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Worker Use Of Social Media For Informal Learning In A Corporate Environment

Susan N. Genden
Wayne State University,

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**WORKER USE OF SOCIAL MEDIA FOR
INFORMAL LEARNING IN A CORPORATE ENVIRONMENT**

by

SUSAN N. GENDEN

DISSERTATION

Submitted to the Graduate School

of Wayne State University

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

2015

MAJOR: INSTRUCTIONAL TECHNOLOGY

Approved by:

Advisor

Date

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DEDICATION

To my husband, Steven, who has served as my inspiration, loving companion, and constant support throughout this journey. Also to my children, Rena and Joe, and their families, for their patience, love, and belief in my ability to meet this challenge.

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CHAPTER 1

Introduction

The methods by which we communicate and learn are changing. In 2004, Dale Dougherty used the words “read-write web” to define the term Web 2.0 (Aghaei, Nematbakhsh, & Farsani, 2012, p.2). Using this definition, the affordances of Web 2.0 applications for two-way, many-to-many, real time communications offer users the ability to find desired information quickly as more content becomes available. Users can also actively create information (Budin, 2005). With interactive and social media technologies, these opportunities have increased as individuals are able to interact and search other individuals’ online resources to find information. This study presents a closer look at the active social media user’s perceptions, use, and reflections to find out what, where, and how he or she uses social media to effectively learn and share knowledge informally in the corporate workplace. It is important to hear the voice of the worker, to understand who the worker is and what the worker experiences in order to learn from these experiences.

Social media includes applications that individuals use on the World Wide Web. One definition of social media is that it refers to “technologies that emphasize the social aspects of the Internet as a channel for communication, collaboration, and creative expression and is often interchangeable with the terms Web 2.0 and social software” (Dabbagh & Reo, 2011, p. 1). Bingham and Conner say that social media is “technology used for three or more people” (2010, p. 6). “It’s about the interactions between people” (Jue, Marr, & Kassotakis, 2010, p. 5). Social media use commonly includes the use of software applications like Google+, Google Documents, Facebook, Twitter, LinkedIn,

Yammer, aspects of Microsoft SharePoint, YouTube, blogs such as WordPress, and wikis such as Wikipedia. These applications allow people to quickly connect with and learn from other people anywhere in the world. People may connect in a synchronous online space or via postings they receive or view later. Using technology, real-time content may be searchable. Blog articles and tips, educational videos, scholarly articles and other useful content may be discoverable by effectively connecting online with others. Finding and using this content and having online conversations to learn may be considered social learning.

According to Brown and Adler, “The most profound impact of the Internet is its ability to support and expand the various aspects of social learning... social learning is based on the premise that our understanding of content is socially constructed through conversations... interactions, especially with others...” (2008, p. 18). Social learning is when we learn “with and from others” and it does not require social media, but it can be facilitated through use of social media when using digital tools (Bingham et al., 2010, p. 6). Use of social media for social learning does not involve simply reading a book or using search applications (Bingham et al., 2010). What we learn is transformative in that it “changes what we know and builds on what we can do” (Bingham et al., 2010, p. 19). Informal learning, another learning category, refers to an activity that is outside of “a formal program or class” through which individuals know how to perform at work (Bingham & Conner, 2010, p. 9; Cross, 2007). Informal learning is usually intentional but not highly structured...” (Marsick & Watkins, 2001, p. 25). Informal learning can include social learning but social learning may also take place in a formal situation as

well, as part of a course for example (Bingham & Conner, 2010). Social media use is key to some social and informal learning experiences.

This research investigated the convergence of informal learning, an old phenomenon, with the current social media tools that now afford unique opportunities to interact with others across time and space limitations (Bingham et al., 2010). References to informal learning through social media in this study explored social and informal learning as enabled within the intersection of social media use and informal learning as shown.

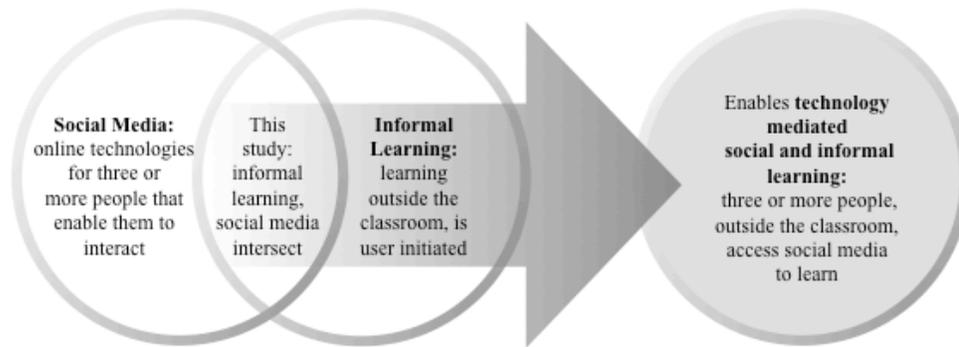


Figure 1. Visualization of study subject areas

This study examined workers' characteristics, perceptions, and experiences, including understanding more about when and how social media tools assist them, in meeting their learning needs. It was intended to aid learning professionals in listening to the voice of the worker. While some companies have adopted these social tools, there is still limited empirical research that specifically addresses worker use of social media for informal learning in the corporate environment in an in-depth study.

Organizations are implementing social media applications internally in hopes of improving innovation, distant worker relationships, and knowledge building (Azua,

2010). Business organizations hope to generate more innovation through ongoing worker feedback that could be provided through social applications (Jue et al., 2010). From an organizational standpoint, corporations are expanding globally, rapidly hiring new workers in locations with “emerging economies” (Bersin, 2011). In the “borderless workplaces” of these companies, workers are quickly connected through technology (Bersin, 2011, p. 8). In addition, college graduates are often not prepared for the work and for the very specialized knowledge they will need in the workplace (Bersin, 2011). “Only 32% of U.S. college graduates have ‘excellent’ skills as they enter the working world” (Bersin, 2011, p. 8). Some businesses are interested in finding cost effective ways to help these new workers meet required performance levels more quickly (Jue et al., 2010; Bersin, 2011). It remains to be seen if social media use can help organizations face these multiple pressures.

According to Bingham et al., demographics within the workplace are changing as well (2010). Those workers who are part of the millennial generation, born after 1977, may be very comfortable with technology tools at work. Baby Boomers, those born between 1946 and 1964, are or will soon be retiring (Azua, 2010; Bingham et al., 2010). These changes influence workplace needs and tools used. Experienced workers may be leaving without transferring their knowledge. Organizational leaders hope to capture tacit knowledge of experienced workers through the use of social media tools (Azua, 2010).

Additional factors are involved as well and informal learning through social media offers timely options for workers. Knowledge workers in global organizations are pressured to produce faster with fewer resources and in the face of changing

technologies. Workers must filter information, avoid overload and find out what they need to know (Bingham et al., 2010). “Self-directed learning becomes a key strategy when we need to move fast” (Bingham et al., 2010, p. 21). This may be less of a struggle with appropriate online tools and the skills to use them. Learner characteristics, tasks, and roles may also impact uses of these technology tools (Gram, 2010).

Recognizing potential uses of informal learning strategies through technology is a key trend in the corporate world (Mallon & Clarey, 2011). According to Mallon et al., we are moving into a phase in which workers benefit from environments with Internet access in which to learn and collaborate (2011). These environments include social networking capabilities that enable self-directed workers to seek resources outside of formal training where they find information and experts not available otherwise. Workers may develop trusted communities, discover other solutions, and reciprocate by sharing their own resources (Bingham et al., 2010). By raising “awareness of others within an organization,” we increase “opportunities for learning, collaboration, and innovation” (Bingham et al., 2010, p. 42). Using social media, “employees can share information with the people they know, but more importantly, employees can “share information with people they don’t know” (Azua, 2010, p. 111).

Another aspect of social media use for learning is support. Eraut states that learning at work is affected by the amount of work people have and by “...the social climate of the workplace,” with management support being one of the most significant factors in valuing informal learning (2004, p. 271). Developing a learning culture can be a challenge and management support remains one of the challenges (Mallon, 2010). There may be other incentives available online such as those offered through social

media. Workers now often have the opportunity to give feedback and ratings; knowledgeable workers can contribute, share information, and, in some cases, receive recognitions such as badges and star ratings that are awarded online and visible to the workplace community (Mallon et al., 2011). The ability of the user to give feedback is a major component of these tools and thereby provides the worker with a stronger voice. In addition to these opportunities and incentives, workers must value knowledge sharing if social media tools are to be effective and informal learning is to grow (Mallon, 2010).

In terms of functionality, most social media tools, as Web 2.0 technologies, are more effective depending on degree of user activity (O'Reilly, 2005). Aghaei et al. state, "The technologies of web 2.0 allow assembling and managing large global crowds with common interests in social interactions" (2012, p. 2). The more people use them, the more effective they are in generating information. The user-generated content enables social media to be considered part of a two-way, read-write communication system. However, unlike the telephone or email, as more employees participate, more information important to the company can be captured and accessed through search (Azua, 2010). In companies, workers may then have more resources upon which to draw; this content grows over time. In this way, social media offers many-to-many communications, and content is broadcast to those following posts or using the applications. What does the worker think and experience regarding these changes? What best practices aid the worker? It is stated that in today's workplace, the worker must often be self-directed and develop his or her own resources to learn quickly, and perform well at work (Bingham et al., 2010). What role can social media use play for the worker in a corporate environment?

Previous studies have considered benefits to and perspectives of learners in higher education, and in terms of collaborative outcomes. Some studies have established that workers believe social media use offers the organization learning and performance benefits. Other studies have focused on specific tools to enable communication, such as Yammer or Twitter and social benefits. More studies are beginning to appear. This study took a closer look at the active social media user's perceptions and reflections to find out what meaning the worker gives to these experiences, and what, where, and how he or she uses social media to effectively learn. This study used a phenomenological approach to examine the patterns that emerged from an exploration of worker perceptions: of role at work, of working environment, and of informal learning using social media tools in the corporate workplace.

Purpose and Research Questions

The purpose of this study was to examine factors in worker use and perception of social media that lead to successful informal learning outcomes in the workplace. This study was guided by the following research questions:

1. What are characteristics of effective, active users of social media for informal learning?
2. How does worker perception of role at work impact use of social media?
3. How does worker perception of the workplace impact social media use for informal learning?
4. How does the worker experience use of social media tools for informal learning?

Methodology

The methodology was based on qualitative research using a phenomenological approach. According to Finlay, "...Phenomenological research... involves both rich description of the lifeworld/lived experience and... a special open phenomenological attitude refraining, at least initially, from importing external frameworks..." (2012, p. 8). In practice, the researcher must first, "...abstain from... explanations... and conceptualizations of the subject matter..." (Wertz, 2005, p. 168). The use of the term "epoche" in phenomenological methods refers to abstention (Wertz, 2005). This involves the researcher in not postulating theories to describe the phenomenon. The second epoche is when one focuses on the actual lived experiences of the other person. This is "the phenomenological reduction" in which one bracket's one's own experience to first observe and then to access similar experiences in order to "reflect on the lived world of other persons to apprehend ... meanings of the world as they are given" (Wertz, 2005, p. 168). Wertz stated that this method does posit reality but "reduces the investigative field to the psychological..." "This focus on experience is called the phenomenological psychological reduction" by Husserl (Wertz, 2005, p. 168).

This qualitative research approach regarding experiences in the search for knowledge as enabled by social media usage is "not only a beginning rooted in immediate social experience but also a methodology that requires a return to that experience at many points along the way (Crotty, 1998, p. 85). The approach used here focused on who the workers are and workers' perceptions of experiences using social media tools within the context of their work spaces in their search to find and generate meaningful knowledge.

Theoretical Perspective

There were two main theoretical approaches underlying this study. They were constructivist philosophy and communications theory. This study also discussed adult learning theory as presented by Knowles et al., (1975, 2005, 2011) and Connectivism as described by Siemens (2005). Constructivist theory tells us that “learning results from personal interpretation of experience, ...is an active process, occurring in realistic and relevant situations, and learning results from an exploration of multiple perspectives” (Richey, Klein, & Tracey, 2011, p. 248). It is a rational approach, “based on reason,” in that it describes an individual as constructing reality personally, rather than uncovering a view of reality that is the same for all (Ragan & Smith, 2005, p. 19). In addition, social constructivism asserts that our interactions with others are critical in our learning (Richey et al., 2010). Having an individual perspective and an ability to appreciate and learn from community perspectives is necessary in this learning process. Vygotsky presents a strong voice relative to the importance of multiple perspectives (1978). In this research study, we observed and listened to our participants describe how they learn, describe experiences with these tools, and describe experiences with others using the tools. In addition, the study examined factors that the learners perceived affect them and how they used social media for informal learning within a “realistic and relevant” environment, in their jobs, a core constructivist emphasis (Richey et al., 2011, p. 130).

Communication theory also underlies this social media usage in that communications are two-way, from sender(s) to receiver(s) in ongoing patterns. Communication can be seen “as a social process” and as “creating... meaning” (Richey et al., 2011, pp. 67-68). The Campos “Ecology of Meanings” transactional model of

communication emphasizes multiple users; these users have differing mental models through which they construct meaning (Richey et al., 2011, p. 37). Social media use is similar to Campos' model in that there is a "channel for communication" between multiple users within his model and within social media tools (Dabbagh et al., 2011, p. 1). The Campos communication model illustrates the manner through which media tools enable messages to be distributed quickly, to and from many, broadcasting messages in a manner that was not possible before use of the Internet. "Communication partners will be able to construct and coconstruct images of the world that are... glimpses of represented reality... The processing ability allows knowledge creation as a result of the interaction between interlocutors" (Campos, 2007, p. 398). Now, the learner may easily search and find new and existing communication networks that serve as filters for the learner to discover or contribute useful information quickly.

Epistemology

The constructionist epistemology represents participants' reflections on their experiences of using social media to learn. According to Crotty, "meanings are constructed by human beings as they engage with the world they are interpreting" (1998, p. 85).

Definitions of Key Terms

Formal learning refers to structured learning settings such as K-12 courses, college courses, and training in the corporate world in which there is an instructor or subject matter expert and learning is not user directed (Cross, 2007). It can also refer to web-based prerecorded classes. Formal learning usually refers to an event or events. There is

no clear division between formal and informal learning; rather, there is a spectrum along which each kind of learning may occur (Cross, 2007).

Informal learning refers to an activity that is “outside of a formal program or class” through which individuals know how to perform at work (Bingham & Conner, 2010, p. 9; Cross, 2007). In informal learning, the individual takes responsibility for and may generate learning. “Informal learning is usually intentional but not highly structured” (Marsick and Watkins, 2001, p. 25). Informal learning is not necessarily social, as when it refers to solitary activities such as reading or searching (Bersin, 2011). However, it can be social, as when three people at work talk about a problem and find a solution together. Informal learning does not require the use of social media, but can take place using social media. This research focused on that subset of informal learning that was accessed by social media.

