td>12</td>
<td>60.0</td>
</tr>
<tr>
<td></td>
<td>Once a month</td>
<td>3</td>
<td>15.0</td>
</tr>
<tr>
<td></td>
<td>Once every couple of months</td>
<td>4</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>Once every 6 months</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td>14. Scheduling #lrnchat</td>
<td>Schedule your attendance, i.e., it is on your calendar</td>
<td>8</td>
<td>40.0</td>
</tr>
<tr>
<td></td>
<td>Try to remember to connect on Thursdays</td>
<td>10</td>
<td>50.0</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>2</td>
<td>10.0</td>
</tr>
<tr>
<td>15. Multitasking during #lrnchat</td>
<td>Yes</td>
<td>9</td>
<td>45.0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>4</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>Sometimes</td>
<td>7</td>
<td>35.0</td>
</tr>
<tr>
<td>17. Time Participating</td>
<td>Less than 15 minutes</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>15 minutes</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>30 minutes</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>45 minutes</td>
<td>2</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>60 minutes - the full time</td>
<td>15</td>
<td>75.0</td>
</tr>
<tr>
<td>18. Follow Links</td>
<td>Yes</td>
<td>11</td>
<td>55.0</td>
</tr>
<tr>
<td></td>
<td>Sometimes</td>
<td>9</td>
<td>45.0</td>
</tr>
<tr>
<td>19. Take Notes</td>
<td>Yes</td>
<td>2</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>14</td>
<td>70.0</td>
</tr>
<tr>
<td></td>
<td>Sometimes</td>
<td>4</td>
<td>20.0</td>
</tr>
<tr>
<td>20. Review Transcripts</td>
<td>Yes</td>
<td>13</td>
<td>65.0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>7</td>
<td>35.0</td>
</tr>
</tbody>
</table>

*Note. N = 20.*
Table 19 displays descriptive statistics for participation as a percentage of the total time of the #lrnchat sessions. Most respondents chose “Actively tweet and participate in the discussion” (Mdn = 80%), followed by “Multi-task, catching some of the posts and missing others (Mdn = 15%)” and “Just read without letting others know you are participating (Mdn = 5%).”

Table 19

Descriptive Statistics for Participation as Percentage of Time during #lrnchat Session

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Low</th>
<th>High</th>
<th>Mdn</th>
</tr>
</thead>
<tbody>
<tr>
<td>16a. Just read without letting others know you are participating</td>
<td>11</td>
<td>0.0</td>
<td>90.0</td>
<td>5.0</td>
</tr>
<tr>
<td>16b. Introduce yourself, but do not contribute to the discussion</td>
<td>9</td>
<td>0.0</td>
<td>20.0</td>
<td>0.0</td>
</tr>
<tr>
<td>16c. Actively tweet and participate in the discussion</td>
<td>16</td>
<td>20.0</td>
<td>100.0</td>
<td>80.0</td>
</tr>
<tr>
<td>16d. Multi-task, catching some of the posts and missing others</td>
<td>15</td>
<td>0.0</td>
<td>40.0</td>
<td>15.0</td>
</tr>
</tbody>
</table>

Note. N = 20.

Based on the data gathered regarding how #lrnchat participants choose to participate in the micro blog exchange, many do not remember how they located the #lrnchat community initially, although there is a high frequency of attendance to the synchronous sessions, a high level of active exchange, and many participants attend the full hour of the interaction. Evaluating the data has uncovered that while 80% of participants said that they participate actively in the discussion and only 15% admit to multitasking and catching some of the posts while missing others, 80% say they are multitasking at some level during the exchange. Survey participants indicated a strong level of participation once they located #lrnchat.

Bringing information from #lrnchat into the workplace. Research question two asked “How is the information shared on #lrnchat used in the workplace?” To answer this, Table 20 displays frequency counts for selected variables as pertaining to the information shared during #lrnchat. All 20 respondents (100.0%) answered the question “Is the information shared by others during #lrnchat useful to you in your profession?” in the affirmative. When queried about
how frequently they used the information gained from #lrnchat, 15 participants chose either “weekly” (50.0%) or “daily” (25.0%), with the remainder choosing “monthly.”

Table 20

*Frequency Counts for Selected Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>25. Is the information shared by others during #lrnchat useful to you in your profession?</td>
<td>Yes</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>26. How frequently are you able to use information gained from the #lrnchat exchange in your work?</td>
<td>Daily</td>
<td>5</td>
<td>25.0</td>
</tr>
<tr>
<td></td>
<td>Weekly</td>
<td>10</td>
<td>50.0</td>
</tr>
<tr>
<td></td>
<td>Monthly</td>
<td>5</td>
<td>25.0</td>
</tr>
</tbody>
</table>

*Note. N = 20.*

Interview responses continued to investigate the value of information gained through #lrnchat and how it was used in the workplace. Two of the interview questions provided specific examples of how #lrnchat information was used in the workplace:

1. What have you learned from your participation in #lrnchat that has benefitted your chosen profession?

3. How else (beyond participation in #lrnchat) does your involvement in the micro blog impact your workplace learning?

Interview question one had several themes emerge from the responses. Participants clearly identified that #lrnchat acted as a networking community for them in their professional pursuits. The forum allowed the exchange of ideas and discussions around topics of interest. #lrnchat also allowed for self directed delivery and access to shared resources.

Participant 1 described how #lrnchat provided support for his/her professional role through creating a community.

at [company name] specifically, we work in silos so I am actually a member of finance.

And we don’t have a lot of – we do now, but at the time, we did not have a lot of learning
people on staff. So #lrnchat was my lifeline if you will, to what was going on in the learning space, what people were talking about, what were the trends.

Participant 2 went on to talk about the quality of the community presented within #lrnchat.

I think #lrnchat’s a little bit different from some of the other chats because it’s a group of people that are really into the various industries and really speak – are well-spoken and have a lot of resources, a lot of experience to offer up. So it’s kind of a higher level chat if you will.

The third interview question asked, “How else (beyond participation in #lrnchat) does your involvement in the micro blog impact your workplace learning?” The primary theme to emerge from this question was again communities and networking, which Participant 2 described best:

I think [Twitter] has been a major source of learning. So like I was mentioning, it’s a good place to find resources and things that you would have never even thought about. And so it’s a good place to find, you know, other people that are interested, and so it’s a networking opportunity. If you – I haven’t really done this as much, but I’ve seen other people do – you know, if you have a question or a need, you post it and, you know, so sometimes people will respond to that and be able to help you out that way.

Participant 3 also found value in the networking aspect.

You are discussing – you know, you are also getting in touch with interesting people. One of my goals for my product and for my business strategy is to find a certain number of influencers, certain number of people who are well-known, listened to in – in some areas where I’m interested in…So one of the goals of using Twitter is that they become
aware of me and so maybe they will interact with me, follow me. And like I said, there will possibility to send my reference through that channel.

In addition to the obvious interest in micro blogs for use in creating a community or network, the other theme that emerged was around idea exchanges and discussions.

Participant 3 highlighted how people are now using Twitter to follow certain ideas or topics specifically rather than just following the traditional Twitter timeline. By following topics, the Twitter user focusses on information he or she specifically seeks. “[P]eople who are really using [Twitter], they either follow hashtags…or they follow lists. So they make lists on different subjects and they follow the list.”

Based on the data, participants agreed unanimously that they receive value from the information exchanged through the micro blog synchronous exchange. A majority of those respondents are using the information on a weekly basis at minimum. The ways in which the information is being used in the workplace is by allowing the creation of a network of participants interested in similar topics. Utilizing this network of individuals created through the micro blog synchronous discussion, a variety of ideas are shared, questions are asked, and discussion is facilitated. Beyond the micro blog case study of #lrnchat, participants are using other elements of the micro blog Twitter in much the same way. The theme of networks and idea exchanges were presented in both scenarios. The information being shared via the micro blog is of value in the workplace on a frequent basis.

**Comparing professional development resources.** Research question three asked “How does the #lrnchat micro blog community compare to other sources of professional development?” The answer to this question is multifaceted. First, in the survey participants were asked to identify which types of professional development resources they use. Then participants
were asked to indicate how frequently each of these resources was used. Finally, respondents were asked if they had a question that merited insight from someone in their respective professions, which of the professional resources would address the question with a quality response and or a timely response. Using this series of questions allows an understanding of frequently used professional development resources and which can be valued as sources of quality and timely information. Table 21 combines the frequencies of the responses of the three questions pertaining to the use of professional resources.

Table 21

*Use of Professional Resources*

<table>
<thead>
<tr>
<th>Resource</th>
<th>Use Count</th>
<th>Daily n</th>
<th>Daily %</th>
<th>Weekly n</th>
<th>Weekly %</th>
<th>Monthly n</th>
<th>Monthly %</th>
<th>Quarterly n</th>
<th>Quarterly %</th>
<th>Annually n</th>
<th>Annually %</th>
<th>Do Not Use n</th>
<th>Do Not Use %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional conferences</td>
<td>16</td>
<td>1</td>
<td>6.25</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6.25</td>
<td>2</td>
<td>12.5</td>
<td>11</td>
<td>68.75</td>
<td>3</td>
<td>18.75</td>
</tr>
<tr>
<td>Professional publications</td>
<td>19</td>
<td>2</td>
<td>10.53</td>
<td>5</td>
<td>26.32</td>
<td>8</td>
<td>42.11</td>
<td>3</td>
<td>15.79</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Local professional organizations</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>16.67</td>
<td>7</td>
<td>58.33</td>
<td>2</td>
<td>16.67</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>LinkedIn</td>
<td>15</td>
<td>2</td>
<td>13.33</td>
<td>7</td>
<td>46.67</td>
<td>4</td>
<td>26.67</td>
<td>1</td>
<td>6.67</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Facebook</td>
<td>8</td>
<td>6</td>
<td>75</td>
<td>2</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>100</td>
</tr>
<tr>
<td>Twitter</td>
<td>18</td>
<td>18</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Blogs</td>
<td>18</td>
<td>8</td>
<td>44.44</td>
<td>8</td>
<td>44.44</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Websites</td>
<td>17</td>
<td>12</td>
<td>70.59</td>
<td>3</td>
<td>17.65</td>
<td>2</td>
<td>11.76</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Colleagues</td>
<td>18</td>
<td>13</td>
<td>72.22</td>
<td>2</td>
<td>11.11</td>
<td>2</td>
<td>11.11</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Reference manuals</td>
<td>9</td>
<td>3</td>
<td>33.33</td>
<td>2</td>
<td>22.22</td>
<td>3</td>
<td>33.33</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>55.56</td>
</tr>
<tr>
<td>Other:</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Webinars</td>
<td>1</td>
<td>1</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>152</td>
<td>66</td>
<td>43.42</td>
<td>29</td>
<td>19.08</td>
<td>23</td>
<td>15.13</td>
<td>13</td>
<td>8.55</td>
<td>13</td>
<td>8.55</td>
<td>19</td>
<td>12.5</td>
</tr>
</tbody>
</table>
Beyond traditional professional resources, participants were asked if they engaged with other participants outside of the #lrnchat synchronous exchange. The 90% positive response to this question lends additional credibility to the value of #lrnchat as a professional resource.

Two interview questions also provided insight on how #lrnchat compares to other sources of professional development:

1. Where else might you have encountered this particular learning? Why do you feel you attribute the learning to your participation in #lrnchat?

2. How do you select whom to follow on the micro blog that might enhance what you learn from your participation?

The first interview question pertaining to how #lrnchat compares to other professional resources had two parts, the first of which sought to uncover where else participants might have garnered similar types of learning. The second part of this question focused on why the learnings were attributed to #lrnchat. The answers to the first question were disparate as only two themes emerged. Two of the participants mentioned involvement with their former institutions of higher education as resources for similar learnings. One participant mentioned a professional learning organization that has a strong web presence, eLearning Guild. Other individual Twitter members and Twitter groups were also mentioned. As Participant 3 noted, Twitter provides a timely resources unlike anything else.

Let’s take the reference manual. The reference manual, you will buy it, you will read it, and in the best case, it will give you what was current 5 or 6 years ago. The time you buy the book, the time the author wrote the book, the time the author collected the material and so on. In the best case, you are – in IT for example, I’m in IT. My primary business is IT. So if you go outside and buy a book about CXS or about html file or whatever, the
best you will get is what happened two or three years ago. If you go on Twitter chats, you get what is current this morning.

The second part of this question which asked about why participants’ learnings were attributed to #lrnchat presented a multitude of themes. The first emerging theme related to communities and networking, which echoes the theme presented in the first interview question. Participant 2 stated that #lrnchat specifically “provided access to people.” Participant 2 went on to say, “And then it’s like then you read some of their work, and it’s like oh, this person’s really interesting. And so it’s kind of - kind of a connection point.”

The next emerging theme centered on the idea exchanges and discussions. Participant 4 credited #lrnchat with spurring new ideas in his/her own work. “I learned a lot in college and from #lrnchat, but I think some of the things that have inspired me the most are just seeing other people’s courses and being inspired.” Participant 4 went on to say that he/she hosts a blog that has many eLearning courses posted in hopes of providing the same inspiration for other professionals.

The next interview question pertaining to how #lrnchat compares to other professional resources asked participants, “How do you select whom to follow on the micro blog that might enhance what you learn from your participation”? As has emerged on the previous three questions, the top theme that emerged was related to communities and networking. Participant 1 said,

I’ve been trying to follow all of the learning folks on Twitter. I think I’ve done a pretty good job finding some key players. And of course, they only introduce you to other people who have kind of unique stock or are doing interesting things.
Participant 2 described the selection process on whom to follow in this way:

I try to be rather selective um just because the feed just gets to be crazy. Um so yeah, just people that are interested in what I’m interested in or doing what I would like to be doing. So I try to kind of use it as a way to kind of build a group of mentors, but mentors from afar, you know. I’m just kind of observing them. But mostly people that are doing what I aspire to do I think so I usually – when I encounter them in a chat or whatever it is, I’ll usually read like their little bio and see what they’re doing and look at some of their tweets or whatnot and see, you know, if it’s someone that would provide information I’m interested in. And I only use Twitter for professional development. I don’t use it for like personal tweeting about my personal life. So I guess professional development.

Participant 4 directly credited #lrnchat for assisting in determining who to follow on Twitter.

I’ll tell you #lrnchat has a lot to do with [who I chose to follow] because I find that when I’m on #lrnchat, I’ll be listening to people that I’m like wow, they’ve got a lot to say or they’re very interesting and I’ll follow them.

This interview question illustrates how #lrnchat provides a vehicle to create stronger networks within the micro blog.

The second emerging theme for this interview question was idea exchange and discussion. Participant 3 shared how the use of “favoriting” others’ posts during a discussion provides the ability to go back and determine whether or not that individual is worth following.

When you follow when you favor a tweet, they can see that you are favoring their tweet. So you are in a way engaging with the person by showing that you are interested by what he or she says, right? And the second step will be for me to look into what I favorited recently. And based on that, I go to these people and I look um – I try to look who they
are so I will look on their page. I will look who they follow. I will look at things like this.

And I will keep a screenshot of their profile and what based my decision. And I will follow them.

As demonstrated in this response, Participant 3 articulated a more thorough process by which to determine whether or not to follow someone as compared to the other three interview participants.

Based on the survey and interview data, the #lrnchat micro blog community is seen as a highly valued professional resource. Twitter being used on a daily basis coupled with the high ranking of timeliness of response indicate that expediency of information is valued in a professional development resource. The interviews identified that the use of #lrnchat is a means to uncover quality people with whom to engage through the micro blog. One of the participants went as far as to identify specific mentors on the micro blog.

Best practices for learning from a micro blog. Research question four asked, “What best practices have been identified in using a micro blog for the purpose of learning?” This research question was addressed solely in the interview phase of this study. The final interview question asked participants, “What best practices have you learned based on your experience with a micro blog?” The first emerging theme was to be selective. Participant 1 stated this idea outright; “I think for me at the end of the day, it is all about people and being really selective about who you follow because that’s what’s coming into your feed. That’s what you’re seeing day after day.” Participant 4 focused on a different type of selectivity. Rather than being selective with who he/she follows, Participant 4 focuses on keeping the interaction informal and avoids trying to take everything on the feed in; “I try to stay informal. Don’t try to read everything. You know, I kind of just get it in bite size chunks.”
The second theme that emerged from the final interview question dealt with content management. Participant 2 talked about how to formulate what was going to be shared in the Twitter post. When asked about best practices he/she gained by being active on Twitter, Participant 2 responded,

Um, how to articulate my thoughts a little bit more clear, ‘cause you only have like, what, 140 characters? So you kind of have to think about how you’re framing your message and, you know, who your message might be directed at. So kind of like that internal filtering and thinking about it a little bit.

Participant 4 also had some insight on content management, stating, “I try to be cautious about what I write, but don’t be too cautious ‘cause then you’ll never write anything.”