Knowledge worker refers to those who have been educated to use knowledge, and who use intellectual skills at work, rather than manual skills. It describes those “who use and create knowledge in their jobs... including highly advanced and thoroughly theoretical knowledge” (Drucker, 1999, p. 271; 2002). Knowledge work is thought to “comprise the creation of knowledge, the application of knowledge, the transmission of knowledge, and the acquisition of knowledge” (Kelloway & Barling, 2003, p. 287)

Learning can refer to “measurable changes in behavior or it may represent a change in an internal viewpoint that is difficult to quantify” (Marsick and Watkins, 1960, p. 4).

Learner-centered refers to environments in which learners can determine aspects of what or how they are learning (Smith & Ragan, 2005).

Social media, as stated, may refer to “technology used for three or more people” (Bingham et al., 2010, p. 6). However, it is more than that according to others. “It’s about the interactions between people” (Jue, Marr & Kassotakis, 2010, p. 5). Social media commonly refers to software applications like Google+, Google Documents, Facebook, Twitter, LinkedIn, Yammer, aspects of Microsoft SharePoint, YouTube, blogs such as WordPress, and wikis such as Wikipedia. For purposes of this research, it is software that enables at least three people to interact and generate content, whether it is in real time, or through postings viewed at a later time (asynchronously). There must be the opportunity for feedback and user interactions. It does not include search applications like Google and does not include reading materials such as newspaper columns, reports, or books. Social media are tools that may be used to enable social learning and informal learning.

Social media in education may be “...used to broadly define a variety of networked tools or technologies that emphasize the social aspects of the Internet as a channel for communication, collaboration, and creative expression, and is often interchangeable with the terms Web 2.0 and social software” (Dabbagh et al., 2011, p. 1).

Tacit knowledge refers to knowledge that is “not conveyed through verbal expression” (Cross, 2007, p. 258). It refers to one’s own unspoken expertise (Azua, 2010).

Web 2.0 refers to “applications... that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources...” (O’Reilly, 2005, Definition section, para. 1). Aghaei et al. add, “Web 2.0 is also known as the wisdom web, people-centric web, participative web, and read-write web. With reading as well as

writing, the web could become bi-directional. Web 2.0 is a web as a platform where users can leave many of the controls they have... [been] used to in web 1.0. In other words, the users of web 2.0 have more interaction with less control” (2012, p. 3).

To clarify my use of terminology, I often used the term “learner” to refer to individuals in learning situations in general, or specifically in academic settings. In some cases, the term “worker” was appropriate, as when referring to individuals in studies that took place within the workplace. I most often used the term “participant” when referring to those in this study.

Summary

Most social media and web 2.0 social tool research currently is focused on the organizational benefits, classroom uses, or on the educator’s or instructional designer’s perspective on learning. The focus here was on an exploration of workers’ perceptions of their experiences in relation to how they use social media tools specifically and what helps them to be successful. Most of the literature regarding social media use in the workplace has been from conference proceedings or dissertations, since the theory and practices are emergent.

The research questions help us know better who the learners are; how their experiences in their positions at work require reflection, skills, methods, and abilities; and how they use and perceive social media applications to engage in informal learning. As we move forward, it would serve us all to know better how these factors contribute to informal learning at work.

CHAPTER 2

Literature Review

“Learners have increased educational opportunities due to the Internet’s... affordance of connectivity. What once rested under the control of a privileged expert or organization is now under the control of individuals...” (Siemens, 2009, p. 3).

Some of the issues in this study concern whether we can apply known theories to changes in practices regarding how individuals learn. This research suggests a framework that recognizes the importance of facility with online social and collaborative technology tools as a gateway to expanded social learning opportunities and to learning communities that emerge in the virtual spaces. In these shared virtual spaces, self-directed, reflective learners communicate and find helping connections and scaffolding that enable knowledge construction and knowledge application situated within the work environment.

Learners have, for years, engaged in informal and social learning without the benefit of the Internet. What is more recent is the opportunity, based on Web 2.0 technologies, to use the Internet to advance learning in ways that offer additional benefits to learners. Technology opportunities change at a rapid pace. It is important to know when, what, why, and how these online opportunities can benefit learners. This research explored concepts and practices regarding a learner-centered approach in which learners choose and control how to learn and find what they need to know, as opposed to a previous teaching-centered model of knowledge acquisition. This approach reflects changes to the definition of the field as defined by AECT, or the Association for Educational Communications and Technology (Januszewski et al., 2008). Facilitation of

technology use with regard to learning is part of that definition as well (Januszewski et al., 2008).

Duffy and Cunningham state, “Culture creates the tool, but the tool changes the culture” (1996, p. 3). Duffy et al. suggest that computer use would qualify as such a tool (1996). We must still consider what are best uses of some of these technology tools and when are they best used. Referring back to the Clark (1994) and Kozma (1991) debate in which Kozma speaks for use of the media for specific kinds of learning, we now might agree that tools must be used appropriately, when they add value (Hastings & Tracey, 2004). This concept directly impacts questions of social media use for learning. We have created technology tools and the tools have indeed changed the way we live in terms of how we think, and how we learn. While list-servs and discussion boards are not new, they were more difficult to use at first; interface design and improvements in functionality make a difference (Bingham et al., 2010). We explored here how the current affordances impact the learner and add value. With the advent of the Web 2.0 framework, many applications function as platforms that depend upon and reveal our “collective intelligence” due to the massive quantity of user input (O’Reilly, 2009, p. 2). An application may improve “the more people use it... while providing their own data and services in a form that allows remixing by others, creating network effects” (O’Reilly, 2005, p. 1).

In addition to becoming familiar with technological opportunities for learning, workers must contend with the pressure to learn quickly and continuously on the job to keep up with ever-changing technologies and job needs. “People need to learn fast, to keep up with the ebb and flow of their jobs ...” (Bingham et al., 2010, p. 5). Skill

development is a priority (Azua, 2010). Social media may help with this and offers other opportunities, such as connecting with others for social or collaborative opportunities through user-centric technology applications (Bingham et al., 2010). Some think that social media offers the enterprise advantages in terms of innovation and knowledge capture (Bingham et al., 2010; Azua, 2010). Organizations have additional needs; there are changing workforce demographics with baby boomers (born 1946-1964) leaving work and millennials (born 1977 – 1997) coming into the labor force; organizations seek to capture the tacit knowledge of those leaving (Meister & Willyerd, 2010). Social media has a role to play in mitigating these pressures.

Use outside of the enterprise is different from use inside the corporate world, as shown in the literature to follow. Some of the literature refers to studies within the university system since that is where many of the studies are currently being conducted. Other research is from private use. Some studies have been done inside of a corporate framework. Within the enterprise, the focus has been on motivation, communication, and performance improvement to benefit the company. This study approaches from the bottom up, listening to the voice and perception of the worker.

Theoretical Foundations

We begin by examining some theoretical roots about how people learn. Educational theories about the learner have changed over time. The approaches presented here provide a foundation for explaining how people construct knowledge, based on individual meaning-making and learning within a community, and offer guidance regarding the place of social media tools in that process. The main approaches are based on social constructivist theory and transactional communication theory. Other

scholars provide theories about the self-directed learner, scaffolding, the zone of proximal development, and situated learning.

The Self-Directed Learner

The learner as an individual who reflects and is self-directed is a primary aspect of this research. This learner makes meaning from her own experience (Smith & Ragan, 2005). This learner develops self-awareness and knowledge about how she learns. This learner prefers to have control of her own learning and the learning must be relevant (Merriam, 2001). Tough first described self-directed learning through his own research with Canadians in which they planned their own learning tasks; Merriam described Tough's view that self-directed learning is "a form of study...systematic yet does not depend on an instructor or classroom" (Merriam, 2001, p. 8). According to Merriam, Tough did not consider self-directed learning to be formal learning (2001).

Knowles, in 1975, discussed self-directed learning. Knowles, Holton & Swanson, in *The Adult Learner* (2005), stated, 1) adults can decide for themselves when something is important to learn 2) they have self-concepts that enable them to make choices for themselves or are self-directed learners 3) they have experience that impacts how they learn, 4) they must have a "readiness to learn," 5) they have a realistic context in which they can apply learning that makes a difference to them, and 6) they have an internal motivation that impacts learning most (2005, pp. 67-69). Not only must the adult learner in this research embody most of Knowles' characteristics, but position and task also play a role indicated in the first and fifth principles. The learner must decide if something is important to learn, and the learning must have an effect within a realistic context. Knowles et al., in a later reprint, cited studies that indicate the importance of

“commitment and motivation” and “job and career utility” for learning to occur (2011, pp. 182-183).

A point made by Knowles et al. by 2011, in an expanded concept of self-directed learning, is the importance of context at any particular time. That is a key point in this research. Other factors may play a role in whether individuals exhibit self-directed learning behaviors. The factors listed include “learning style, previous experience with the subject matter, social orientation, efficiency, previous learning socialization, and locus of control” (Knowles et al., 2011, p. 187). “Locus of control” refers to the concept that individuals feel they have control over their own situations (Knowles et al., 2011, p. 186). Among the factors mentioned, control was very relevant to this study since a work environment is clearly a mediating factor in terms of control over one’s situation and choices about how, when, and what tools to use for learning. According to Confessore and Kops (1998), self-directed learners may add knowledge to the workplace within practice communities. This research was intended to explore how social media can enable individuals to do just that.

According to Merriam, there is little reference to culture in Knowles’ principles (2001). Some of the other models prevalent at the time, derived from humanism, focused on self-direction in the process of gaining knowledge but added some additional goals. One goal was encouraging learning that can be transformational for the individual. This involves self-reflection within one’s cultural framework (Merriam, 2001). Some models in the 1990s included consideration of “...learning process, the content, the learner,” and context as well (Merriam, 2001, p. 9). The expanded concepts of self-directed learning along with self-reflection, transformational learning, and context seem very relevant as

we examine other theories that link learning with reflection and the experience of using social media tools for informal learning at work.

Donald Schon made more prominent the notion of reflection on the part of the practitioner (1983). His concepts could apply to the knowledge worker as well. Main concepts were the notions of reflection-in-action, which referred to allowing one to experience the feelings and emotions inherent in a situation, and reflection-on-action, which referred to reflecting on something after it has happened through various methods such as recording one's thoughts, or talking about an event after it has taken place (Schon, 1983). Since reflection was an expectation of the self-directed learner in some models, as stated by Merriam (2001), it was appropriate to briefly examine reflection here. Schon's methods of reflection illustrate an approach used in this research study and those underpinnings served to guide me as participants explained how they used social media for learning during and after logging their own practices. Those workers who are reflective may also be able to develop more self-awareness and knowledge about how learning occurs and can change for them.

The notion of online support from others is linked to the concept of scaffolding described by Jerome Bruner and has been especially important for this research. Wood, Bruner, & Ross discussed problem solving (1974). When the learner has assistance from a tutor, this experience is called "scaffolding" and it supports the learner in achieving goals that might not otherwise be reached (Wood et al., 1974, p. 90). The learner must be ready or predisposed to understand what the task will require in order for him to be successful alone (Wood et al., 1974). Wood et al. described a study performed to illustrate scaffolding (1974). During the intervention, tutors attempted to respond not

just to needs in directing the task, but also to particular learner characteristics that might affect the direction given. The authors clarified that in social modeling, children are only able to copy behaviors that they already know how to do somewhat successfully. However, with scaffolding, and tutorial direction, children interacted with tutors and received direction on learning to do things that they did not previously know how to do (Wood et al., 1974).

Do these same kinds of interactions take place in an online community? Applying this theory to the context of the workplace, do workers seek help online from others with expertise in the community when they face a problem at work? According to Meister et al., the worker has an opportunity to learn within a community using online social media tools (2010). If so, then social media might be a channel for scaffolding to take place. Further linking individual learning to one's community, Bruner stated, "One's local and general culture is one of the major support systems for scaffolding. They guide one toward what is relevant and keep one on the relevant track when one is attempting to solve problems. Indeed, one might even think of culture as a principal support system for scaffolding" (personal communication, April 24, 2012). The concept of scaffolding has been relevant to this research in the exploration of how workers may receive and also provide support in the online communities to which they belong at work. This research explored not imitative behavior, but supportive behavior as it helped workers construct learning and find meaning with others online.

Constructivist Perspectives

The experienced knowledge worker in the workplace must engage in learning in order to solve problems in the course of job performance. Constructivist theory is about

building knowledge based on an individual's experiences. Knowles et al.'s expanded view of the self-directed learner has similarities to the constructivist view that learners engage in an active process of learning based on their own experiences (Knowles et al., 2011; Richey et al., 2011). However, according to Duffy & Cunningham, "Knowledge is in the constructive process, rather than a finding" (1996, p. 6). Constructivism embraces the complexity of life as learners are actively constructing meaning (Siemens, 2005). Learning is an ongoing process for the worker.

Richey et al. (2011) summarized the main principles of constructivism, as stated. "Learning results from a personal interpretation of experience... is an active process, occurring in realistic and relevant situations, and learning results from an exploration of multiple perspectives" (2010, p. 248). In individual constructivism, the focus is on how individuals make meaning from their own experiences. Central and prior to making meaning is the development of knowledge about oneself, self-knowledge, and awareness of how one learns (Richey et al., 2011; Duffy et al., 1996). This may involve creation of a learning environment. Making meaning also involves learning that is active and takes place within a realistic environment where learning can be applied, as opposed to a classroom, (Richey et al., 2011). This describes an informal learning environment, not directed by an instructor. The learner processes information through real-life interactions and interpretations that further enable development of the learner's own cognitive skills (Richey et al., 2011). Real-life interactions may lead to an exploration of other perspectives. That is, being exposed to other perspectives through interactions gives one the opportunity to see through another's eyes. Seeing through the eyes of others, as in an

online chat, for example, can lead to new discoveries. The self-directed learner, as described previously, may choose to use social media tools in this same way, to learn.

All of the above aspects of constructivism are seemingly apparent in social media opportunities online. This study explored views of individuals in authentic settings at work as they used social media to learn. When using social media to interact, workers see and hear the perspectives of others. All individuals have different experiences and different perspectives (Campos, 2007). Given that an individual does engage in reflection and self-directed learning activities, this study contends that social media provides such learning support and opportunities through online connections.

There is considerable support for constructivist theory as an underpinning of workers' experiences of learning through social media. Some theorists are rooted in social constructivist philosophies. These include Vygotsky; Brown, Collins & Duguid; and Lave and Wenger. Early theorists were Dewey and Piaget. John Dewey provided very early roots when he spoke of the importance of the community in learning and he said that the "unconscious influence of the environment" is so subtle and pervasive that it affects every fiber of character and mind" (1916, ch. 3). According to Piaget, children are assimilating when they filter data that they take in, they accommodate or incorporate the new understanding with current schemes, and then they adapt to that change in an equilibration process (Piaget, 1969). Piaget stated, "...an equilibration is necessary to reconcile the roles of maturation, experience with objects, and social experience" (1969, p. 159). Thus, he was an early influence on constructivism.

Relevant to the current research is that social constructivists view constructivist theory as more collaborative than individual constructivists do (Smith & Ragan, 2005).