**#lrnchat as a community of practice.** Research question five asked “Does the #lrnchat micro blog community function as a community of practice?” This question was answered using an instrument that is designed to investigate the elements of a community of practice. The 12 questions on the survey are divided into four categories: open communication, shared vocabulary, remembering previous lessons, and learning from each other. To answer this research question, Table 22 displays descriptive statistics for the four summated community of practice scale scores. These scores were based on a 6-point metric (1 = Strongly Disagree to 6 = Strongly Agree). Highest rated scores were for learning from each other ($M = 5.50$) and open communication ($M = 5.18$). The high ratings in three of the four categories indicate that the #lrnchat group does function as a community of practice.
Table 22

Descriptive Statistics for Summated Scale Scores

<table>
<thead>
<tr>
<th>Score</th>
<th>M</th>
<th>SD</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>CoP Open Communication</td>
<td>5.18</td>
<td>0.73</td>
<td>3.67</td>
<td>6.00</td>
</tr>
<tr>
<td>CoP Shared Vocabulary</td>
<td>3.88</td>
<td>0.59</td>
<td>3.33</td>
<td>5.67</td>
</tr>
<tr>
<td>CoP Remembering Previous Lessons</td>
<td>5.07</td>
<td>0.61</td>
<td>4.00</td>
<td>6.00</td>
</tr>
<tr>
<td>CoP Learning From Each Other</td>
<td>5.50</td>
<td>0.65</td>
<td>3.67</td>
<td>6.00</td>
</tr>
</tbody>
</table>

_Note. N = 20. CoP = Community of Practice Scale. Ratings based on a 6-point metric: 1 = Strongly Disagree to 6 = Strongly Agree._

Conclusion

In conclusion, this study gathered the survey responses from 20 participants and interviews with 4 participants to: (a) using #lrnchat as a case study, determine how participants interact with the micro blog; (b) assess how the information shared on #lrnchat is used in the workplace; (c) compare the #lrnchat micro blog community to other sources of professional development; (d) identify best practices for using a micro blog for learning; and (e) determine if the #lrnchat micro blog community functions as a community of practice. Three key findings from this chapter were the value placed in the #lrnchat community for ongoing workplace learning needs, the benefit of the micro blog format for immediacy of information dissemination, and the strength of #lrnchat as a Community of Practice. In the final chapter, these findings will be compared to the literature, conclusions and implications will be drawn and a series of recommendations will be suggested.
Chapter 5: Micro Blogs and Workplace Learning

Overview

Web 2.0 brought about advancements in the way individuals can interact and publish content online (Alexander, 2006; O’Reilly, 2005). These changes introduced social networks that allowed users to connect with one another and share thoughts, ideas, and resources (Boyd & Ellison, 2007; Cormode & Krishnamurthy, 2008). Of the many different social networks, one platform, micro blogs, is structured in a way that dovetails with Knowles’s (1980) principles of adult learning. This alignment of functionality between the micro blog platform and adult learning principles led this researcher to examine how this platform could be utilized as a forum to facilitate workplace learning. As a means to research this phenomenon, an existing group, #lrnchat, was used as a case study.

Problem and Purpose

Micro blogs are a descendant of blogs, which allow users to publish their thoughts and ideas on the web. Micro blogs limit the number of characters used to 140, making the information posted available in small packages. Delivery of information in small quantities allows consumers and authors greater ease in sharing and consuming information. Readers of the micro blog can select information or authors to which they subscribe. The selection of information or authors dictates the type of information that is visible to the consumer in his/her personal micro blog feed. Platform characteristics, ease of sharing information, small quantities of information, and availability of information when it is desired create a format that supports adult learning principles.

Workplace learning focuses on encouraging the employee to determine his/her own learning needs and select where he/she would like to receive the information (Rowden, 2007).
Adult learning principles support the theoretical research in workplace learning. These principles identify that adults need to: know why they are learning something, have the learning be self-directed, engage his/her own experience in the learning process, learn when they need to know about a topic, have learning be immediately applicable, and seek out learning that they are motivated to learn internally (Knowles et al., 2005). Adults in the workplace have seen an evolution in how information is presented to them. Workplace learning began as predominantly instructor-led training and has evolved into communities of individuals sharing information. Rather than spoon-feeding information to employees through instructor led courses, organizations and industries have found value in developing what Etienne Wenger (2000) called *communities of practice*.

Communities of practice are groups of individuals that share a common interest in a topic. Adult learning principles are utilized intentionally and unintentionally in the exchange of information among these communities of practice. These communities facilitate the exchange of ideas at a time and place when the adult learner needs to learn the information. Communities of practice have been found to have success in online environments (Darabi et al., 2011).

Using the innate platform functionality of the micro blog and the elements that define adult learning and communities of practice, the question arises of whether or not a micro blog could be of value in creating a community of practice and providing benefit to workplace learning initiatives. In order to examine this idea, an existing micro blog group was used as a case study for this research. #lrnchat is a micro blog group using Twitter, a public micro blog platform, to facilitate a synchronous exchange of ideas on a weekly basis. #lrnchat has been in existence since 2007, providing a group of participants using the micro blog platform to facilitate an exchange of ideas.
This study sought to answer the following research questions:

1. Using #lrnchat as the case study, how do #lrnchat participants choose to participate?
2. How is the information shared on #lrnchat used in the workplace?
3. How does the #lrnchat micro blog community compare to other sources of professional development?
4. What best practices have #lrnchat participants identified in using a micro blog for the purpose of learning?
5. Does the #lrnchat micro blog community function as a community of practice?

Methodology

A mixed methods study was utilized to answer the posed research questions. The first phase of the study utilized an online survey asking participants about their experience with #lrnchat. The intent of the survey was to gain a broad perspective from the individuals who participate in the case study group. Participants were solicited through weekly posts during the synchronous #lrnchat exchange. The solicitation asked for volunteers to participate in an online survey. The survey consisted of four sections, the first of which asked for demographic information. The second section focused on the participants’ experience with the #lrnchat group. The third section asked about the use of other professional development resources including frequency of use and the perceived quality and timeliness of information received through the various resources. The final section in the survey was a preexisting instrument designed to measure communities of practice developed by Cadiz et al. (2009). This preexisting instrument measured two aspects of a community of practice: the group’s ability to assimilate shared knowledge and put it to use and the level of engagement the participant feels within the particular community of practice.
During the survey, respondents were asked if they would be interested in participating in a brief interview. The purpose of the interview was to gain greater depth of knowledge on how the information gained through micro blog interaction impacted participants in the workplace and identify best practices utilized to maximize learning through this platform.

Twenty individuals responded to the online survey and four of those 20 participated in the interview phase. The demographics of the survey participants were 60% female and 40% male. Seventy-five percent of the participants held an advanced degree beyond a bachelor’s. Participants self-identified their work affiliation as follows; 85% worked in education and 60% in workplace learning (participants were able to select multiple work categories, explaining the total percentage exceeding 100%). Of the respondents, 70% indicated that they had in excess of 9 years of experience in the workplace. The interview sample was split evenly in terms of gender: 50% women and 50% men. Three of the four interview participants worked directly in education.

Summary of Findings

The first research question asked how participants chose to participate, using #lrnchat as the case study. Evaluating the data uncovered that although 80% of participants said that they actively participate in the discussion and only 15% admit to multitasking and catching some of the posts while missing others, 80% say they are multitasking at some level during the exchange. Survey participants indicated a strong level of participation once the individual located #lrnchat, attending at least monthly and once engaged remaining in attendance for the full 60 minutes.

Research question two asked “How is the information shared on #lrnchat used in the workplace?” Based on the data, participants unanimously agreed that they receive value from the information exchanged through the micro blog synchronous exchange. A majority of those
respondents reported using the information on, at minimum, a weekly basis. One way in which the information is being used in the workplace is by allowing the creation of a network of participants interested in similar topics. Utilizing this network of individuals created through the micro blog synchronous discussion, a variety of ideas are shared, questions are asked, and discussion is facilitated. Beyond the micro blog case study of #lrnchat, participants are using other element of the micro blog Twitter in much the same way. The themes of networks and idea exchanges were presented in both scenarios. The information being shared via the micro blog is of value in the workplace on a frequent basis.

Research question three asked, “How does the #lrnchat micro blog community compare to other sources of professional development?” Based on the survey and interview data, the #lrnchat micro blog community is seen as a highly valued professional resource. Twitter was indicated as being used on a daily basis. Coupled with the high ranking of timeliness of response, the findings indicate that expediency of information is valued in a professional development resource. The interviews identified that the use of #lrnchat is a means to uncover quality people with whom to engage through the micro blog. One of the participants went as far as to identify specific mentors on the micro blog.

Research question four asked “What best practices have been identified in using a micro blog for the purpose of learning?” The interviews uncovered two best practices. The first is to be selective in the data that a participant allows into his/her feed, who one follows on a micro blog, and which topics bring information into an individual’s micro blog information feed. If the information comes from high quality authors/resources then it is of greater value to the learner. The opposite is also true. The second best practice is to avoid trying to read everything that comes through the news feed. Information is exchanged so rapidly that trying to read everything
can be overwhelming and discouraging to the learner. Participants advised catching the 
information one can and letting the rest go.

The final research question asked, “Does the #lrnchat micro blog community function as 
a community of practice?” This question was answered using an instrument designed to look at 
the elements of a community of practice. The 12 questions on the survey are divided into four 
categories: open communication, shared vocabulary, remembering previous lessons, and learning 
from each other. High ratings in three of the four categories indicate that the #lrnchat group does 
function as a community of practice.

Conclusions

Micro blogs are viable platforms for workplace learning. A micro blog platform did 
prove to be a successful vehicle for workplace learning in the case of #lrnchat. The reasons for 
this success lie in the structure of a micro blog, the nature of adult learning, and answers to the 
research questions. These elements come together to explain why this micro blog has provided a 
workplace learning resource for participants.

The foundation of this discussion relies on the platform by which interaction is 
facilitated: the micro blog. This study focused on a single case that took place on the Twitter 
micro blog platform; however, it is believed that the findings are transferrable to other micro 
blog platforms. Micro blogs invite users to create short bursts of information, no more than 140 
characters. Using hashtags, micro blog users can follow a specific topic or conversation (Karch, 
2009; Lomick & Lord, 2012). The use of the hashtag enabled the #lrnchat group to connect and 
participate in the weekly synchronous exchange of ideas. Another feature of a micro blog is that 
unless a user specifically designates that only certain people can see his/her comments, anyone is 
able to read posted comments. This allows micro blog participants to read posts without others
knowing of their presence. #lrnchat participants were asked specifically if they participate in this way and very few said that they did (a median score of five percent of the time). Micro blogs allow everyone to post messages that others can see. When this is done during the #lrnchat synchronous exchange it creates a collection of ideas and thoughts posted around a single topic, creating a synergy of ideas shared that allows learning to take place (Johansson, 2006). With the ability to connect and follow a specific conversation using a hashtag, everyone being able to share and respond contributes to this platform’s ability to facilitate learning.

Applying Knowles’s (1980) adult learning theory to the use of micro blogs may seem like superimposing history on current technology, but, ironically, modern technology does an excellent job of facilitating most of what Knowles postulated. The previous discussion of the micro blog platform laid the foundation for this discussion. Knowles delineated six elements of adult learning. Among them was the need for the adult learner to seek out his/her own learning (Knowles, 1980; Merriam et al., 2007). As was illustrated through the responses on the survey conducted, 90% of #lrnchat participants simply stumbled on the resource. Upon finding the #lrnchat group, participants attended two or more times a month, which affirms that the participants were finding some intrinsic value in the exchange, supporting yet another adult learning element (Knowles, 1980; Reeve, 1992). The survey and interviews with #lrnchat participants indicated overwhelmingly that the information gained from the #lrnchat forum is applicable to the participants. During the interview aspect of the research a participant also indicated that he/she viewed #lrnchat as a “lifeline” because he/she was ready to learn when the topics presented on #lrnchat were something he/she needed to know (Hersey et al., 2001). Finally, the desire and ability to share one’s own experience and integrate into whatever the #lrnchat topic is that week aligns with Knowles’s (1980) final adult learning principle. The open
exchange facilitated by the #lrnchat allows participants to engage fully in the ways that Knowles envisioned adult learning taking place, although probably not via a micro blog platform.

This research study marries the benefits of a micro blog platform with the elements of adult learning through the examination of a case study on #lrnchat. While, theoretically, the overlay between the functions of a micro blog and adult learning theory appear to be a logical match, this research study provides the empirical results to solidify the relationship between the two using #lrnchat as the case study.

A micro blog is seen as a professional resource. #lrnchat participants seek out participation in this micro blog exchange; there is no central listing of micro blog groups. Once participants find #lrnchat, if it provides them what they are seeking, many attend the weekly synchronous exchange more than twice a month and participate for the full hour of the exchange. Participants also indicated that the great majority participated actively in the discussion by posting. This level of dedication indicates that the level of engagement is high. Knowledge is constructed through the articulation of ideas and receiving feedback based on discussion (Brown & Duguid, 1991), which is precisely what is facilitated during the weekly synchronous exchanges.

Looking at the level of involvement in #lrnchat prompts questions about how well and effective the micro blog platform functions as a professional resource. Twitter was identified as the most frequently used professional resource followed by colleagues. One would presume the breadth of reach facilitated by the micro blog platform and access to experts in the field helped Twitter earn this status. Twitter was also identified as being one of the three vehicles that provide timely responses to questions. Similarly, when posing a question to a large group of people, one is more likely to get a response in a timely fashion. The other two resources identified as
providing timely responses were blogs and colleagues. When participants were asked about the quality of answers to questions posed, Twitter was not listed in the top four categories. One possible explanation for this result may be the lack of transparency of past successes or personal experience. During one interview, a participant admitted that he/she had heard of people posting questions on the micro blog and getting answers, but he/she had not done it himself/herself, so he/she did not have first hand experience. If a good professional resource is defined by the frequency of interaction, the timeliness of information, and the quality of information, then Twitter ranks in the top three resources: blogs, colleagues, and Twitter.

When it comes to using a micro blog as a professional resource, some best practices allow the user to obtain as much information as possible. Interview participants graciously shared their best practices freely. One best practice that resonated across interviews was being selective about who one selects to follow on the micro blog. Creating a topical focus for the Twitter feed has also benefitted participants, so when the user reviews his/her feed or stream it is predominantly on a consistent topic. Another best practice is to avoid trying to read everything coming in because it can become daunting and frustrating. When writing on a micro blog it was recommended that the user think through what he/she is trying to say and be concise, but to avoid being too cautious or he/she will never write anything. The final best practice shared is somewhat profound; don’t be afraid to share one’s knowledge. An interview participant explained that many people are concerned that if they share their knowledge through a forum such as #lrnchat, someone will steal their idea and hence impact their ability to generate revenue. The beauty of using a geographically neutral micro blog as a platform for such an exchange of ideas is that the likelihood that someone is in the same area and would act as a direct competitor is small, especially as compared to sharing ideas with a local professional organization. The
transparency in sharing ideas also allows the community created through #lrnchat to be of greater value and therefore enables it to function at a much higher level.

**Micro blogs can facilitate a community of practice.** A community that is centered on a shared topic or professional interest outside of an organizational construct is often identified as a community of practice (Wenger, 2000). Based on the results from the embedded instrument in the survey, #lrnchat was identified as a community of practice. In the case of #lrnchat, it appears that a micro blog can be utilized as the platform to facilitate a community of practice. This empirical finding adds to the body of knowledge on both micro blogs as well as communities of practice. In *Digital Habitats*, Wenger et al. (2009) hypothesized the existence of a community of practice facilitated by technology and even mentioned Twitter briefly. The results of the instrument administered prove this hypothesis.

The information gleaned through this research speak to the value that an organization or group can gain by using a micro blog to assist in learning and idea exchange. As Wenger (2000) asserted when defining a community of practice, the group must be centered on a single idea or topic. Organizations that are working to connect a single function (i.e., marketing) across multiple geographic locations may benefit by creating a micro blog group to which ideas, questions, and suggestions may be posted. Organizations may not be interested in having their micro blog discussions on an open network such as Twitter, in which case other micro blog applications such as Yammer that facilitate the micro blog within a secure network can be used. A group of people that all work in a specialized niche (i.e., community college online education) may use this platform to facilitate a community that is able to provide answers and support to questions and or challenges that may arise in the profession instantly. The greatest benefits of these micro blog communities of practice are the accessibility of experts and the timeliness of
responses. Even if a user posts a question late at night, across the globe a population is in the middle of their workday and can respond easily. Although some view the openness and availability to join communities through simply following the designated hashtag as a threat, it creates an environment that allows and encourages different experiences and perspectives to be shared. The synergy of these ideas can yield great advances in thought and practice (Johansson, 2006).