Meaning is determined by the sharing of perspectives with others; this is the concept of intersubjectivity (Woo et al., 2007). In social constructivism or with a socio-cultural perspective, based on Vygotsky's theories, social interactions, multiple perspectives, and cultural context are emphasized in learning (Duffy et al., 1996.). This perspective is essential to an appreciation of what learning through social media can offer. Culture has a strong impact. For Vygotsky, psychological development has roots in an individual's culture (1978). Personal transformation can occur through the signs and tools of the culture. Vygotsky states, "The internalization of socially rooted and historically developed activities is the distinguishing feature of human psychology" (1978, p. 57). Vygotsky suggests that tools can mediate this process and cause modification in how individuals think and adapt (Vygotsky, 1978). The question, then, is how these theories can be applied to the culture within the corporate workplace.

A pivotal concept that supports this research pertains to Vygotsky's concept of support through a "zone of proximal development," or ZPD, as one of the foundations of learning (Vygotsky, 1978, p. 84). This zone indicates where the independent learner is developmentally and where she needs support to proceed to another level of learning (Vygotsky, 1978). The zone indicates areas of potential development. Learners are able to engage in increasingly more complex thinking in an area in which they are not fully knowledgeable with support from someone who can provide assistance, and as they gain more complete understanding (Hannafin, Land, & Sharma, 2011). Moreover, "human learning presupposes a specific social nature" (Vygotsky, 1978, p. 88). In this way, learning takes place within a culture of supportive others.

Woo & Reeves (2007) provide examples of how the social constructivist theories examined here might apply in terms of social media interactions. Their view is that these Internet applications provide opportunities for interactions and tasks within a ZPD, based on Vygotsky's concepts, through applications such as forums, chats, and other collaborative tools (2007). Possible activities include "responding, negotiating internally and socially, arguing against points, adding to evolving ideas, and offering alternative perspectives with one another while solving some real tasks" (Woo et al., 2007, p. 19). While engaged in authentic tasks, individuals may interact with peers and others to share materials, links, points of view, come up with new ideas, and synthesize knowledge with online connections to derive new ideas (Woo et al., 2007). These examples can be applied to the current research as well. Such exchanges may function as opportunities for effective support. Woo et al. do not examine any specific social media applications such as Facebook, Twitter, or LinkedIn. They approach their discourse from the view of the educator (2007). Woo et al. provide useful theoretical background that attempts to increase the relevance of social-constructivist theories to online activities today.

The theoretical framework underlying this research would not be complete without several other perspectives. Workers face problems that need to be solved within the work environment. Brown, Collins & Duguid (1989) provide a seminal perspective on authentic learning, situated cognition, and social support for the learner. Brown et al. define authentic activity as practices that would normally take place within a situation (1989). Situated cognition refers to knowledge that is "situated, being in part a product of the activity, context, and culture in which it is developed and used" (Brown et al., 1989, p. 32). Certainly the situation could be the workplace, a realistic situation within a

particular context such as this research suggests (Brown et al., 1989). The authors argue that learning cannot be taken away from the daily activities in which it takes place, based on examples in their own study (1989). Brown et al. argue that both what we learn and actions taken are part of a process that continues throughout our lives (1989). They confirm the importance of enculturation for learning to take place (1989). In the corporate world, this might mean being able to learn as a result of practices and understandings within the working culture, observing others within a virtual environment at the job, or learning how to carry out one's job responsibilities by learning from others who already know the ordinary practices. Brown et al. support the importance of learning from relevant activity within the needs of one's work, which this research has explored.

Lave and Wenger (1991) go further theoretically than Brown et al. (1989) with the notion that, "Learning is not merely situated in practice... learning is an integral part of generative social practice in the lived-in world" (Lave et al., 1991, p. 35). Their concept of peripheral participation refers to a social experience for those who are new to a particular kind of practice and takes place within a community. In other words, individuals acquire more access to and become more involved in a particular knowledge community as they become more experienced and knowledgeable about the complexity of the practice (Lave et al., 1991). This theory and practice would be relevant both to newcomers within a job in the workplace and to those who are experienced and who support other learners' by being contributors to the knowledge base and to community interactions. Lave and Wenger's situated learning theory supports the central concept of learning taking place within a community. With the concept of "communities of

practice,” Wenger, McDermott, and Synder (2002, p. 1) confirm the need for knowledge workers within an organization to connect with others, to share knowledge, and to keep learning. Social media tools enable these communities to be continuously accessible online, more informally, for workers to join in ongoing interactions.

Wenger et al. also address strategies for management leaders. The pace of information change is fast in the global economy (Wenger et al., 2002). To keep up with this pace, some organizational knowledge management leaders have strategies that include opportunities for connections between knowledge workers. These leaders are focused on facilitating the acquisition of tacit knowledge and managing it for the company (Wenger et al., 2002). Communities of practice have been part of this strategy and involve “interaction and informal learning processes such as storytelling, conversation, coaching and apprenticeship...” (Wenger et al., 2002, p. 9). These social communities must offer value for the worker as well as for the company (Wenger et al., 2002). This perspective has not always been recognized. The question remains as to whether this strategy can be applied globally, and whether management sees new opportunities in which social media would play a role.

Communication Theory

Another relevant aspect of social media use for informal learning is communication theory. Communications can travel from one or more to many people simultaneously. The learner may search and find new and existing communications networks to filter useful information quickly. The Schramm Model of communication, as described by Gerbner, was one of the first interactive models (Richey et al., 2011). It describes a two-way, interactive model that moves messages from the sender to the

receiver or interpreter and back to the sender who also interprets, in both directions at the same time (Richey et al., 2011). The Campos Ecology of Meanings Model reflects additional change and is reflective of current social media use. The model is a transactional model that emphasizes communication between multiple senders and receivers through two-way conversations (Richey et al., 2011; Campos, 2007). Here the learner can experience significant and transformative change in the workplace using social media tools and interacting with others to communicate and learn. In the Campos Model there is a change to “co-creating meaning between actively engaged participants” (Richey et al., 2011, p. 36). According to Richey et al., the two different communication models represent a “philosophical continuum...” (Richey et al., 2011, p. 39). Campos states this his model is a “critical constructivist communication model” (2007, p. 386).

When we use the Internet and post questions or concerns through social media applications, our contacts and topics are diverse. Similarly, Campos’ model envisions a cross-disciplinary approach (Campos, 2007). He integrates information about scholarly contributions across academic areas, such as psychology, communications, and sociology. He concludes that these various approaches are constructivist because they share the view that knowledge is “contextually situated,” as is communication (Campos, 2007, p. 387). His approach builds on Piaget’s in the sense that experience impacts mental structures, the mind achieves equilibrium, and adapts to these interactions (Campos, 2007). Campos adds the “critical” term to his own conception of constructivism to indicate awareness, intentionality, and assessment on the part of the communicator (Campos, 2007, p. 388). In short, Campos’s model requires reflection and

brings together multiple viewpoints for knowledge exchanges, sharing similarities with the constructivist perspective.

Campos synthesized the work of Piaget, Grize and Habermas to develop the “Ecology of meanings critical constructivist approach to communication” (2007, p. 396). Campos’ model supports the importance that digital communications play in this research in terms of the individual “making sense of himself or herself and of the outside world” (Campos, 2007, p. 396). Letters A and B in Figure 1 indicate interlocutors. Letters C and D refer to “multiple interlocutors,” for example, chats or forums online (Campos, 2007, p. 398). “Images of the world,” as shown, represents the different views of reality (Campos, 2007, p. 400). Through this model, Campos supports multiple views of reality.

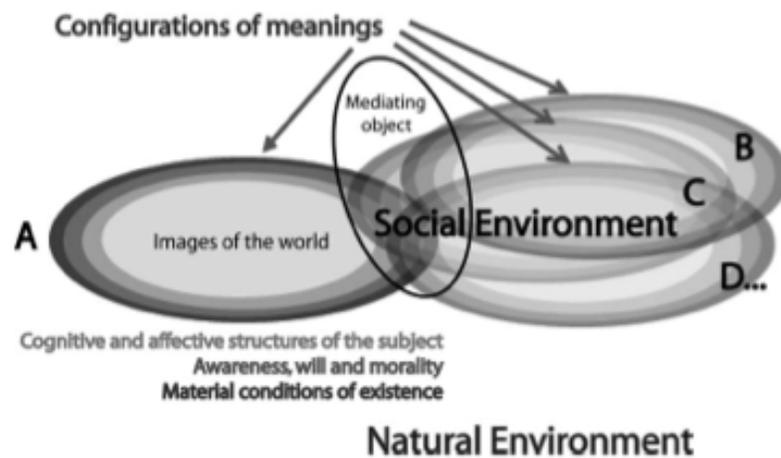


Figure 2. (Campos, 2007, p. 398). Ecology of Meanings Model

Campos’ model can be applied to workplace social media communications as well, within the contextual constraints of the situation. Campos explained that through his model an “exchange leads to construction and co-construction and to learning” (2007, p. 400). Shared exchanges can lead to building knowledge; Campos sees this as

similar to Vygotsky's "zone of proximal development" (Campos, 2007, p. 400). Campos stated that his model addresses the notion that individuals construct perceptions and possible solutions together (2007). Applying this model, one can view workers as participating in co-construction and learning together. Implications of this theoretical approach support the view of this study that the learner can experience significant and transformative change in the workplace using social media tools and interacting with others who provide a ZPD in which to communicate and learn.

This section on theoretical foundations has now been situated within a social constructivist framework. Based on this foundation, individuals may chose to participate in ongoing learning experiences where they interact with others and provide or experience scaffolding for learning, where problem solving takes place within the context of one's environment, where knowledge is co-constructed through the exchange of multiple perspectives (Wood et al., 1976; Brown et al., 1989; Richey et al., 2011). The research problems that were explored in this study were focused on individuals who are self-directed and value learning within learning communities, especially within authentic contexts, on-the-job. The voice of these individuals can now interact with readers of this research.

Technology and Web 2.0

Social technologies have been involved with ongoing changes in our lives. *Time Magazine* named "you" as "Person of the Year" in 2006 due to what they considered to be the control individuals began to have via computer applications using "Information Age" technologies (Grossman, 2006, p. 1). People began to generate increasing amounts of content and engage in ever more conversations online. Web 2.0 platforms offered

users the ability to find new and desired information quickly (Budin, 2005). According to George Siemens, “technology has reorganized how we live, how we communicate, and how we learn...” (2005, p. 1). The MacArthur Report, in *The Future of Learning Institutions in a Digital Age*, informed us that learning has become participatory through the use of technology (Davidson & Goldberg, 2009). People no longer are passive about learning. Concepts of learning involve a focus on process, interactions, collaborative creation, and the use of digital tools with other individuals who may or may not be acquainted with you (Davidson et al., 2009).

There is change and challenge for the worker in the enterprise. Workers no longer expect to hold one job for an entire career. Trends show that people may change jobs many times during their lives (Siemens, 2005). Workers must stay up-to-date on information and yet avoid the overload that comes from too much information; they must find and filter information instead. Some say that being able to find content is now more important than knowing facts (Siemens, 2005). Siemens, writing about his theory of Connectivism, believes that learning comes from connections, referring to online social networking applications (2005). Siemens says we learn continually and may no longer separate work and learning activities. Yet, Siemens still begins with the individual who develops a network of trusted people who enable knowledge to flow and to feed into an organization. This is not too distinct from the ZDP of Vygotsky in that the trusted community provides support. The constructivist model we previously examined also supports the learner in her search to make meaning and to learn via a community that may be formed using social media tools. Siemens’ acknowledges the overwhelming stream of information that the worker must now face and he places a

community-centered approach to learning theory squarely within our social technology opportunities (2005).

Huang (2002) substantiated the positive value of the online environment as a place where the learner has the freedom to explore resources and construct knowledge. The author linked andragogy, online use and constructivist theories, from Dewey, to Piaget, to Vygotsky, and then to Bruner and Knowles, synthesizing the work of scholars in the field (2002). According to the author, these theories all confirmed a view of active learning and knowledge construction “based on... prior knowledge” (2002, p. 28). Vygotsky’s approach, social constructivism, focuses on interactions with others. Bruner embraces technology as a cognitive tool for learning (Huang, 2002). Some of these characteristics overlap with elements of constructivist theory. Other adult learning principles include the notion that “when they become skilled at learning, adults have the ability of lifelong learning” (Huang, 2002, p. 30). Huang wrote from the viewpoint of the instructional designer and did not address the workplace.

Social media use for learning involves the notion of participatory learning. McLoughlin and Lee presented a view of technology use today that they call pedagogy 2.0 (2007). The authors discussed the ways in which learners synthesize and recombine content. A central theme of this research has been the focus on self-directed learners and choices that such learners now have as a result of Web 2.0 technologies (McLoughlin et al., 2007). The authors stated, “Beyond the walls of formal places of learning, there is a plethora of online groups of individuals that are self-directed, vital, self-managed and active in the generation of new ideas, and... examples of thriving knowledge creating communities” (2007, p. 664). These notions were central to this investigation as we

examined learner characteristics and the impact of technologies that enable participation. Learners are not passive receptacles for content. Rather, they have an active role in how they learn. However, the context that follows next is that of academia and the focus is on students, not workers.

McLoughlin et al. “identify the affordances of Web 2.0 based social software tools” (2007, p. 664). They explained the concept of affordances as a task or purpose that a person can accomplish through use of a specific tool (2007). In terms of learning, many other factors impact effectiveness as well as the affordances from a technology tool. However, Web 2.0 does enable participation and the collective intelligence that emerges from users who generate content in the process of collaborating and sharing (McLaughlin et al., 2007). McLoughlin et al. did not present research to establish these tool and learning relationships (2007). They did recommend further research to explore online learning.

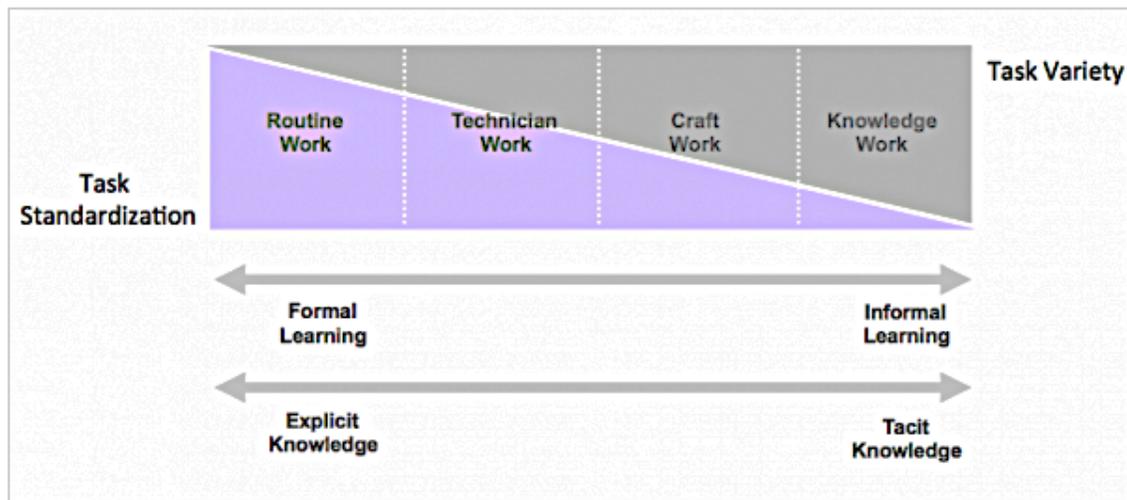
Informal Learning

The concept of informal learning plays a growing role in how we think of our everyday learning. If we need to know or learn something, we may look it up in a book, look it up online, or contact someone for support. We have defined informal learning as not structured, out-of-the classroom, initiated by the learner, and as helping one to learn to do one’s job (Cross, 2007). “People learn informally most of what they need to do their jobs” (Cross, 2011, p. 17). Informal learning may also be characterized as “learning from and through experience” (Marsick et al., 1960, p. 15). Some sources state that it consists of a range of different kinds of learning experiences and that few experiences are either all one or the other (Cross, 2007; Bingham et al., 2010).

An important aspect of self-directed learning is that, by definition, one can initiate interventions, or find scaffolding of one's choosing to help in problem solving, learning in different ways. The 70/20/10 model of how people learn that has been widely accepted explains that learning takes place in approximately the following ways: 70% through informal methods such as on-the-job experience, 20% as likely to involve social interactions such as getting expert advice or feedback, and 10% through formal instruction (Meister et al., 2010). Bingham et al. (2010) and the Princeton University Office of Human Resources attribute this to Eichenger, Lombardo, and McCall (2012). It is difficult to locate the original study that forms the basis of these results. A study from Deakin University stated that it could have originated from a publication by Allen Tough in 1979. Deakin University stated, "There is a lack of empirical data supporting 70:20:10 and, while the resources mentioned... are frequently credited, there is also a lack of certainty about the origin" (2013, p. 3). Currently, informal learning is widely accepted as important and as a complement to formal learning, regardless of any model or suggested division of types of learning. The purpose in this research was to explore the opportunities for self-directed individuals to enhance their own meaning-making process through informal learning, and specifically using social media.

In the enterprise, companies are investing in social media tools. According to Mallon, et al., in 2011, approximately one quarter of 748 responding companies in the United States purchased some services that would enable more opportunities for social and informal learning (2012). A blog post by Tom Gram (2012), *Mapping Informal and Formal Learning Strategies to Real Work*, utilizes a model based on job roles and connects roles to the use of informal learning solutions. For example, Gram grouped

routine work as needing more structured, formal instruction (2012). He mapped knowledge work with great variety and less structure, requiring different tasks, to more informal strategies. Jobs are based on a “routine vs. knowledge work” continuum that charts needs to suggest that informal solutions would most benefit those knowledge workers with less standardized work (Gram, 2012, p. 2). Some criticisms of this model are: there is no empirical evidence available and there are numerous other factors that one could examine such as age, experience, type of task to be performed. Others raised these additional issues on Gram’s blog. The model’s shortcomings point to the need for more research. My study seeks to provide more information from the perspective of the knowledge worker engaged in a range of tasks .



Work Types, Task Standardization and Task Variety

Figure 3. (Gram, 2012)

Marsick and Watkins, (2001), defined informal learning similarly. Formal learning is “typically institutionally sponsored, classroom-based, and highly structured” (Marsick et al., 2001, p. 25). Informal learning is not very structured and is meant to occur out of the classroom. The learner typically controls or initiates the activity

(Marsick et al., 2001). Examples that the authors gave are coaching or learning that is self-directed. An individual might have tacit knowledge that is shared upon being questioned. In the workforce, we experience this when we ask a colleague to explain something to us. Some associations that informal learning has with different learning concepts include: self-directed learning as associated with Knowles (2005), reflection-in-action as associated with Schon (1983), social modeling as denoted by Bandura (1986), and there are others (Marsick et al., 2001). Marsick et al. essentially confirmed the use of “informal learning” as already discussed in this current research study. There are other categories of learning types that Marsick et al. discussed (2001), but for the current research, we limited our scope to consider the formal to informal as a range of learning solutions.

Eraut commented about informal learning that it “provides a simple contrast to formal learning or training that suggests greater flexibility or freedom for learners. It recognizes the social significance of learning from other people...” (2010, p. 247). According to Eraut, most learning in the context of the workplace is informal and involves learning from experiences and from others, either separately or at the same time (2010). Eraut also stated that learning in the workplace demands a level of confidence that may come from past successes at work and from having had support in the past in meeting work challenges (2010). Eraut distinguished different categories of informal learning. Again, we limited our scope to describe learning solutions based on a range of formal to informal.

Social Media for Informal Learning Outside of the Workplace

Much of the current research considered for this literature review took place in formal or structured learning settings such as K-12 and college courses due to the greater availability of academic studies. Situations may not clearly be formal or informal (Cross, 2007). Social media tools may be used in formal settings, still offer valuable support and contribute to learning, as we see in some studies that follow. Social media tools used here include microblogging tools, wikis, some mixed tools, and a social elearning platform.

Social Media Outside the Workplace – Microblogging

Many current social media applications were implemented in the early 2000s; research on social media commenced after that time. Facebook was implemented in February of 2004 (Facebook.com/facebook, 2014). Twitter's first tweet appeared in 2006 (Twitter.com, 2014). LinkedIn was online in 2003 (ourstory.linkedin.com, 2014). Java, Finin, Song, and Tseng examined a social network, Twitter, in one of the first studies of a micro-blogging application (2007). The researchers studied Twitter to discover user information such as location, user intentions, and use of information. They reported on how widely dispersed individuals share information and news, among other behaviors (Zhang, Qu, Cody & Wu, 2010). The methods were quantitative and qualitative. The authors monitored users via public user data and analytics applications to find properties of the Twitter network of 76,000 users for two months in 2007 (Java et al., 2007). The main objectives were to find out what users wanted to do, how users form communities, and to “discover how and why people use these tools” (Java et al., 2007, p. 2). They aggregated over 1,348,543 posts to study growth and postings rates.

They also determined distribution of users across the globe, correlations between use and community memberships, follower numbers, interests, and content of posts.

Results showed the importance of prior relationships; many users joined due to invitations from friends. The authors say, “Users who are invited by people with whom they share pre-existing social relationships tend to stay longer...” (Java et al., 2007, p. 2). Behaviors relate to what users’ intents are. Some users specifically share information and news (Java et al., 2007). At least 13% of users share links; Twitter communities tend to aggregate around information sources (Java et al., 2007). Many users feel overwhelmed by the amount of content (Java et al., 2007). The authors conclude they have shown user intentions in communities in which users aggregate.

This research fits into the framework provided by the work of social constructivist authors such as Vygotsky (1978), and the Ecology of Meanings framework of Campos (2007). People interact and learn on a large scale. Java et al., provided evidence that established some foundations regarding the importance of social connections, and that there is a sharing of information and links within social communities online. Java et al. suggested more research to have a better understanding of tool use.

Timeliness and social presence were the focus of social media use for Dunlap and Lowenthal (2009). These authors explored the social aspects involved in learning in an educational environment through Twitter use. They suggested that Twitter, a microblogging application enables learners to interact in a timely way. Dunlap et al. stated this improves one’s sense of “social presence” or learning with others (2009, p. 129). They conducted a qualitative study in which Twitter was incorporated into online

classes in instructional technology (2009). Sample size is not listed and findings were reported simply as “Teaching Tips” (Dunlap et al., 2009). Some findings included becoming part of a “professional community of practice” and “supporting informal learning” (Dunlap et al., 2009, p. 132). The definition of informal learning given in this case was that it is independent but still supports a formal activity (Dunlap et al., 2009). This definition differed from the one used in this study in which no formal activity would be involved and illustrates the difficulty of comparing informal learning within a formal environment, a university environment, to that of a business context. The authors also described some constraints, such as participation could be addictive, that students needed role modeling from instructors, and expectations had to be defined clearly for students to participate. In addition, the lack of empirical data limits the usefulness of results although reported results are suggestive of support for social media to enable future professional skills in learning.

Dunlap & Lowenthal (2010) revisited their first study sample with a second phase using surveys that were followed with interviews. In this study, additional technologies were available besides Twitter. Dunlap et al. found that tools such as Twitter were not as valued in comparison to one-to-one emails, Adobe Connect sessions, direct audio or video communications from the instructor and a few other applications (2010). There were some limitations of the study including that it was not complete, and Dunlap et al. requested no final conclusions be drawn from it. By 2011, Dunlap et al. concluded that self-directed learning, meta-cognitive skills, and the use of social media tools and resources provide a foundation for the shift that college educators face in moving from teacher-centered to learner-centered approaches in their classrooms. They

also focused on the use of social media tools and resources to help students make the shift to lifelong learning within a community of practitioners in the workplace in an enculturation process (2011). Lifelong learning for Dunlap et al. refers to “intentional learning that people engage in throughout their lives for personal and professional fulfillment to improve the quality of their lives” (2011, p. 2). The authors discussed the elements that help make students lifelong learners (Dunlap et al., 2011) and referred to Malcolm Knowles who has described self-directed learning as, “The process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs...” (Knowles, 1975, p. 18).

Dunlap et al. linked student needs to those students will need as professionals as they move into the workforce. “Employers are now looking for employees who can think critically... work... effectively in team situations, and constantly adjust... their knowledge and skills...” (Dunlap et al., 2011, p. 2). Dunlap et al. made the case that self-direction is critical in assisting individuals to learn as they move into jobs and throughout their lives; Web 2.0 technology skills can assist individuals in this task (2011). According to Bersin and Associates (2011), technology use has changed within the workplace. New graduates in the United States must be trained after hire, with just 32% having appropriate skill levels. As a result, new hires must undergo additional training (Bersin, 2011). Dunlap et al. accurately identified this need and connected that with technology expertise (2011).

With regard to other benefits, Dunlap et al. speculated that benefits of social media use within the workplace would: “encourage reflection,” “encourage discourse and collaboration” (2011, p. 5). Dunlap et al. suggested that enculturation, learning

about one's culture and values, can happen through the use of tools such as microblogs and social networking applications and by belonging to a community (2011). The authors detailed software activities to support collaboration skills that might include working on documents together in wikis, in Google docs, or Twitter for microblogging (Dunlap et al., 2011). These are the same kinds of skills and activities explored in the current study. Using these tools leads to scaffolding available in new communities online (Dunlap et al., in 2011). This position of Dunlap et al. is important in that it synthesizes many of the issues involved in explanations of the learner and use of Web 2.0 technologies. They provided the groundwork for further research both in and out of the classroom. Dunlap et al. referred to a previously mentioned study, *Tweeting the Night Away, Using Twitter to Enhance Social Presence* (2009) for data to back up these conclusions. These authors provided a great deal of foundational understanding of how Web 2.0 tools can be utilized within the context of academia. More research is needed to support their conclusions regarding what actually does happen in online workplace communities.

Thus far we have confirmed that pre-existing social relationships have an effect on social media use outside of work and that people do share links and information outside the workplace (Java et al., 2007). There have been indications without substantial data from exploratory studies, within a college setting, that social media may enhance self-directed learning, meta-cognitive skills, and enable reflection, conversation, or working together (Dunlap et al., 2011). Dunlap et al., using a different definition of informal learning that acknowledges formal activities, seek to provide learners with more control over what and how they learn (2011). At times, instructors

may provide just-enough scaffolding to the learner and there are classroom incentives and assignment requirements for the student.

Ebner, Lienhardt, Rohs, and Meyer (2010) focused on informal learning within a formal context, the university. In this case, social media use was strictly limited to microblogging. The authors contended that microblogging enables sharing content, finding information, and building social connections. The study explored “process-oriented learning” so students themselves can determine how to learn (Ebner et al., 2010, p. 92). The authors argued that these features provide value and help people connect, especially in view of the changing role of the instructor from that of teacher to that of a “facilitator of self-directed learning” (2010, p. 93). Ebner et al. believe learning should enable differing perspectives (2010). This function would align with a social constructivist approach. Ebner et al. also discussed formal versus informal education, and they believe that there is a “continuum” (2010, p. 93). They believe their study offers informal elements although it is an educational environment. Most important is whether a student's study is “self-directed...” (Ebner et al., 2010a, p. 93).

Ebner et al.'s work supports similar theoretical constructs as in this research; they conducted research on microblogging and provide evidence of learning, collaboration and valuing of making connections within a formal setting. Ebner et al. asked: “How are students using microblogging in the context of a course?” (2010, p. 15). Can microblogging be used for documentation and facilitating of daily or weekly learning steps... using process tracking...?” (p. 96). “Does microblogging foster informal learning?” (p. 97). 11,214 posts were analyzed, providing quantitative data. Thirty-six participants posted an average of 53 times each per week of which

approximately 13 posts concerned learning and teaching. The authors concluded that this confirmed strong results for communications (Ebner et al., 2010). They concluded that the number of posts were probably related to the learning process and reflected comprehension. There were also a large number of private messages (Ebner et al., 2010). They said private messages are where informal learning would take place and those messages increased during the course of the study. The authors reasoned that informal learning did occur (Ebner et al., 2010). Additional analysis revealed that over 60% of posts indicated direct communication to someone, two thirds of the messages were communicative, one third were informational only, and 15% were about learning. Student discussions grew in number when not directed (Ebner et al., 2010).

A survey of 32 students was completed as well. The authors determined that most students used the media since it was a requirement of the course. Students were doubtful about use at the start (Ebner et al., 2010). By the end, evaluations showed that students were happy about the social media use (Ebner et al., 2010). There were complaints of feeling overwhelmed due to the amount of information. The results suggested that students might use new connections for additional learning opportunities. The authors reported that one of their goals, to give students a sense of what could be accomplished with new media, was accomplished (Ebner et al., 2010). The authors see value for “support of collaboration, feedback, learning through informal communication ... and to ... examine thoughts and causes of learning” (Ebner et al., 2010, p. 96). This study confirmed the positive value of students using microblogging for learning as directed to accomplish collaboration and informal learning in an academic setting. This study provided data regarding ability to form new

connections, learn, and collaborate in a formal setting as part of a directed curriculum. Information overload was also part of the findings.

Social Media Tools Outside the Workplace - Wiki Technology

Thus far there is empirical support for microblogging for social use, such as maintaining contact with friends, and to exchange information. There is evidence that microblogging can enhance learning, collaboration, connecting with others, and result in information overload within a formal academic environment. Other possible findings from research within a formal academic setting include appreciation for lifelong learning, enhanced self-direction and reflective skills, and scaffolding in online communities.

Wikis are also social media tools; they are known for providing collaborative opportunities to create content. Wikipedia is an example of a well-known wiki. Weaver, Viper, Latter, and McIntosh linked Vygotsky's theory of social learning with their research project and said it supports the notion of interactions as beneficial to students' ability to construct knowledge together (2010). Weaver et al. described the goal in their case study as knowledge sharing and enabling students to interact. The authors described efforts to document, once again, a "more learner centered approach" (2010, p. 847). A wiki was the application of choice at this university because it allows students to work collaboratively and synchronously on the same files and to communicate with each other online. The context for this pilot study done in 2008 was that of students in a formal course, not living on campus, working together and collaborating on a wiki.

Weaver et al. (2010) used qualitative methods and documented experiences of two students and one facilitator following completion of the six-week project; in

addition, Weaver et al. used teacher feedback and application data. Groups were composed of six people. Students were to write on course assignments and had rubrics. Students were scheduled to speak with instructors and team members at online weekly chats. Teamwork and contributions were considered in grading. The wiki application could track contributions and was a factor in grades (Weaver et al., 2010).