**Recommendations for Future Research**

Given the findings of the literature review and the findings of this study, it seems evident that micro blogs are a viable platform for workplace learning to happen. However, there are gaps that require further research. Three areas in particular would be ideal for future studies. The first area relates to the definition of a professional workplace resource and whether a micro blog would be considered a viable resource outside of this small sample. This study solicited participants from a micro blog group. Future research should explore whether micro blogs would continue to be viewed as a professional resource by a more generalizable sample, or whether the findings related to this perception were simply a product of the sample for this study.

Another area for future research would be to investigate other micro blog groups (#edchat, #socialchat, etc.) using the Experienced Community of Practice Scale (Cadiz et al., 2009) to determine whether these groups can be considered communities of practice. Depending on the sample size, the researcher could also determine which elements of the groups are common and if the elements (such as synchronous exchanges, posting of transcripts, personal interactions outside of the micro blog feed, etc.) correlate with the community of practice instrument. It would be interesting if other groups are determined to be communities of practice or if #lrnchat is a unique phenomenon.
Finally, this study focused specifically on the impact of learning through a micro blog group within the workplace. Another angle for research would be to explore how micro blogs impact learning on a more personal level, possibly around hobbies and personal interests. The Personal Learning Network theory, as presented by Will Richardson and Rob Mancabelli (2011), is another lens through which to view the use of micro blogs for learning. While discussing this study with colleagues, several references were made to this theory as a support for the research; however, it fell outside the purview of this particular study.

**Limitations of Study**

As with any research project, limitations are uncovered as the study progresses. Upon selecting #lrnchat as the case study for the research, the active population of the group was deemed to be much smaller than originally thought. This size limitation impacted the population participating in the online survey and henceforth the interviews. The smaller sample size did not allow any of the statistical relationships to be generalized. Future research should utilize a larger sample size to enable the researcher to be more confident in the data and generalize the information to a broader population.

The participants in the study were recruited entirely through the #lrnchat synchronous micro blog exchange. All participants self-selected to participate in the survey and the subsequent interview. Self-selection for participation make have created a higher likelihood that participants were fully engaged with #lrnchat and therefore may have produced higher than normal scores pertaining to engagement. Since all of the participants were recruited on the micro blog site, this may have skewed the data in favor of the micro blog platform because it is what participants use for #lrnchat and are familiar with it. Also, using self-selection did not yield any interview participants that were involved in the facilitation of the #lrnchat group. That viewpoint
may have yielded a different perspective on the use of a micro blog platform to facilitate the weekly synchronous exchange.

The common shared topic for the #lrnchat community is learning, which may have skewed the data when discussing how participant learning is used in the workplace. Participants being professionals interested in learning may predicate a higher interest and internal motivation to learn and utilize what is learned in the workplace. This predilection may also impact the finding that this group functions as a community of practice. The community of practice instrument divides the scores into four categories: open communication, shared vocabulary, remembering previous lessons, and learning from each other. The highest scoring category was learning from each other (M = 5.5), which may be skewed based on the learning orientation of the group.

This study only examined one group that utilized a micro blog as a platform for idea exchange. Adding other groups that utilize a micro blog as a platform for group discussion/exchange would allow future researchers to contrast between the groups. As mentioned previously, using multiple groups on the micro blog platform would uncover other means of interacting beyond the synchronous exchange that #lrnchat uses.

Summary

The Internet has evolved, and that evolution yielded Web 2.0, which in turn yielded social networks. Social networks began to find and fill different niches in society. Initially, microblogs were met with skepticism as they were used originally for brief personal updates. Examining the inner workings of a micro blog and comparing these traits to the elements of adult learning theory creates a theoretical match. The next logical question to ask is, Would a micro blog be a viable platform to facilitate a community that impacts workplace learning?
The literature presents research on micro blogs, adult learning, as well as the projected role of technology in supporting communities of practice. Micro blogs utilize a limited number of characters and unless users set up restrictions on their accounts, the text that is posted can be seen and searched by anyone. The use of hashtags has enabled micro blog users to identify posts and follow specific topics. Based on this functionality, it is conceivable that micro blogs may be used for tasks beyond personal updates.

Learning theory creates a framework that can be compared to the functional components of the micro blog platform. Adult learning theory posits that adults need to: know why they are learning something, be self directed in their learning efforts, be able to integrate what is being learned into their contextual experience, be ready to learn when they see something they need to know; seek out applicable knowledge, and be motivated intrinsically. Learning occurs when adults share information, are challenged, and receive feedback. Peer to peer discussion is an element in adult learning, whether in person or facilitated through technology. Whether learning is formal or informal, these components support and enhance adult learning and correspond with micro blog functionality.

Communities of practice, which were introduced as an extension of research done on social learning, are groups of people that choose to come together around a particular interest and share knowledge over a period of time. The group interaction provides an opportunity for informal learning to take place. The exchange of ideas through these communities directly supports the underpinnings of adult learning theory. As the community evolves the bonds strengthen and the learning becomes more ingrained. Communities of practice have been found in online communities. These components weave together to create the case for micro blogs as be a successful platform for adult learning to take place and communities of practice to develop.
The research was structured as a mixed methods study. Using the micro blog group #lrnchat as a case study, volunteers from the group were solicited to participate in the online survey and the follow up interviews. The request to participate was posted at the beginning and the end of weekly synchronous exchange over the course of 4 weeks. The survey contained 37 questions; 12 of the questions comprised an instrument designed to measure communities of practice. The interview consisted of five questions and took no more than 40 minutes. A total of 20 participants completed the survey. Eight of the 20 offered to participate in the interview; however, only four interviews were completed due to participant drop out.

The data from the survey and interviews told a story that wove together adult learning, a micro blog, and a community of practice. Participants in #lrnchat typically stumbled on to the micro blog community, but because it provided value to them they returned regularly. The exchanges that occur on #lrnchat are used to help participants in the workplace. Participants also identified Twitter, the micro blog platform, as being of daily use to them as a professional resource. The interviews provided insight into the best practices of using a micro blog platform including being selective on who one follows, being thoughtful about what one posts, and sharing knowledge freely. Finally, the community of practice instrument indicated that the #lrnchat community is, in fact, a community of practice.

The theoretical constructs identified through the literature review created what seemed to be a logical overlay between adult learning theory and the functionality of a micro blog. Based on the research, micro blogs are viable platforms to facilitate adult learning theory in the workplace. Beyond just being a resource, the micro blog platform facilitated the development of a community of practice. In addition, due to the immediacy of the response time, some participants indicated that the information shared via micro blog is far more current than any
other source because it comes from the leading experts and is available long before printed resources can reach the publisher.
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APPENDIX A

Online Survey in Survey Monkey

**Lmchat Survey**

*Survey Consent*

You have been invited to participate in this survey based on your participation with the Learn Chat (#lmchat) group on Twitter.

The survey will inquire about your level of involvement with the #lmchat group. It will also ask about what resources you access for professional development. The final segment of the survey knowledge sharing and communication among #lmchat members.

The Learn Chat facilitators have been contacted and approved the posting of this survey during the #lmchat exchange on Thursday evenings for the purpose of gathering survey results for my dissertation at Pepperdine University.

The survey consists of 37 questions and will take approximately 15 minutes. The survey will be open for three weeks. Your responses will be confidential and I will not collect identifying information such as your name, email address or IP address unless you provide contact information for a follow-up interview. Participation in the study is strictly voluntary and you may choose to skip a question or leave the survey at any time.

**Confidentiality**

All information provided will be kept confidential. All data is stored in a password protected electronic format. To help protect your confidentiality, the survey will not contain information that will personally identify you. The results of the study will be used for scholarly purposes only.

**Risks/Benefits**

The only foreseeable risk associated with this study is the imposition on your time. The study will be beneficial in that it will help researchers understand how a microblog platform can support a community with the purpose of learning. A summary of the findings will be shared with the #lmchat community, so there will be a benefit to participants that may want to expand the usage of microblogs in creating learning communities.

**Contact**

If you have questions at any time about the study or the procedures that are being used, you may contact me, Christy Ritchie, at Christinr.ritchie@pepperdine.edu through Twitter direct message (DM) @christyritchie or by telephone 310-570-3600. My dissertation advisor, Dr. Linda Polin, can be reached at Linda.Polin@pepperdine.edu. If you should have concerns or issues with this study, please contact the Pepperdine University Graduate Professional School, Internal Review Board chairperson, Dr. Doug Leigh via phone at (310) 568-3385 or email at doug.leigh@pepperdine.edu.