Qualitative data came from three participant accounts. One staff member reported that participation by some students was not high and this was disappointing (Weaver et al., 2010). Students became more collaborative after feedback from staff. Not all students assigned to a group contributed. Students had support materials such as video demonstrations on Blackboard, PDF documents, and online chats with university staff. Other types of electronic communication or phone supports were available (Weaver et al., 2010). Students who had previously formed connections to members they already knew performed better. The collaborative goal was for students working together to contribute to all components. Student feedback was positive in spite of reservations expressed at the beginning. Most students felt they were successful and effective collaborators. Students who were more active said they were proud of the project results. Most students gave feedback during the project that showed “broad approval of the wiki process” (Weaver et al., 2010, p. 853).

Two students gave added input. One student said there was too much information at first (Weaver et al., 2010). The working process and chats provided a bonding experience for those who were active together. The student retelling this experience felt there was a great deal of useful learning and experience gained using different learning methods, recognizing the reliability of sources, and in knowing the

student's own preferences (Weaver et al., 2010). However, Weaver et al. reported that instructors had hoped for more collaborative activity and that having the tools did not necessarily elicit collaborative behaviors. Some students were more engaged than others. In this study, again, information overload was reported. Individual characteristics were not reported except that some students were more motivated. A more rigorous methodology would provide more data to support conclusions. The importance of scaffolding from staff in this academic project was critical. While the wiki provides a collaborative platform, future research could give results in the workplace where workers' must solve problems themselves and construct knowledge when they need it. Scaffolding would come from colleagues.

Hazari, North, and Moreland explored use of a wiki as providing other learning values, within an educational environment, to increase motivation and active learning, and to explore individual student learning preferences (2009). Hazari et al. focused on instructional value as "the capacity of students to be engaged in learning by exhibiting interest... participating actively... and collaborating using constructivist learning principles (such as group interaction)" (Hazari et al., 2009, p. 188). One of the theoretical foundations of the Hazari et al. research was constructivism wherein students must problem solve and collaborate, and the other was engagement theory in which students interact and learn as they develop problem solutions (2009).

Hazari et al.'s questions were geared towards a comprehension of the factors that contribute to the wiki helping people learn; the focus was on wikis. Hazari et al. asked: "What factors contribute to pedagogical value of Wiki technology? What is the relationship between the factors?" (2009, p. 188). Hazari et al. also discussed the

concept of “collective intelligence” in relation to wiki use and cite Jenkins (2006) for his statements on forming “participatory communities” (Hazari et al., 2009, p. 188). The authors provided a validated scale and developed a survey. Using their methodology and Exploratory Factor Analysis, they derived hypotheses that identified their areas of interest for testing. They tested for motivation, overall learning, group interaction, and technology. Their hypotheses were designed to determine PVW or pedagogical value of wiki score. They also surveyed student perceptions of usability, interface design, technology problems, and compared the wiki to another available tool (2009). In this way, they addressed the tool as well as the processes and learner outcomes.

In terms of methodology, there were 70 participants in the survey. 45 were females; 25 were males. Students participated in various assignments that required discussion groups and collaborative writing, where students worked together. Wiki work was 10% of the student grade. Findings from the survey showed how certain factors changed student experiences. One conclusion was that “web development experience was not related to PVW. Gender and work experiences were “significant predictors of PVW score” (Hazari et al., 2009, p. 194). Students who had little experience in using Wikis found it more valuable than those with more experience (Hazari, 2009). Males rated higher in PVW (Hazari, 2009). Age was determined not to be a predictor of PVW. Students thought it was easy to use wikis and work with others. Negative responses included that others could change content (Hazari et al., 2009). Findings also indicated that instructors had to give up some control over the activities to enable more collaboration.

Findings indicated potential wiki value. Additionally, the wiki was used within a formal environment. Users had guidance or scaffolding from staff or staff provided resources (Hazari et al., 2009). In order to implement wiki use within a company environment, learners would need to provide some scaffolding for each other. In a work environment, wikis would not be intended to provide learning necessarily just for the people that work on them, but for the people who use them. The authors suggested opportunities for research on learner characteristics that could optimize success in social media collaborations (2009). Research on learner characteristics was provided in the current study. In addition, adult learners prefer to have more control and would likely have more control in an informal use situation outside the classroom.

Thus far, research has shown empirical support for microblogging for social use and to exchange information. There was evidence microblogging can enhance learning, collaboration, connecting with others, and may result in information overload. Collaboration was enhanced by wiki use with scaffolding support required in two instances in academia. Overload was also an outcome. Other possible benefits from previous research within a formal setting included appreciation for lifelong learning, enhanced self-direction and reflective skills, learning and scaffolding within online communities. Research on learner characteristics was needed. Almost all findings have been within academic settings and grades received were among the incentives.

Social Media Tools Outside the Workplace – an Open Source Social LMS

In another university study, an online open source elearning system similar to Moodle, separate from the school's learning management system, was established for participants to use for their studies according to Tasir, Al-Dheleai, Harun, and Shukor

(2011). Tasir et al. established that students preferred more control within their learning environments (2011). Findings showed that the social media tools enhanced connections and were generally appreciated. The study involved 600 senior university students who filled out questionnaires from which 234 responses were chosen at random and were analyzed and scored quantitatively (Tasir et al., 2011). There were differences in gender findings; female students seemed more skilled in using the system (Tasir et al., 2011). Findings confirmed the value of an online open source elearning system similar to Moodle for participants to use for their studies, in contrast to the online school platform. Findings also indicated students' preferences for more control over their learning environments, a confirmation of adult learning principles (Tasir et al., 2011; Knowles, 1975). Evidence that learners prefer more control over when and how they learn is a characteristic of Knowles' self-directed learner. Students believed that the tools allowed them to set up the environments in ways that suited each and that this enabled more interactions (Tasir et al., 2011). Students expressed the desire to produce content for themselves, and preferred the social media tools for sharing knowledge and collaborating with others, confirming the desire for connections to enhance knowledge sharing (Tasir et al., 2011). This outcome also confirmed the social constructivist perspective that knowledge construction is rooted within a community (Vygotsky, 1978); the data shares some theoretical foundations of this study, along with the value of enhanced tools for knowledge sharing. This quantitative study by Tasir et al. took place within a learning management system so context differed from others considered thus far and from the workplace.

Social Media Tools Outside the Workplace – Mixed Social Media

Chuang and Ku explored attitudes and users' perceptions about online social networking tools and how they could be used more effectively in education (2010). While this was a study done by educators, it was one of the few that explored perceptions from a public audience, an audience composed of people who already are experienced at the kind of social media use being considered in the study. Through a survey of 28 questions, Chuang et al. explored the views of random participants who use social media such as Facebook, Twitter, and Plurk in Taiwan (2010). Participants were found via a social media post within a public application in Taiwan. Researchers investigated use of social network perceptions in terms of frequency of communications, concerns, and use for educational purposes. The study asked: "1) what are participants' attitudes toward online social networking websites? 2) What are participants' concerns or issues when using online social networking websites? And 3) what are participants' attitudes toward combining online social networking websites with education?" (Chuang et al., 2010, p. 1397). The sample consisted of 43 people (34 women and 9 men) who used Plurk and lived in the U.S. and Taiwan. Experience levels ranged from: "less than six months (23%)" to "more than two years (14%)" (Chuang, et al., 2010, p. 1397). Results were based on a Likert scale for all but four questions; those questions were open-ended and themes were identified (Chuang et al., 2010).

Findings showed that most participants used these sites at least once daily (Chuang et al., 2010). The biggest advantage users saw was the ability to easily and immediately share content or information and experience a great deal of interaction any time (Chuang et al., 2010). Users were also asked for their opinions about using social

media applications to support educational purposes and 70% replied positively (Chuang et al., 2010). This study provided support for the perceived value of social media to enable quickly sharing and learning within the educational system. The study provided support for the current research in that it solicited feedback from experienced participants on perspectives about use of the tools. Some negative aspects of use were that social networking was considered “addictive” and there were concerns about privacy (Chuang et al., 2010, p. 1398). The findings confirm the perceptions of social media as valuable to engage users and enable interactions. The value for sharing and learning was confirmed. This study was based on a quantitative survey geared towards academic use.

To explore user characteristics based on age, Williams and Chinn conducted empirical research within an academic setting (2009). They investigated the “active learning experience” in their study to establish the value of social media tools to “net gen” users (2009, p. 165). According to the authors, the study addressed the belief that the net generation of young people, born in the years 1982-1991, will feel increased relevance if social networking tools are used to enhance learning experiences (2009). This age group is a subset of the group identified here as millennials, born in the years 1977-1997 (Meister et al., 2010). Williams et al. suggested that the net gen audience prefers interactive settings and they want to be active in their own learning experiences (2009). Williams et al. placed their research within the broader spectrum of research on Web 2.0 research both in and out of the classroom and concluded that there is a lack of research at the college level, even though businesses are beginning to use web 2.0 applications (2009). There are, however, a number of studies for the enterprise that show

a generational impact is coming to the workplace. Brandon Hall states, “For Millennials, the experience of learning is no longer an event... This fast-rising global demographic strongly prefer more technology-based, personalized, just-for-me learning methods, and organizations are responding” (2014, p. 9).

Williams et al. (2009) used experiential assignments accessed through Web 2.0 applications such as Facebook, LinkedIn, MySpace, blogs, YouTube, emails, and more to engage 105 students in the assignment (Williams et al., 2009). Each student joined a team of five others (Williams et al., 2009). Student were not experienced with all of these tools at the time and said they benefitted from increased feedback (Williams et al., 2009). Goals had been to drive more active learning through greater engagement, and to enhance knowledge about how to use Web 2.0 tools. Each goal was considered as having been achieved (Williams et al., 2009). These findings confirmed that the use of social tools is likely to effectively engage this particular demographic sector within a similar context. One question is whether ‘net’ generation workers within the workplace will be similarly engaged, more so than other generations, in using social media tools and will there be increased active participation in learning within a workplace setting as a result. The findings were based on formal assignments.

Within the enterprise, social media tools similar to those individuals use outside of work, such as LinkedIn and YouTube, are being implemented in some companies for employee communications and for learning, along with gamification approaches such as quests and leaderboards showing top performers (Bersin, 2011). Each enterprise has a unique combination of applications and policies. Human Resources departments are focusing on keeping employees engaged in order to retain them, and consider social

applications to be one part of that effort (Bersin, 2011). The Williams et al. study was focused on a generational approach. Students were not experienced with the social media tools used. The tools were found to be useful for active learning with the “net gen” users born from 1982 to 1991, a critical point, in this sample (Williams et al., 2009). There is opportunity here for additional research that includes a population of varied ages to address the question of engagement and whether age is associated with self-directed learning with social media in the workplace community.

Previous studies confirmed benefits of using social media for students in a formal setting in terms of engagement, self-direction, potentially developing lifelong learning capabilities, sharing information, having more control over one’s choices, making connections and learning in educational environments or personally with various degrees of empirical evidence.

The voice of the student can be heard in the work of Cecil Batchelder (2010). Batchelder provided a phenomenological approach similar to that of my own study. Batchelder’s work focused on social networks in a college setting. He considered: microblogs, social bookmarking, social networking, blogs and other applications. His population consisted of seven students and he asked, “What meaning do students who actively participate in social networking ascribe to their experience?” (2010, p. ii). He based his study on Moustakas’ work and asked about “lived experiences of social networking,” using phenomenological qualitative analysis (2010, p. ii). His research design included an interview, an observation, logs, and access to web activities. The author described findings from participant experiences as a greater ability to find information, “self-actualization and personal growth, a commitment to lifelong learning,

finding solutions through collaboration with others,” establishing connections with supports, and “self-directed” learning (2010, p. ii). Participants received instruction, as part of the study, on how to use applications. This kind of instruction may not routinely happen in the workplace or in another environment. Batchelder reported that participants emerged with a stronger belief in their own research capabilities.

Batchelder’s work was relevant here in that it reflected similar research goals and methods. It presented learner voice and perspective (Moustakas, 1994). His study provided a strong foundation except that design, roles, environment, and participant characteristics differed. Batchelder’s dissertation was clearly structured. The summary identified possible learning outcomes and new skill-sets for the participants through the use of the technologies that will occur in “any learning environment” (Batchelder, 2010, p. 99). Batchelder’s work contributed to the understanding of social networking and Web 2.0 tools for instructional designers and those in higher education. His findings showed that individuals who actively participate in social networking experience growth and a greater sense of control over one’s own educational goals. He also confirmed that students value learning, problem solving through collaboration, and growth. My own study moved this discussion to the enterprise; but the voice and perspective within Batchelder’s study offered a strong starting point in terms of the focus on the voice of the learner, and the value of the use of social media, including social networking tools, to empower and provide powerful and motivating experiences.

Social Media for Informal Learning Within the Workplace

The study of worker experiences and perceptions of social media use for informal learning within the workplace presents some different issues. Already noted is

the contrast with the formal learning context, the university, wherein the instructor directs the learner to some degree. Other issues already presented were generational impact questions, differences in incentives, tools, and different learner roles and goals. Studies that follow explored different aspects of informal learning through social media. Most research was directed towards or took place in the workplace. Some studies focused on use of social media tools such as microblogs for communication, some investigated wikis or mixed tools from the organizational point of view, some from the performance perspective, some compared environments, and some compared tools. None here focused specifically on an in depth view of the worker experience and voice. Empirical studies are still relatively hard to find; some are part of conference proceedings, some are from blogs, and some are dissertations.

Social Media Within the Workplace - Microblogging

Ebner and Schiefner discussed the need for increased support of knowledge workers as they work in companies that are becoming more global (2008). While this study was aimed at potential workplace applications, participants came from a professional group outside of any one organization. The authors suggested microblogging, a social media application, as one solution for user support. They asked whether and how these tools can help us learn and how they affect communities of practice. “Is microblogging a possibility for a specific community to exchange ideas, interests and information?” (Ebner et al., 2008, p. 156). They discussed providing support through mobile devices in an informal context (2008). While many workplaces may not distribute mobile devices, some do, and some allow workers to bring their own devices. Therefore, this perspective is relevant in terms of learning opportunities in the

workplace. The methodology used was a mixed methods case study in which participants engaged from within a pre-existing microblogging community in September 2007, using the platform Jaiku.com. There were 23 already acquainted participants (five woman and 18 men) and they were asked to join a group to focus on technologies and learning (Ebner et al., 2008). After two months, they participated in an online survey that asked about motivation, behaviors, and learning. Some questions involved who, how often, and what topics were discussed (Ebner et al., 2008). The authors also wanted to know why people microblogged and what they thought about use of this tool, especially for teaching and learning (Ebner et al., 2008).

A typical organization might have a wide range of ages; ages in this study ranged from ages 27 through 60. Over three quarters of the participants were men. Software analysis showed that users microblogged once or twice a week about conference events, work, literature, announcements, and ideas. Over 55% said it would be useful for learning and teaching, especially to send information quickly and for collaboration; 33% were not sure about the value of using the software (Ebner et al., 2008). The authors found that the most frequent motivational factors listed were: to become part of the community and to talk about work (Ebner et al., 2008). Since the participants were not actually part of a work group, it is difficult to compare with usage within a company.

This research confirmed the productive use of microblogs for specific mobile learning applications in informal environments that allow users to connect, share, reflect, and interact. The authors expected that microblogging usage would spread as mobile learning applications increased in the future. The article provided data linking user's evaluations of learning effectiveness to social connections (Ebner et al., 2008). The

study participants came from an already formed group of technology-savvy bloggers. Data was gathered via an online survey and there were no interviews, so data was limited in depth. This research provided an opportunity for more controlled research that could offer a work-based sample population and other kinds of data to explore the linkages between learning and social media. Still, there was confirmation that a majority of users valued connections, learning, and collaboration opportunities in this professional group.

For an examination of microblogging outside a company by employees within a company, Zhao and Rosson (2009) addressed the value of Twitter, a public application, for informal communication at work and the benefits of this tool use for collaboration. They explored “how and why people use Twitter” (Zhao et al., 2009, p. 243) but they did not focus on learning specifically. They focused on how users perceived the benefits of the specific microblogging tool, Twitter, as a communication device. Qualitative research involved semi-structured interviews lasting up to 60 minutes that were completed over the telephone during fall, 2008 (Zhao et al., 2009). The population was small, similar to the population for my own research, and consisted of eleven people. Job roles were varied and included different levels within the company; engineers, management, and marketing persons took part. Participation was solicited through friendships; those who agreed to participate then suggested others they knew who might be experienced in the technology. This is also known as the “snowball” method (Zhao et al., 2009, p. 245).

The focus was on questions about the current state of participants’ microblogging use and descriptions of participants’ experiences as both communicators

and receivers of messages (2009). Findings showed that people did use Twitter for real-time information from trusted sources, to gather information they needed for their jobs, and for emotional and social reasons (Zhao et al., 2009). People found it helped them reach their goals and helped in interpersonal interactions and collaborations (Zhao et al., 2009). The findings confirmed that people find value in using a microblogging application at work. Concerns expressed were about cognitive overload, privacy from one's manager and others who may be following (Zhao et al., 2009).

Zhao et al. provided a preliminary model for workplace research on social media in some respects. However, their theoretical foundation was mainly based on communication theory in which "media-richness and social presence" were examined (Zhao et al., 2009, p. 243). Regarding methodology, over-the-phone interviews were different from the current research. The authors focused on Twitter. However, Twitter is a social media tool, so this research remains very relevant. These exploratory findings suggested that there is value in research to discover more about what use of the software provides and to know more about how it can enhance informal communications.

Zhang, Qu, Cody, and Wu conducted a case study within a Fortune 500 enterprise (2010a). The social media tool used was Yammer, a common social media microblogging tool that uses newsfeeds composed of discussion threads, within the workplace. Yammer was one of the same tools used in my own study. The authors described their study as the first "systematic examination of a corporation's adoption and usage of micro-blogging tools, mainly due to the lack of empirical data" (Zhang et al., 2010a, p. 2). Zhang et al. referenced the Zhao et al. findings just described as based on a smaller sample size with eleven participants (Zhang et al., 2010a).

The Zhang et al. mixed-methods case study was conducted over a five-month period (2010a). Data was gathered from personnel information. Then authors then surveyed 160 respondents obtained from a sample of 458 participants. They reviewed 300 randomly selected postings, and conducted 18 interviews (Zhang et al., 2010a). The study indicated what software employees were using and the content of data generated. The authors referenced the Java et al. study included here and others (2010a). They analyzed messages to determine how people were using the application and building follower bases. One goal was to determine how to enable more effective knowledge-sharing capabilities and “social interaction in an organizational context” (Zhang et al., 2010a, p. 1). Businesses hope that social media applications will “empower knowledge exchange and sharing, and enrich interactions among employees” (Zhang et al., 2010a, p. 2). The Zhang et al. study confirmed some employer objectives and indicated some pressures workers may feel when introduced to the social software.

Findings indicated that using this tool, information was being exchanged, people were interacting in more than short exchanges, and people did form communities in terms of actual groups (Zhang et al., 2010a). Yammer provided a robust communication tool within the company. User characteristics did make a difference with engineering and information technology groups making up a larger percentage (Zhang et al., 2010a). Technology expertise and managerial roles led to greater participation, and the largest group of survey responses was received from those between 29 and 45 years of age (Zhang et al., 2010a). A majority of participants used Twitter outside the workplace, or were aware of the application. Finding new connections to follow to find useful content was a significant activity (for 55.3%). Connecting globally was highly valued as well

(57.7%) (Zhang et al., 2010a). The authors concluded that this relates to “social awareness theory” and other theories beyond the scope of my own research (Zhang et al., 2010a, p. 9). There were a number of significant other findings. The authors discussed a “noise-to-value“ problem. The value of multiple sources of input, as shown in the Campos Ecology of Meanings model, could be perceived as a problem but was part of the cultural environment, the authors concluded (2009). The Zhang et al. research identified some user characteristics such as technology expertise. The Zhang et al. findings were important and mostly positive with regard to social media use for knowledge sharing. Barriers were identified as well.

The Zhang et al. methods differed from this current study in a number of ways including qualitative approach and theoretical foundations (2010a). Communication theory was the main theoretical foundation to explore user interactions and information exchanges. My own study participants were drawn from populations that Zhang et al. found to be the strongest contributors, experienced and active users who are engineers and information technologists. I used a smaller sample, also from a Fortune 500 corporation, to explore experiences that relate to concepts of social constructivist learning and transactional communications, a different theoretical framework.

Zhang, Qu, and Hansen analyzed user perspectives towards adoption of microblogging in the corporate world (2010b). The research design was mixed methods, based on acceptance theory of microblogging at work and included surveys of 168 Yammer participants, interviews, analyzing posts, and reviewing metrics of use (Zhang et al., 2010b). These findings came from the same population that was used in the previous study, but with a smaller group and a different focus.

The authors examined “benefit perception,” or how individuals believed usage would have a positive impact on their performance at work, “cost perception” or what users perceived usage would require in terms of risks and time, and “social influence” or what others were doing or thinking about usage (Zhang et al., 2010b, p. 372). They matched site analytics with user posts and content. Their analysis found that all three elements influenced user behaviors. They found also that “My co-workers participate” was the overriding issue in participation; manager participation was also a very strong element in user adoption (Zhang et al., 2010b, p. 374). The finding that co-worker and manager role was so influential in the workplace confirmed observations made by others (Eraut, 2004). This study showed some of the complex factors involved in adoption of social media tools (Zhang et al., 2010b). The authors planned to study demographic impacts in the future. The authors did not focus on a learning framework. The concepts of benefits and costs, however, would certainly be a factor in use of the tools.

For a better understanding of microblogging and usage inside and outside of the work environment, Ehrlich and Shami (2010), focused on comparisons. The authors questioned what workers thought about the benefits of using the internal social software, named Blue Twit, and wanted to see how the two kinds of usages differed with messaging to different groups of people (Erlich et al., 2010). The research design, a mixed methods study, was based on an analysis of more than 5000 user posts within the company’s population (Erlich et al., 2010). Application data was collected over four months from 15 locations globally. Numbers of posts were similar, both internally, with Blue Twit, and externally, with Twitter (Erlich et al., 2010). There were 25 semi-

structured interviews conducted and recorded with individuals for whom there was also online data available.

Erlich et al. found there were different uses for microblogging inside and outside of work (2010). The most significant would seem to be that workers posted material that was different in nature internally and externally (Erlich et al., 2010). This data revealed that participants were careful about confidential content both within and outside the company (Erlich et al., 2010). Participants used the internal application to get help quickly and to give assistance to others (Erlich et al., 2010). More information was shared outside of work (Erlich et al., 2010). While Twitter use outside of the company provided quick access to news, this function was less of a factor within the company (Erlich et al., 2010). More links were posted to Twitter outside of work (26%) than to the internal application (15%) (Erlich et al., 2010). People in the work environment were more likely to have questions and answers and short interchanges with someone.

The Erlich et al. study focused on how the setting impacted use of the microblogging application but the use of two different software applications made it harder to compare. Ehrlich et al. stated requiring parallel use of both Twitter and Blue Twit might have skewed “the population towards early adopters” (2010, p. 8). This study was limited to the use of microblogging and not other social Web 2.0 tools. These findings did give a better understanding of microblogging benefits at work. People knew that they could get support faster (Erlich et al., 2010). People also went online at work to find the pulse of workplace happenings and people understood that they could develop their reputations (Erlich et al., 2010). The authors stated that there was little existing research on these social applications at work (Erlich et al., 2010). These

findings are useful in comparing how workers use the tools within a work context and what factors influence information sharing at work. The use of quantitative data and site analytics provided a different focus than the current research that investigated the worker experience.

Social Media Within the Workplace - Wiki Technology

Lee and Bonk studied perceptions of workers within the work environment in terms of collaboration using wikis as the specific tool (2010b). Wikis can be important in informal learning because wikis enable companies to capture tacit knowledge for knowledge management purposes and worker reference. This use may be especially effective for organizations to increase communications and collaboration. The authors stated that wiki use is increasing generally as part of the trend towards sharing content online using Web 2.0 tools (2010b). Some companies, such as Motorola and Nokia, have already implemented wikis to encourage collaboration (Lee et al., 2010b).

The authors conducted a survey in 2009 of 93 organizations in North America (Lee et al., 2010b). Survey questions were open-ended and dealt with applications that enable people to collaborate. Participants gave individual feedback first, later as a group, and then could ask questions. The larger survey results indicated that 40 of 93 respondents showed a desire to know more about wikis. For those interested in collaboration, wikis were the most frequent solution selected in responses. However, these were not necessarily experienced users. Most participants would need training to use the tools properly, the authors concluded (2010b). Key elements to consider as indicated by respondents were issues of “accessibility, ease of use, and security” (Lee et al., 2010b, p. 2591). For the authors, this study confirmed notions that wikis can be easy

to use for collaborating and that is how companies view them. Additional sub-topics emerged with regard to effectiveness and measurement (Lee et al., 2010b).

Lee et al. provided a baseline for further research by establishing that there is a lack of research on the topic, that there is a perceived need know more, with most users needing guidance to move forward with any implementation. This Lee et al. research provided a view of one direction to pursue to enhance collaboration in the workplace. The authors called for more research on wikis in the workplace.

Social Media Within the Workplace - Mixed Social Media

Following the review of research within academia, Ebner et al.'s (2008) findings regarding microblogging were shown to enable teaching and learning and studied use outside of the workplace. Zhao et al. (2009) studied Twitter via mixed methods within the enterprise to confirm social presence, a communications framework. Zhang, et al. (2010a) provided results from two studies showing value for building global connections and knowledge sharing in a random population within the workplace, and studying social interactions; their follow up study indicated the importance of colleague and management participation (2010b). Their work was based on discovery of user acceptance factors. Erlich et al. used mixed methods research to confirm benefits of micro-blogging to get help fast, to help others, to find the pulse of company activities, and to impact reputations (2010). The first Lee and Bonk findings indicated a strong interest in wiki use within the enterprise and an indication that more research was needed due to interest in wikis (2010b). Thus far, a positive value for social media use within the enterprise has been established based on communication and other theories.

There was also recognition of interest in implementing social media use in the enterprise for a variety of reasons.

In another study, Lee and Bonk stated that organizations were investing in social media in hopes of improving performance (2010a). Lee et al. examined concerns and possible problems from the worker's perspective as a result of the increased interest in social networking and the daily impact in workplaces (Lee et al., 2010a). The authors considered social media to include activities such as forums, blogs and other media that enable user publishing and collaboration. Workers may use the tools to search or share content, collaborate, work with partners globally, work with customers, and to increase organizational efficiency (Lee et al., 2010a). The authors cited current literature to contend that organizations were beginning to implement these tools and that usage was increasing rapidly (2010a). The authors also stated that there is little research about knowledge sharing at work; hence, the need for more research (2010a).

Lee et al. surveyed 696 people employed at corporations globally about social learning (2010a). The research questions asked were 1) whether companies are now "using social learning; 2) why they use or do not use social learning; 3) what social learning activities and tools they are using; 4) what difficulties are encountered; and 5) what are future plans..." (Lee et al., 2010a, p. 2582). Questions 3 and 4 were especially relevant to this study. The authors concluded that companies were beginning to implement social learning on a more widespread basis. Seventy-six percent of respondents said the companies in which they work either used these tools or intended to implement social learning through social media tools sometime soon (Lee et al., 2010a).

Based on these findings, one could expect that implementation of these tools will begin to impact learning and development strategies and spending in in the workplace, if they have not already. Thirty-six percent of the responses showed that companies want more research findings indicating effectiveness of social software strategies for learning (Lee et al., 2010a). Ninety-one percent of responses indicated that the main reason companies would be using social media strategies “was to provide opportunities to share knowledge and experiences of colleagues” (Lee et al., 2010a, p. 2583). Other responses were related to motivation (49%), “accelerate time to competence (46%),” reduce formal instruction (35%), and “to capture and share collaborative informal learning that occurs outside of formal learning venues” (Lee et al., 2010a, p. 2583). Findings regarding tools showed that companies do use social media for learning activities (68%) (Lee et al., 2010a). Usage of discussion boards was 62% (Lee et al., 2010a). These findings all contributed to showing worker perspectives on social learning within organizations. Clearly, companies are moving ahead and want more data about usage.

The research discussed by Lee et al. (2010a) began with a discussion of social media. Later the authors reported on social learning research and survey results and the findings showed that blogs and microblogs were a subset of the research, called “social media activities,” and rated highest at 64% (2010a). The reference was to applications like Twitter. It is easy to confuse application of these terms: social media and social learning, especially as there are few fixed definitions in use, but the unclear usage of terms was confusing.

The majority of the comments leaned toward valuing social learning (Lee et al., 2010a). The authors stated that companies must adapt to this culture change and social

learning in order to survive (2010a). This article established that there is a growing enterprise interest in the value of social learning in the workplace. The authors stated that their study also established interest from the workers' point of view (2010a). They suggested some areas of further research such as the effectiveness of social learning in training or the effectiveness of informal learning at work. The study (Lee et al., 2010a) pursued aspects of learning through the use of tools that are very similar to research that this dissertation explored. Lee et al.'s research was conducted across a variety of companies. It was a contrast to my study that focused on findings from a small sample within one corporate environment and explored the effectiveness for the participants.

DiMicco, Millen, Geyer, and Dugan focused on user motivation as they researched a social software application used within IBM (2008a). The social software works by allowing people to connect with others to share content within a virtual environment called Beehive (DiMicco et al., 2008a). The authors identified areas that they said drove behaviors. Those included: desire to move ahead in one's career, desire to gain support in terms of work tasks, and desire to share personal news (2008a, p. 2). The authors analyzed motivating factors and obstacles in the use of the social software. The DiMicco et al. study was based on a mixed methods approach with both quantitative and qualitative data; the sample included several hundred people from those first to sign up (2008a). Some of the data came from site analytics as the researchers explored what the usage rate actually was. This data enabled analysis of patterns in people's activities at the site. DiMicco et al. also conducted interviews to provide insight about motivation and behaviors (2008a).