**1. ELECTRONIC CONSENT:** Please select your choice below. Clicking on the “Agree” button below indicates that you have read the above information, you voluntarily agree to participate, and you are at least 18 years of age. If you do not wish to participate in the research study, please decline participation by clicking on the “Disagree” button.

- [ ] Agree
- [ ] Disagree (and survey)
**Lunch Survey**

**Demographic Information**

*The first section of this survey simply seeks to better understand the demographics of lunch participants.*

**2. What is your gender?**

- Male
- Female
- Prefer to not disclose

**3. What is the highest level of education you completed?**

- High school
- Some college
- Undergraduate degree
- Advanced degree
- Prefer not to disclose

**4. Do you work in a learning/education capacity?**

- Yes
- No
**5. Which of the following best describes the field in which you work?**

- [ ] I did not answer yes to the previous question
- [ ] K-12 education
- [ ] Higher education
- [ ] Workplace learning
- [ ] Human resources
- [ ] Consulting
- [ ] Other (please specify):

**6. What is your job title?**


**7. How many years of professional experience do you have?**

- [ ] Less than 1 year
- [ ] 1 - 3 years
- [ ] 4 - 6 years
- [ ] 9 - 12 years
- [ ] 13 - 20 years
- [ ] 20+ years
**8. In what time zone do you live?**
- [ ] Eastern
- [ ] Central
- [ ] Mountain
- [ ] Arizona
- [ ] Pacific
- [ ] Alaska
- [ ] Hawaii
- [ ] Other (please specify)

**9. Have you been involved in the organization or facilitation of the #Imchat group?**
- [ ] Yes
- [ ] No

**10. Would you be willing to participate in a 30 - 45 min recorded phone interview?**
I am looking for #Imchat participants that feel that they have learned something from their experience on #Imchat and have been able to use that knowledge in the workplace. If you feel as though you have had this experience, I would be very interested in speaking with you about your experience with #Imchat. Interviews will be conducted in May and June of 2013.
- [ ] Yes
- [ ] No
**Interview Contact Information**

11. Please share your contact information, so that we may schedule an interview.

<table>
<thead>
<tr>
<th>Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email Address:</td>
</tr>
<tr>
<td>Phone Number:</td>
</tr>
</tbody>
</table>
Lnchat Survey

Lnchat Information

In this section, we hope to learn more about your participation in the weekly synchronous Lnchat session that occurs on Thursday evenings.

12. How did you first learn about Lnchat?
☐ Mentioned at a conference
☐ From a colleague
☐ Through an article
☐ Stumbled on it
☐ Do not remember
☐ Other (please specify)

13. How frequently do you attend the designated live Lnchat time?
☐ 2+ times a month
☐ Once a month
☐ Once every couple of months
☐ Once a quarter
☐ Once every six months
☐ Once a year

14. When attending Lnchat during the designated time, do you:
☐ Schedule your attendance i.e. it is on your calendar
☐ Try to remember to connect on Thursdays
☐ Other (please specify)

15. Do you multi-task when participating in the Lnchat discussion?
☐ Yes
☐ No
☐ Sometimes
# Learning Chat Survey

16. When you attend the live #lrnchat session, what percentage of the time do you: (must total 100%)
- Just read without asking others what you know you are participating
- Introduce yourself, but do not contribute to the discussion
- Actively tweet and participate in the discussion
- Multitask, catching some of the posts and missing others

17. When attending the #lrnchat discussion, how long do you participate in the hour live exchange?
- Less than 15 minutes
- 15 minutes
- 30 minutes
- 45 minutes
- 60 minutes - the full time

18. Do you follow the links posted on #lrnchat?
- Yes
- No
- Sometimes

19. Do you take notes while participating on #lrnchat?
- Yes
- No
- Sometimes

20. Do you ever review the posted transcripts of the chat sessions on www.lrnchat.com?
- Yes
- No
21. Do you engage with other #lmchat participants outside of the designated #lmchat exchange on Thursdays?

☐ Yes
☐ No
## Lmchat Survey

### Professional Development

In this section, we would like to learn more about how you seek out information or professional development for your professional role.

22. What resources do you use in the course of your professional occupation (select all that apply)?

- Professional conferences
- Professional publications (magazines, journals, etc)
- Local professional organizations
- LinkedIn (Groups, etc.)
- Facebook
- Twitter
- Blogs
- Websites
- Colleagues
- Reference manuals
- Other (please specify)

![Image of a table showing frequency of resource usage]

23. Of those resources selected above, how often do you use each?

<table>
<thead>
<tr>
<th>Resource</th>
<th>Daily</th>
<th>Weekly</th>
<th>Monthly</th>
<th>Quarterly</th>
<th>Annually</th>
<th>Do not use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional conferences</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Professional publications (magazines, journals, etc)</td>
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<tr>
<td>Local professional organizations</td>
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<tr>
<td>LinkedIn (Groups, etc.)</td>
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<tr>
<td>Facebook</td>
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<td>Twitter</td>
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<td>Blogs</td>
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<td>Websites</td>
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<tr>
<td>Colleagues</td>
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<tr>
<td>Reference manuals</td>
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<td></td>
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<tr>
<td>Other (please specify)</td>
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</tr>
</tbody>
</table>
24. In the case where you have a professional question, which of these resources would provide you with a quality response and/or a timely response?

<table>
<thead>
<tr>
<th>Professional conferences</th>
<th>Quality Response</th>
<th>Timely Response</th>
<th>Do Not Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional publications (magazines, journals, etc)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local professional organizations</td>
<td></td>
<td></td>
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<tr>
<td>LinkedIn (Groups, etc.)</td>
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<td>Facebook</td>
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<td>Twitter</td>
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<tr>
<td>Reference manuals</td>
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</tbody>
</table>

25. Is the information shared by others during #Lmchat useful to you in your profession?

- [ ] Yes
- [x] No
26. How frequently are you able to use information gained from the #lmchat exchange in your work?

☐ Daily
☐ Weekly
☐ Monthly
☐ Quarterly
☐ Annually
### Lmchat Survey

**Lmchat Community**

The next section asks about #lmchat as an online community. It seeks to measure the level of engagement you share with the #lmchat community. The next set of questions uses a scale with Strongly Disagree on one end and Strongly Agree at the opposite end. Please select the answer along the continuum that most closely reflects how you feel about the statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. I feel comfortable communicating freely with others in my field.</td>
<td></td>
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</tr>
<tr>
<td>28. In my field there is an open environment for free communication.</td>
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</tr>
<tr>
<td>29. It is easy to communicate with others in my field.</td>
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<tr>
<td>30. My field has a unique vocabulary.</td>
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<tr>
<td>31. There is a common understanding within my field of the words and meanings that are used within the field.</td>
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</tr>
<tr>
<td>32. People outside my field might have difficulty understanding the vocabulary members of my field use to talk about the field.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. Collaborating with other members of my field helps me to remember things that we have learned.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. Participating in meetings with members of my field helps me to remember things that we have learned.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
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<tr>
<td>35. Lessons learned from past experiences shared within my field are easily remembered.</td>
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</tr>
<tr>
<td>36. I interact with others in my field with the intention of learning from them.</td>
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<tr>
<td>37. I learn new skills and knowledge from collaborating with others in my field.</td>
<td></td>
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<tr>
<td>38. Learning is shared among members of my field.</td>
<td></td>
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</tbody>
</table>
Thank you very much for your participation! If you have indicated that you are willing to participate in the follow-on interview, you may be contacted by Christy Ritchie to schedule a time for the interview.
### APPENDIX B

Survey Questions as Related to Research

#### Table B1

Survey Questions as Related to Research

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Question</th>
<th>Research Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Electronic Consent: Please select your choice below. Clicking on the “Agree” button below indicates that you have read the above information, you voluntarily agree to participate, and you are at least 18 years of age. If you do not wish to participate in the research study, please decline participation by clicking the “Disagree” button.</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>What is your gender?</td>
<td>Basic demographic data for study. Further validate micro blog demographic data (Smith &amp; Brenner, 2012)</td>
</tr>
<tr>
<td>3</td>
<td>What is the highest level of education you completed?</td>
<td>Basic demographic data for study. Further validate micro blog demographic data (Smith &amp; Brenner, 2012)</td>
</tr>
<tr>
<td>4</td>
<td>Do you work in a learning/education capacity?</td>
<td>Interview selection question.</td>
</tr>
<tr>
<td>5</td>
<td>Which of the following best describes the field in which you work?</td>
<td>Interview selection question.</td>
</tr>
<tr>
<td>6</td>
<td>What is your job title?</td>
<td>Interview selection question.</td>
</tr>
<tr>
<td>7</td>
<td>How many years of professional experience do you have?</td>
<td>Basic demographic data for study.</td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>Question Number</th>
<th>Question</th>
<th>Research Theory</th>
<th>Research Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>In what time zone do you live?</td>
<td>Basic demographic data for study and determine level of participation in #lrnchat group based on the time the synchronous exchange is held.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Have you been involved in the organization or facilitation of the #lrnchat group?</td>
<td>Demographic data for study.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Would you be willing to participate in a 30 – 45 minute recorded phone interview?</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>11</td>
<td>Please share your contact information, so that we may schedule an interview.</td>
<td>Only viewed by participant if they answered in the affirmative to question number 10.</td>
<td>N/A</td>
</tr>
<tr>
<td>12</td>
<td>How did you first learn about #lrnchat?</td>
<td></td>
<td>1, 3</td>
</tr>
<tr>
<td>13</td>
<td>How frequently do you attend the designated live #lrnchat time?</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>When attending #lrnchat during the designated time, do you: schedule your attendance, try to remember to connect on Thursdays or other.</td>
<td></td>
<td>1, 2</td>
</tr>
<tr>
<td>15</td>
<td>Do you multi-task when participating in the #lrnchat discussion?</td>
<td></td>
<td>1, 2</td>
</tr>
<tr>
<td>16</td>
<td>When you attend the live #lrnchat session, what percentage of the time do you: Just read without letting others know you are participating; Introduce yourself, but do not contribute to the discussion; Actively tweet and participate in the discussion; Multi-task, catching some of the posts and missing others</td>
<td>Following (Java et al., 2007)</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>When attending the #lrnchat discussion, how long do you participate in the hour live exchange?</td>
<td>Self selection to participate addresses adult learning theory (Knowles et al., 2005)</td>
<td>1</td>
</tr>
</tbody>
</table>

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<th>Question</th>
<th>Research Theory</th>
<th>Research Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Do you follow the links posted on #lrnchat?</td>
<td>Self selection to participate addresses adult learning theory (Knowles et al., 2005)</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>Do you take notes while participating on #lrnchat?</td>
<td>Active participation addresses adult learning theory (Knowles et al., 2005)</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>Do you ever review the posted transcripts of the chat sessions on <a href="http://www.lrnchat.com">www.lrnchat.com</a>?</td>
<td>Active participation addresses adult learning theory (Knowles et al., 2005)</td>
<td>1</td>
</tr>
<tr>
<td>21</td>
<td>Do you engage with other #lrnchat participants outside of the designated #lrnchat exchange on Thursdays?</td>
<td>Active participation addresses adult learning theory (Knowles et al., 2005)</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>22</td>
<td>What resources do you use in the course of your professional occupation?</td>
<td>Identify where workplace learning is sought and in what format: formal, informal, incidental (Rowden, 2007; Schugurensky, 2000; Walden et al., 2011; Watkins &amp; Marsick, 1992)</td>
<td>1, 2</td>
</tr>
<tr>
<td>23</td>
<td>Of those resources selected above, how often do you use each?</td>
<td>Identify where workplace learning is sought and in what format: formal, informal, incidental (Rowden, 2007; Schugurensky, 2000; Walden et al., 2011; Watkins &amp; Marsick, 1992)</td>
<td>1, 2</td>
</tr>
<tr>
<td>24</td>
<td>In the case where you have a professional question, which of these resources would provide you with a quality response and/or a timely response?</td>
<td>Informal nature of a micro blog aids in informal learning process (Ebner et al., 2010)</td>
<td>1, 2</td>
</tr>
<tr>
<td>25</td>
<td>Is the information shared by others during #lrnchat useful to you in your profession?</td>
<td>Use of a micro blog (Twitter) has led to practical application of subjects discussed (Dunlap &amp; Lowenthal, 2009; Junco et al., 2011; Kassens-Noor, 2012; Lomicka &amp; Lord, 2012)</td>
<td>1, 2</td>
</tr>
<tr>
<td>Question Number</td>
<td>Question</td>
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<td>Research Question</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>26</td>
<td>How frequently are you able to use information gained from the #lrnchat exchange in your work?</td>
<td>Use of a micro blog (Twitter) has led to practical application of subjects discussed (Dunlap &amp; Lowenthal, 2009; Junco et al., 2011; Kassens-Noor, 2012; Lomicka &amp; Lord, 2012)</td>
<td>1, 2</td>
</tr>
<tr>
<td>27</td>
<td>I feel comfortable communicating freely with others in my field.</td>
<td>Interplay of social interaction and learning (Lave &amp; Wenger, 1991); Micro blogs support the development of communities of practice (Wenger, 2009)</td>
<td>2</td>
</tr>
<tr>
<td>28</td>
<td>In my field there is an open environment for free communication.</td>
<td>Interplay of social interaction and learning (Lave &amp; Wenger, 1991); Micro blogs support the development of communities of practice (Wenger, 2009)</td>
<td>2</td>
</tr>
<tr>
<td>29</td>
<td>It is easy to communicate with others in my field.</td>
<td>Interplay of social interaction and learning (Lave &amp; Wenger, 1991); Micro blogs support the development of communities of practice (Wenger, 2009)</td>
<td>2</td>
</tr>
<tr>
<td>30</td>
<td>My field has a unique vocabulary.</td>
<td>Interplay of social interaction and learning (Lave &amp; Wenger, 1991); Micro blogs support the development of communities of practice (Wenger, 2009)</td>
<td>2</td>
</tr>
<tr>
<td>31</td>
<td>There is a common understanding within my field of the words and meaning that are used within the field.</td>
<td>Interplay of social interaction and learning (Lave &amp; Wenger, 1991); Micro blogs support the development of communities of practice (Wenger, 2009)</td>
<td>2</td>
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<td>32</td>
<td>People outside my field might have difficulty understanding the vocabulary member of my field use to talk about the field.</td>
<td></td>
<td></td>
</tr>
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<td>33</td>
<td>Collaborating with other members of my field helps me to remember things that we have learned.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Participating in meetings with members of my field helps me to remember things that we have learned.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question Number</td>
<td>Question</td>
<td>Research Theory</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------------------------------------------------------------</td>
<td>---------------------</td>
<td></td>
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<td>35</td>
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<td></td>
</tr>
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<td>36</td>
<td>I interact with others in my field with the intention of learning from them.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>I learn new skills and knowledge from collaborating with others in my field.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Learning is shared among members of my field.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX C

IRB Exemption Notice

September 12, 2013

Christy Ritchie
4036 East Oak St.
Phoenix, AZ 85008

Protocol #: E0513D11
Project Title: The Role of Micro Blogs in Workplace Learning: The #Irnchat phenomenon

Dear Ms. Ritchie,

Thank you for submitting your application, The Role of Micro Blogs in Workplace Learning: The #Irnchat phenomenon, for exempt review to Pepperdine University's Graduate and Professional Schools Institutional Review Board (GPS IRB). The IRB appreciates the work you and your faculty advisor, Dr. Linda Polin, have done on the proposal. The IRB has reviewed your submitted IRB application and all ancillary materials. Upon review, the IRB has determined that the above entitled project meets the requirements for exemption under the federal regulations (45 CFR 46 - http://www.nihtraining.com/obrsite/guidelines/45cf46.html) that govern the protections of human subjects. Specifically, section 45 CFR 46.101(b)(2) states:

(b) Unless otherwise required by Department or Agency heads, research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt from this policy:

Category (2) of 45 CFR 46.101. research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: a) Information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and b) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

In addition, your application to waive documentation of consent, as indicated in your Application for Waiver or Alteration of Informed Consent Procedures form, has been approved.

Your research must be conducted according to the proposal that was submitted to the IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit a Request for Modification Form to the GPS IRB. Because your study falls under exemption, there is no requirement for continuing IRB review of your project. Please be aware that changes to your protocol may prevent the research from qualifying for exemption from 45 CFR 46.101 and require submission of a new IRB application or other materials to the GPS IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the GPS IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the GPS IRB and the appropriate form to be used to report this information can be found in the
Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual
(see link to “policy material” at http://www.pepperdine.edu/irb/graduate/).

Please refer to the protocol number denoted above in all further communication or correspondence related
to this approval. Should you have additional questions, please contact Veronica Jimenez, GPS IRB
Manager at gpsirb@pepperdine.edu. On behalf of the GPS IRB, I wish you success in this scholarly
pursuit.