Findings showed: strengthened ties to connections resulted in an increased sense of social capital (2008a). This, in turn, made users more concerned about doing well for the company (DiMicco et al., 2008a). This could be very significant to a company. This study provided an analysis from the perspective of communications. Workers benefitted from connecting to those far away, not just to those they already knew. DiMicco et al. also indicated one result was more access to experts (2008a). This finding supports the notion that a social enterprise tool benefits learning within a corporate environment. Recommendations were to gain more understanding of dynamics involved in developing new contacts and in supporting career goals as these factors help determine value of the implementation.

DiMicco, Millen, Geyer, Dugan, Brownholtz, and Muller, (2008b), reported similar research. In this case, the methodology was more clearly presented. The authors focused mostly on motivation as a key factor in adoption and use of social media at work. The authors used Beehive again, the company's social networking application for workers. As with Facebook, workers customized their pages and shared materials; content changed dynamically as people interacted online and changed display preferences. Content on the pages included: photos, the "buzz," profile information, lists, "ask me about" information, and more (DiMicco et al., 2008b, p. 713).

The mixed methods research included analytics of site usage such as how connections were formed, status reports were posted, number of photos uploaded and other metrics. There were seventeen semi-structured interviews. The authors asked why workers started using Beehive, whom people were contacting, what do they share, why do they share it, and what value did it provide (DiMicco et al., 2008b). Some responses

were affected by a company's governance policies. DiMicco et al. reported that there were 67% "active" users, or those who or added materials and connected to others (2008b, p. 713). Findings from all data showed that workers connected with immediate associates, but more often used the application to form connections with "weak ties" or those who were less known to them (DiMicco et al., 2008b, p. 714). They had adequate access to associates they were already working with, often through instant messaging. The new connections might have led to very important and meaningful work or personal exchanges (DiMicco et al., 2008b). These are important findings about the value of connecting with those beyond one's usual associates.

Other findings were varied. In considering benefits to the workers, the authors stated that some people were interested in furthering their careers and gaining support for work. They called the categories "caring, climbing, and campaigning" (DiMicco et al., 2008b, p. 716). Caring was the primary reason that people gave for using Beehive. Caring referred to sharing personal concerns and interests. Climbing concerned promoting one's skills and projects. Campaigning concerned using lists to write about topics, for example. Some said they shared more within the enterprise than outside of it and that privacy was actually less important there (DiMicco et al., 2008b). Since leadership was very active within the data collected, the authors stated that all levels would benefit from this kind of application (2008b). In addition, the company was able to capture content that might benefit the company. The authors argued that the enterprise must provide support for social media software given the "generational change" to come (DiMicco et al., 2008b, p. 719). This study made the case that "if these tools are not provided by the company, employees may seek social... tools outside of the

enterprise... moving critical information outside the firewall” (DiMicco et al., 2008b, p. 719). This argument was based on the view that millennials who are heavily involved in social media are going to drive changes in company practices and will expect social media use.

Based on previous research that reports on the importance of leadership and use, one question that emerges is whether Beehive usage would be different if leadership were not active. My own research focused more on perceptions of effectiveness, efficiency and other experiences in using the tools for learning, but also included perceived environmental factors such as leadership. While tools differed and motivation and benefits may differ in the current research, it is useful to compare findings within a different environment.

Boileau provided findings about knowledge workers' use of interactive applications, specifically for informal learning in a social environment (Boileau, 2011). Boileau offered a mixed-methods case study approach through which he explored worker intentions in the use of Web 2.0 applications for learning and job performance within a particular context (2011). It was written from the perspective of the Activity Theory of Engestrom, distributed cognition (2011), and performance within the organization as analyzed through the Behavior Engineering Model of Gilbert. Boileau also relied on Vygotsky's work, “The first principle embodies Vygotsky's (1978) notion that all higher order psychological functions, including learning and problem solving, emerge first on a social and interpersonal plane, and then later on an internal or intrapersonal plane” (Boileau, 2011 p. 34). He used an instrument previously validated with

slight changes (2011). This current research drew partially from the instrument used by Boileau.

In his approach, Boileau considered role perception and how that impacts worker activities. Boileau stated, “Personal perception of role has a mediating effect on the knowledge worker’s motivation to use interactive technology tools for self-directed informal learning activities...” (2011, p. 150). He found that social technology led to greater collaboration, as workers tended to adopt the technologies on their own in his study and he concluded that media tool use provided new opportunities for “self expression, communication, knowledge...” (Boileau, 2011, p 149). The current research investigated the worker’s experience and voice, including the “what,” and “how” of some of the same questions through an in-depth examination of the worker’s experience and perceptions. Some differences from this study included the methodology, a somewhat different focus, with different theoretical supports, but within a similar context, that of the knowledge worker, as she learns through digital interactions at work (2011). The current research investigated worker use, whether the worker gained knowledge, and how the worker perceived that happening.

Louis Estrada explored obstacles faced by corporate learning professionals and organizations in adoption of newer technologies or Web 2.0 tools in the workplace. Estrada noted that there was not currently research that explored obstacles to adoption within corporations. Estrada also stated there was no theoretical framework for his study. “To maintain openness to the phenomenon under investigation, the researcher did not design the study based on a theoretical framework” (Sandelowski, 2000, as cited by Estrada, 2012). This was similar to the current approach in terms of examining the

phenomenon but in the current study, there has been a connection to theory following the analysis of findings.

Estrada explored integration within an organization. He conducted interviews of a sample of 20 professionals belonging to the Association for Talent Development (ATD), formerly known as ASTD (Estrada, 2012). He clarified some of the obstacles that will be faced in many organizations and will impact workers' perceptions of how they may use the tools effectively. His findings indicated obstacles such as not recognizing the value of Web 2.0 tools for learning, lack of time, learning professionals who lack the knowledge to design the needed environments, control issues, and security concerns regarding assets. His recommendations included investment in resources to "formalize roles" to implement social media for learning, and beginning implementation in small pockets or projects (2012, p. 81). Estrada laid solid groundwork for steps that an organization can take to implement social media for the learning professional community. His focus on doing so was context; this is a key aspect of a learning strategy.

Literature Review Findings

This study suggested a theoretical framework. Within this framework, the active worker, as a self-directed learner, reaches out (through tools) to connect and learn on-the-job or to support other learners, and to interact with a supportive, ever-present online community. The framework was synthesized from works of the researchers and practitioners listed below:

- Social constructivist philosophy
- The self-directed learner of Knowles (1975)

- The Zone of Proximal Development of Vygotsky (1978)
- Campos' Ecology of Meanings communication theory (2007)
- Bruner's concept of scaffolding (1976)
- Brown, Duguid and Collins' situated learning (1989)
- Lave and Wenger's concept of legitimate peripheral participation (1991)

By examining the literature on social media use and informal learning, various findings have emerged. Some studies, conducted within academia, were supported by the same or similar theories as those researched here. While findings are difficult to compare, these past studies often relied on social constructivist learning theory, based on the concept of the learner who communicates using the social media technologies that enable connections to others. In the Java et al. study about user intentions on Twitter, a social network, results indicated that information was being shared. Other users gathered around the information providers, resulting in a large aggregation of followers (2007). Much of the literature from university settings established that users shared information within the respective software applications. Participants often found the tools served to enable communications and interactions.

Using microblogging and social software (Dunlap et al., 2010, 2011; Ebner et al., 2010; Batchelder, 2010) and using wiki technologies (Weaver et al., 2010; Hazari et al., 2009), researchers found support for self-directed learning, informal learning, and collaboration. They concluded that students liked using these technologies and succeeded to varying degrees. In some studies on wiki use, (Weaver et al., 2010; Dunlap et al., 2010), students needed support or scaffolding to guide them into more collaborative activities. The students in Batchelder's study gained more confidence and

experienced personal growth. These studies tended to rely on theoretical ties to social constructivist theory or Knowles' principles of adult learning theory in which learners are self-directed.

Two other studies confirmed that social media use resulted in greater engagement. In one, participants were able to learn more about the tools (Williams et al., 2009), and another study confirmed that social media would be helpful in an educational setting. (Tasir et al., 2011). Several studies concluded that universities must consider other software that offers students more interactive learning environments in which they have more control (Tasir et al., 2011). The chart below summarizes findings.

Table 1.

Overview: Literature on Social Media Use for Learning Outside of Work

Findings	Supporting research
Learning or information sharing: According to several mixed methods studies within ongoing university courses, students did learn new skills and gain knowledge.	Ebner et al., 2010; Hazari et al., 2009; Tasir et al., 2011; Chuang et al., 2009
Experience self-direction: Did not always develop but was needed for effectiveness of some social media tools. Batchelder's purposeful sample of students was already strongly motivated and experienced self-direction.	Dunlap et al., 2009; Batchelder, 2011
User characteristics: Technology experience was helpful in gaining adoption in some cases. Net generation preferences were identified in one case. Gender differences were reported differently in several studies. Other conclusions about characteristics varied.	Williams et al., 2009; Hazari et al., 2009
Control: Students appreciated having control over their learning environments. It was recommended that instructors learn to let them have that control. A change is needed to enable student-centered learning.	Tasir et al., 2011; Williams et al., 2009; Hazari et al., 2009
Engagement: Most students within a certain age group (net generation) enjoyed using social technologies and found them engaging.	Williams et al., 2009; Tasir et al., 2011;
Communication: People wanted to communicate, especially with those they know; users shared information, news, and links. Findings indicate the importance of social connections,	Java et al., 2007; Ebner et al., 2010; Hazari et al., 2009;

and that there is a sharing of information within online social communities.	Chuang et al., 2010;
Support within a learning community, enculturation: Students needed support generally from instructors, for motivation and to provide scaffolding that enabled participation	Weaver et al., 2010
Collaboration: Confirmed the value of collaboration in wiki use where students were motivated. Some preferred working by themselves; this led to less collaboration. Wiki use can promote collaboration; students can build on knowledge.	Weaver et al., 2010; Hazari, 2009
Interactions: Having increased opportunities to interact with others was almost all positive.	Hazari et al., 2009; Tasir et al., 2011
Supports participatory learning, notion of collective intelligence.	Hazari et al., 2009
Information overload: Amount of content can be overwhelming.	Java et al., 2007; Dunlap et al., 2009
Addictive: Participants enjoy and may want to stay engaged in activities (definition from Chou & Ting, 2003; as cited in Williams et al., 2009)	Williams et al., 2009; Dunlap et al., 2009

The literature reviewed from academia provides evidence of benefits of social media use for informal learning within a formal setting. Instructors included participation as part of course work in some cases. Students preferred having more control in learning environments, and indicated there was value in enhanced collaboration and interactions through social media. Almost all studies took place as part of university research efforts. All but one study used mixed methods or surveys alone. Findings showed that social media can enable informal learning as part of a class assignment and can enable information sharing in the public space.

The findings from research within the workplace were different from findings outside of the workplace. In the workplace, social media technologies can provide opportunities for informal learning in an environment geared towards performance of work tasks, with different incentives, and often without formal guidance. The incentives to succeed and the consequences for failure are different in the workplace. Research was

gathered from populations at multiple companies in several instances. Most studies were not focused on learning, but on communication theory. Other studies focused on user motivation and user acceptance, and some were not based on theory at all (Zhang et al., 2010; Estrada, 2012). Social media tools used enabled many people to experience a sense of connectedness and enabled relations globally (Zhao et al., 2009). In the Ebner et al. study, participants expressed a desire to become part of a community (2008). The DiMicco et al. studies concluded that using the social media tools increased one's weak ties and increased a sense of social and company connectedness (2008a). Zhang et al. found that workers made global connections, forming communities, and experienced informal learning through the use of social media tools (2010a). The Zhao et al. study took an organizational communication perspective on the use of Twitter to indicate that people experienced increased interactions and collaboration (2009). Lee et al. indicated that companies have an interest in collaboration, via wikis and other social media tools (2010a). They also addressed the concept of the self-directed learner, reporting that such tools could reduce the need for formal instruction, and help capture knowledge (2010a).

Studies raised concerns about: role, tools, time available, security concerns, lack of support for and valuing of knowledge sharing, privacy issues, noise impact and overload (Zhang et al., 2010a; Boileau, 2011; Estrada, 2012). Environmental factors had an impact: Zhang et al. found that colleague participation influenced adoption (2010b). In the Lee et al. wiki study, respondents appreciated accessibility, ease of use, and security features when within an intranet (2010b). Boileau focused on informal learning and confirmed that workers valued interactive technology especially where this

technology was already in use (2011). He identified mediators such as role perception and environmental factors, concluding that social technology led to more collaboration.

Social media use within the corporate workplace has been shown to enable information sharing, collaboration, greater access to help, social connections and support for career advancement or projects. The workplace studies reviewed were most often linked to communication theory and most did not address concepts of learning support or scaffolding within an environment in which problems are situated. The chart below summarizes some of the literature findings in the workplace.

Table 2.

Overview: Literature on Social Media Use for Learning in the Workplace

Findings	Supporting research
Information sharing: According to mixed methods studies, some limited sharing of information, companies want more sharing to take place, some groups were used to sharing, and had trusted sources.	Erlich et al., 2010 Lee et al., 2010a, 2010b; Zhang, et al., 2010a, 2010b; Zhao et al., 2009; Boileau, 2011;
Experience self-direction. Motivation was studied most often.	Lee et al., 2010a
User characteristics: user characteristics and technology expertise made a difference, no connection with age. Experience has an impact.	Zhang et al., 2010a
Engagement: People shared news, could use space for personal and work sharing. Resulted in “more willingness to contribute to the company...” (p. 2)	DiMicco et al., 2008a, p. 2; 2008b
Communication: Experience improved communications, built connections and ties, valued connectedness globally, an informal channel to communicate	Ebner et al., 2008; DiMicco et al., 2008a, 2008b; Zhang et al., 2010a, 2010b; Erlich et al., 2010
Support was provided within a learning community	Ebner et al., 2008, Zhang et al., 2010a
Collaboration: Enabled collaboration, located trusted sources, use led to more collaboration	Zhao et al., 2009; Boileau, 2011 Zhang, et al., 2010a;

	Lee et al., 2010b
Interactions: participants used tools to engage in interactions. Helped build relationships.	Zhao et al., 2009; Zhang, et al., 2010a, Lee et al., 2010a; Boileau, 2011
Information overload: The amount of content can be overwhelming.	Zhao et al., 2009
Obstacles to use of tools: not recognizing value, learning professionals lack expertise, control concerns, resources needed, need to guard information.	Estrada, 2012; Zhang, et al., 2010b
Noise was a problem: address by finding people to follow.	Erlich et al., 2010; Zhang et al., 2010a

Summary

Past research has shown that social media use can enable informal learning. In the university environment, students have experienced growth, self-directed learning, informal learning, and collaboration using social media as part of class programs. Students received support from instructors that facilitated participation. In the corporate workplace, workers using social media experienced information sharing, collaboration, greater access to help, and enhanced communications. Past workplace research most often investigated motivation and communication uses. Studies varied greatly. Using a phenomenological approach, this study investigated worker perceptions of context and role, and experiences of informal learning using social media within a single corporate environment. This approach called for epoche in which I suspended presuppositions based on the reviewed theory. This study extends the current research by focusing on perception, and voice of active participants who provided and modeled practices of social media use within a corporate environment. It is hoped that these findings will assist learning professionals and learning leaders in understanding and developing more effective learning solutions and environments for the corporate setting.