Sincerely,

[Signature]

Theresa Bryant-Davis, Ph.D.
Chair, Graduate and Professional Schools IRB

cc: Dr. Lee Katz, Vice Provost for Research and Strategic Initiatives
    Ms. Alexandra Roosa, Director Research and Sponsored Programs
    Dr. Linda Polin, Graduate School of Education and Psychology
### APPENDIX D

Survey Questions: Type and Analysis

Table D1

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Electronic Consent: Please select your choice below. Clicking on the “Agree” button below indicates that you have read the above information, you voluntarily agree to participate, and you are at least 18 years of age. If you do not wish to participate in the research study, please decline participation by clicking the “Disagree” button.</td>
</tr>
<tr>
<td></td>
<td>Single answer</td>
</tr>
<tr>
<td>2</td>
<td>What is your gender?</td>
</tr>
<tr>
<td></td>
<td>Single answer</td>
</tr>
<tr>
<td>3</td>
<td>What is the highest level of education you completed?</td>
</tr>
<tr>
<td></td>
<td>Single answer</td>
</tr>
<tr>
<td>4</td>
<td>Do you work in a learning/education capacity?</td>
</tr>
<tr>
<td></td>
<td>Single answer</td>
</tr>
<tr>
<td>5</td>
<td>Which of the following best describes the field in which you work?</td>
</tr>
<tr>
<td></td>
<td>Single answer</td>
</tr>
<tr>
<td>6</td>
<td>What is your job title?</td>
</tr>
<tr>
<td></td>
<td>Open ended question</td>
</tr>
<tr>
<td>7</td>
<td>How many years of professional experience do you have?</td>
</tr>
<tr>
<td></td>
<td>Single answer</td>
</tr>
<tr>
<td>8</td>
<td>In what time zone do you live?</td>
</tr>
<tr>
<td></td>
<td>Single answer</td>
</tr>
<tr>
<td>9</td>
<td>Have you been involved in the organization or facilitation of the #lrnchat group?</td>
</tr>
<tr>
<td></td>
<td>Single answer</td>
</tr>
<tr>
<td>10</td>
<td>Would you be willing to participate in a 30 – 45 minute recorded phone interview?</td>
</tr>
<tr>
<td></td>
<td>Single answer</td>
</tr>
</tbody>
</table>

(continued)
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<thead>
<tr>
<th>Question Number</th>
<th>Question</th>
<th>Type of Question</th>
<th>Statistical Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Please share your contact information, so that we may schedule an interview.</td>
<td>Open ended question</td>
<td>Not analyzed</td>
</tr>
<tr>
<td>12</td>
<td>How did you first learn about #lrnchat?</td>
<td>Multiple answer</td>
<td>Percentage analysis</td>
</tr>
<tr>
<td>13</td>
<td>How frequently do you attend the designated live #lrnchat time?</td>
<td>Single answer</td>
<td>Percentage analysis</td>
</tr>
<tr>
<td>14</td>
<td>When attending #lrnchat during the designated time, do you: schedule your attendance, try to remember to connect on Thursdays or other.</td>
<td>Single answer</td>
<td>Percentage analysis</td>
</tr>
<tr>
<td>15</td>
<td>Do you multi-task when participating in the #lrnchat discussion?</td>
<td>Single answer</td>
<td>Percentage analysis</td>
</tr>
<tr>
<td>16</td>
<td>When you attend the live #lrnchat session, what percentage of the time do you: Just read without letting others know you are participating; Introduce yourself, but do not contribute to the discussion; Actively tweet and participate in the discussion; Multi-task, catching some of the posts and missing others</td>
<td>Percentage breakout of time</td>
<td>Advanced statistical analysis</td>
</tr>
<tr>
<td>17</td>
<td>When attending the #lrnchat discussion, how long do you participate in the hour live exchange?</td>
<td>Single answer</td>
<td>Percentage analysis</td>
</tr>
<tr>
<td>18</td>
<td>Do you follow the links posted on #lrnchat?</td>
<td>Single answer</td>
<td>Percentage analysis</td>
</tr>
<tr>
<td>19</td>
<td>Do you take notes while participating on #lrnchat?</td>
<td>Single answer</td>
<td>Percentage analysis</td>
</tr>
<tr>
<td>20</td>
<td>Do you ever review the posted transcripts of the chat sessions on <a href="http://www.lrnchat.com">www.lrnchat.com</a>?</td>
<td>Single answer</td>
<td>Percentage analysis</td>
</tr>
<tr>
<td>21</td>
<td>Do you engage with other #lrnchat participants outside of the designated #lrnchat exchange on Thursdays?</td>
<td>Single answer</td>
<td>Percentage analysis</td>
</tr>
<tr>
<td>22</td>
<td>What resources do you use in the course of your professional occupation?</td>
<td>Multiple answers</td>
<td>Percentage analysis</td>
</tr>
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<td>Question Number</td>
<td>Question</td>
<td>Type of Question</td>
<td>Statistical Analysis</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-----------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
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<tr>
<td>23</td>
<td>Of those resources selected above, how often do you use each?</td>
<td>Multiple answers</td>
<td>Percentage analysis</td>
</tr>
<tr>
<td>24</td>
<td>In the case where you have a professional question, which of these resources would provide you with a quality response and/or a timely response?</td>
<td>Multiple answers</td>
<td>Covariate analysis with questions 22 and 23</td>
</tr>
<tr>
<td>25</td>
<td>Is the information shared by others during #lrnchat useful to you in your profession?</td>
<td>Single answer</td>
<td>Percentage analysis</td>
</tr>
<tr>
<td>26</td>
<td>How frequently are you able to use information gained from the #lrnchat exchange in your work?</td>
<td>Single answer</td>
<td>Percentage analysis</td>
</tr>
<tr>
<td>27</td>
<td>I feel comfortable communicating freely with others in my field.</td>
<td>Likert-type scale</td>
<td>Analyzed as prescribed by instrument developer (Cadiz et al., 2009)</td>
</tr>
<tr>
<td>28</td>
<td>In my field there is an open environment for free communication.</td>
<td>Likert-type scale</td>
<td>Analyzed as prescribed by instrument developer (Cadiz et al., 2009)</td>
</tr>
<tr>
<td>29</td>
<td>It is easy to communicate with others in my field.</td>
<td>Likert-type scale</td>
<td>Analyzed as prescribed by instrument developer (Cadiz et al., 2009)</td>
</tr>
<tr>
<td>30</td>
<td>My field has a unique vocabulary.</td>
<td>Likert-type scale</td>
<td>Analyzed as prescribed by instrument developer (Cadiz et al., 2009)</td>
</tr>
<tr>
<td>31</td>
<td>There is a common understanding within my field of the words and meaning that are used within the field.</td>
<td>Likert-type scale</td>
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<th>Type of Question</th>
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<tbody>
<tr>
<td>32</td>
<td>People outside my field might have difficulty understanding the vocabulary member of my field use to talk about the field.</td>
<td>Likert-type scale</td>
<td>Analyzed as prescribed by instrument developer (Cadiz et al., 2009)</td>
</tr>
<tr>
<td>33</td>
<td>Collaborating with other members of my field helps me to remember things that we have learned.</td>
<td>Likert-type scale</td>
<td>Analyzed as prescribed by instrument developer (Cadiz et al., 2009)</td>
</tr>
<tr>
<td>34</td>
<td>Participating in meetings with members of my field helps me to remember things that we have learned.</td>
<td>Likert-type scale</td>
<td>Analyzed as prescribed by instrument developer (Cadiz et al., 2009)</td>
</tr>
<tr>
<td>35</td>
<td>Lessons learned from past experiences shared within my field are easily remembered.</td>
<td>Likert-type scale</td>
<td>Analyzed as prescribed by instrument developer (Cadiz et al., 2009)</td>
</tr>
<tr>
<td>36</td>
<td>I interact with others in my field with the intention of learning from them.</td>
<td>Likert-type scale</td>
<td>Analyzed as prescribed by instrument developer (Cadiz et al., 2009)</td>
</tr>
<tr>
<td>37</td>
<td>I learn new skills and knowledge from collaborating with others in my field.</td>
<td>Likert-type scale</td>
<td>Analyzed as prescribed by instrument developer (Cadiz et al., 2009)</td>
</tr>
<tr>
<td>38</td>
<td>Learning is shared among members of my field.</td>
<td>Likert-type scale</td>
<td>Analyzed as prescribed by instrument developer (Cadiz et al., 2009)</td>
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</table>