CHAPTER 3

Methodology

This chapter of the study includes a description of the research design and methodology as well as a specific description of the research methods. It includes the (a) introduction to the methodology, (b) the research design, (c) the research sample, (d) the data sources, (e) methods of data collection, and (f) data analysis. The purpose of this study was to examine factors in worker use and perception of social media that lead to successful informal learning outcomes in the workplace.

The research questions that guided this study are:

1. What are characteristics of effective, active users of social media for informal learning?
2. How does worker perception of role at work impact use of social media?
3. How does worker perception of the workplace impact social media use for informal learning?
4. How does the worker experience use of social media tools for informal learning?

This research design incorporated a qualitative approach to conduct a phenomenological exploration of worker use of social media tools for informal learning in the corporate workplace. According to Merriam, “A phenomenological study seeks understanding about the essence and underlying structure of the phenomenon” (2009, p. 23). A phenomenological approach enables us to hear the voice of the learner, without a limiting imposition of additional constructs of our own or from the workplace. “Phenomenology is about saying ‘No!’ to the meaning system bequeathed to us”

(Crotty, 1997, p. 82). Cilesz says the phenomenological approach is appropriate for technology research (2007). She states, “Thus it is phenomenology that is uniquely suited to building a research agenda on experiences with technology...” (Cilesiz, 2010, p. 7). Investigating and using technology is so much a part of learner’s lives currently that this approach is consistent with the appropriate application of phenomenology (Cilesz, 2010). There are few studies that investigate “the learner voice” as an important perspective in learning environments in the corporate context through social media (Sharpe, Benfield, Lessner, & DiCicco, 2005, p. 3).

This phenomenological research approach acknowledges that the learners are engaged in social experiences. It is “not only a beginning rooted in immediate social experience but also a methodology that requires a return to that experience at many points along the way...” (Crotty, 1998, p. 85). The research is also supported by Vygotsky’s constructivist approach that states, “knowledge can be given by a ‘social other,’” (Pass, 2004, p. 17). We view the workers’ learning and experiences as “part of a social exchange process” in which they use social tools with others (Rudestam & Newton, 2007, p. 35).

Qualitative data was collected from knowledge workers. This research design incorporated data from: survey materials of responding individuals, interviews with selected participants, participant logs of attitudes, activities, and reflections in using social media tools, and my own log.

The impetus for this inquiry may be “a problem that the researcher seeks to illuminate or answer, which is personally meaningful in terms of understanding the relationship between oneself and the world” (Rudestam et al., 2007, p. 40). In this case,

learning on the job is very meaningful to me. Use of social media tools to broaden shared learning experiences is simply an affordance of the digital opportunities we now have. Organizations are moving to adopt social media for informal learning (Lee et al., 2010a). “Informal learning has become as important as formal learning today” (Bersin, 2008, p. 34). This study adds to a conversation that could impact how others learn at work and what strategies organizations and learning professionals implement.

Research Design

The research design was based primarily on a qualitative approach using a phenomenological methodology. The findings were obtained through the use of surveys, interviews, and logs. Some of the questions were drawn from Boileau’s dissertation instruments (2011) and also from typical phenomenological questions as suggested by Moustakas such as “how did the experience affect you” and “what thoughts stood out for you” (1994, p. 116). The survey used for the study provided information about worker demographics, information about job experience, technology experience, social media experiences and perceptions, and included several open-ended questions that required reflection. During the study and following the survey, the selected participants received an orientation, participated in an initial interview, logged their online social media experiences, including any reflections they wished to add, and participated in a final interview. I have provided an additional source of qualitative data by keeping a log of activities, observations, and reflections.

Research Sample

The study sample was obtained after receiving approval to conduct the research from a top Fortune 500 global manufacturing company in North America that

participates in internal social media use. I was a registered Yammer user at the company during the study period. Upon approval of the participating organization and with all other required faculty research permissions completed and Institutional Review Board approval (Appendix A), I contacted active Yammer participants at the selected corporation by email to determine interest in participation in the study. The emails I sent, part of Phase 1 of the study (Appendix B) suggested that those with interest email me and they would receive an email with a Research Information Sheet (Appendix C) and a link to an online questionnaire. Those who responded received an email and then clicked on a link to open the questionnaire. At the beginning of the questionnaire was a checkbox that participants checked to indicate their consent (Appendix E). I initially sent out sixty-one emails to people from two different organizations within the company. I received thirteen responses indicating interest and nine of these people took the survey. I sent out follow up email reminders to the people who had indicated interest but not yet taken the survey, and also requested participation from an additional nineteen people. Five more people responded, coming to a total of 80 individuals that received emails about the study and fourteen respondents who took the survey.

Polkinghorne states, “Participants... can provide substantial contributions to filling out the structure and character of the experience under investigation” (2005, p. 139). He adds, “Because the goal... is enriching the understanding of an experience, it needs to select fertile exemplars of the experience of the study” (2005, p. 140). The survey contained demographic questions; job, technology and social media experience questions; and some open-ended questions.

Criteria for the sample were:

- Participants had been at the company for at least six months in a knowledge worker role that required computer competence in order to do one's job. This assured a baseline level of exposure to the company standards, culture, and level of technical competence.
- Technology experience indicated by questionnaire responses showing participation in any internal company rankings or position signifying digital expertise within the company.
- Social media experience outside of work consisted of experience using Facebook, LinkedIn, Twitter, or another well-recognized social media application several times each month, preferably several times a week or more.
- Exemplary experience included weekly use of social media opportunities within the company as an observer, or preferably as someone who contributed. In some cases, individuals may not have used social media very much outside of work, but still used it extensively at work. This was the overriding factor.
- Participants also indicated they valued use of social media tools for functions such as learning, collaborating, or sharing with others.

I accepted questionnaire responses that indicated active social media participation, technology expertise, and valuing of experiences through social media. The questionnaire responses indicated that I had obtained a "convenience sample," or a sample that was not random, but was based on the study criteria, and it consisted of

fourteen participants, a number within the range I had been seeking (Rudestam et al., 2007, p.90). I contacted people by email to inform them of their status as participants, to thank them, to convey the next steps, and to schedule meetings.

All participants chose to complete the study. One participant was removed following a final interview that indicated a lack of social media participation. In a qualitative study such as this, based on a phenomenological methodology, a population of less than ten participants “might be appropriate for a relatively long period of time (at least 2 hours)” and would still provide a meaningful sample for an exploratory study (Rudestam et al., 2007, p. 107). The final number of participants was thirteen. This study required approximately four to four and one half hours from those who completed all the research components during a four to ten week period. The span of time for completion depended in part on time it took to acquire the sample and on participant schedules. As thanks for time spent and participation, immediately after the second interview, those who completed the study received a thumb drive and biscotti, in compliance with company policy.

Data Sources

Research data in this phenomenological study came from the participants themselves as they answered questions and reflected upon their experiences in using social media tools to learn outside of the classroom setting. “Phenomenological researchers generally prepare some questions in advance, preferring to alter them if it seems appropriate as the interview progresses” (Rudestam et al., 2007, p. 109). Typical questions might include: “What aspects of the experience stand out for you? How has the experience affected you? What changes have you made... since the experience” in

question (Rudestam, 20007, p. 110). Data sources were participant questionnaires, logs, and interviews. I created participant log forms that were emailed back to me. My journal was another data source for observations and reflections. Recording my own reflections and understandings helped me allow the participants' reflections and activities to emerge freely during this research (Crotty, 1998).

Data Collection

Data collection methods consisted of an initial questionnaire (Appendix F) to screen participants to identify the purposeful sample. Demographics gathered are included in the findings as part of participant characteristics and throughout other areas; information included as part of question 1 is job experience, technology experience, and information on social media experience and several open-ended questions. This survey was created online in SharePoint within the company intranet as required.

Participants taking part in the second phase of the study accepted the meeting time or proposed an alternate time in response to a follow-up email (Appendix D) to schedule the orientation on procedures (Appendix G) and the first interview. At the orientation, I brought a second Research Information Sheet (Appendix E) with required information on the balance of the research, per IRB requirement, and reviewed the required activities: 1) participants would keep logs to record online social media activities and reflections for a two week period (Appendix H), 2) there would be one interview immediately following the orientation (Appendix I), and 3) one interview as a follow up to the logging period (Appendix J).

Data from all sources contributed to this study: 1) Initial questionnaires 2) participant logs during the two week period 3) two participant interviews and 4) a log

that I kept of activities and reflections (Appendix K). I also attempted to bracket my own experiences and recorded my views on social media use in this research in My Epoche (Appendix L). The combined participant data and my own data were used to provide confirmation that the research process and data were adequate, appropriate, and dependable (Rudestam et al., 2007). During the interviews, it was important to listen to participants describe their experiences anew. “Researchers need to be persistent in their judgments that the data presents the perspectives of the participants. The trustworthiness of the data depends on the integrity and honesty of the research” (Polkinghorne, 2005, p. 144).

Data Analysis

Qualitative research investigates complex life experiences (Polkinghorne, 2005). Data from multiple sources contributed to the study. Qualitative information included data from a survey, participant logs and two interviews that were coded and sorted into categories of responses based on criteria and analytic reflection, and my own log.

The phenomenological approach, in particular, is “...subjectivist in approach (in the sense of being in search of people’s subjective experience)...” although one focuses on describing what is concrete (Crotty, 1998, p. 83; Finlay, 2012). I used a phenomenological reduction method, capturing statements of participants that seemed relevant to the experience, considered them as all having the same value and worked to eliminate statements that overlapped. I developed “meaning units” that included themes that emerged from statements (Creswell, 2013, p. 193). I included “textural descriptions” of “what” participants said happened, described verbatim (Creswell, 2013, p. 193). I wrote about the “how,” describing how the experience took place, including

the structure or context of the experience of the phenomenon (Creswell, 2013, p. 194). I combined these two kinds of descriptions using imaginative variation, to provide knowledge of the essences, or textures combined with structures of meanings (Creswell, 2013).

In this study, the phenomenological approach meant that I began this research by examining my own perspectives on social media use for learning within the corporate environment (Appendix L). This was an ongoing process throughout the research. I bracketed or set aside my attitudes and assumptions, so that “consciousness itself becomes heightened” in the course of doing further research (Merriam, 2009, p. 25). Wertz describes this in Husserl’s terms as “the natural attitude” or “the first epoche” (Husserl, 1939, pp. 148-150, as cited in Wertz, 2005, p. 168). As stated previously, “epoche” refers to abstention (Wertz, 2005). The next or second epoche involved focusing on the participants’ perceptions, experiences, and descriptions. Analysis allowed me to access the lived accounts of the subject through understandings from my own experience; this is the phenomenological reduction (Wertz, 2005).

I used an imaginative variation technique to help organize and analyze qualitative data. “One starts with a concrete example of the phenomenon of which one wishes to grasp the essence and imaginatively varies it in every possible way in order to distinguish essential features from those that are accidental or incidental” (Wertz, 2005, p. 168). “In an advanced stage of the analysis, the researcher may deliberately abandon the epoche and interrogate the situation in view of previously posited concepts and theories...” (Wertz, 2005, p.172). Some phenomenological research strives to find important themes that emerge (Finlay, 2012). That is a goal of this research. Data from

my own logs was sorted similarly to triangulate with other data and provide an additional source of information for a dependable study on participant perceptions.

Table 3.

Research Methodology Summary

Table 3 Data Collection and Analysis			
Questions	Data Source	Collection Method	Analysis Method
1. What are characteristics of effective, active users of social media for informal learning at work?	<ul style="list-style-type: none"> Knowledge workers responding to request for participants Researcher 	<ul style="list-style-type: none"> Surveys Interviews Researcher field notes and logs 	<ul style="list-style-type: none"> Purposeful sample, select for profiles of active social media users Creswell (2013) based on Moustakas (1994) Merge textural and structural data using imaginative variation Triangulate data
2. How does worker perception of role at work impact use of social media?	<ul style="list-style-type: none"> Thirteen participants Researcher 	<ul style="list-style-type: none"> Surveys Interviews Participant logs Researcher field notes and logs 	<ul style="list-style-type: none"> Creswell (2013) based on Moustakas (1994) Merge textural and structural data using imaginative variation Triangulate data
3. How does worker perception of the workplace impact social media use for informal learning?	<ul style="list-style-type: none"> Thirteen participants Researcher 	<ul style="list-style-type: none"> Surveys Interviews Participant logs Researcher field notes and logs 	<ul style="list-style-type: none"> Creswell (2013) based on Moustakas (1994) Merge textural and structural data using imaginative variation Triangulate data
4. How does the worker experience use of social media tools for informal learning?	<ul style="list-style-type: none"> Thirteen participants Researcher 	<ul style="list-style-type: none"> Interviews Participant logs Researcher field notes and logs 	<ul style="list-style-type: none"> Creswell (2013) based on Moustakas (1994) Merge textural and structural data using imaginative variation Triangulate data

Summary

The methodology chapter focused on descriptions of how I gathered data from the participants and the research situation. The phenomenological research approach, using qualitative data, provided an appropriate vehicle to hear what the workers, embedded within an authentic work environment and interacting online, had to say about their use of social media at work. The research “emerges as an exploration, via personal experiences, of prevailing cultural understandings” (Crotty, 1998, p. 83). The research design called for a criterion-based sample, approximately ten to twenty or even less in total as identified through an initial survey. Thirteen participants were included. The survey, logs, and interviews were combined to help analyze and hear the workers’ thoughts, insights, and voices. Together, these led to the unfolding of additional knowledge to contribute to learning practices and knowledge in the field.

CHAPTER 4

Findings

This chapter includes the study purpose statement, a description of the data collection and analysis processes, findings presented in relation to the research questions, and a summary.

Study Purpose

The purpose of this study was to examine factors in worker use and perception of social media that lead to successful informal learning outcomes in the workplace.

This study was guided by the following research questions:

1. What are characteristics of effective, active users of social media for informal learning?
2. How does worker perception of role at work impact use of social media?
3. How does worker perception of the workplace impact social media use for informal learning?
4. How does the worker experience use of social media tools for informal learning?

Some interview and survey questions were derived from validated instruments used by Boileau (2011) and through the use of typical phenomenological questions such as: “what thoughts stood out for you,” how did the experience compare with your previous experience, and what surprised you? (Moustakas, 1994, p. 116). These open-ended questions “facilitate full disclosure of the ...experience of the phenomenon” (Moustakas, 1994, p. 116). Validated questions were used primarily in the first interview, and more experiential questions were asked with regard to the participant’s

social media use, after logging, in the second interview. All questions contributed to a more complete description of the worker's experiences with social media technologies for informal learning. See Interview Questions (Appendix I).

Data Collection

The study sample was obtained after receiving approval to conduct research from a top Fortune 500 global manufacturing company in North America that participates in internal social media use. I was a registered Yammer user at the Company during the study period. Upon approval of the participating organization and with all other required research permissions and approvals completed, on January 29, 2014, I contacted active Yammer participants at the corporation by email to determine interest in participation in the study. I initially sent out sixty-one emails to employees from two different organizations within the company. I received 13 responses from employees indicating interest and nine of these people took the survey. I sent out follow up email reminders to the people who had indicated interest but not yet taken the survey and obtained three more participants, bringing the total to 12 Phase 1 survey participants. I requested participation from an additional nineteen employees who showed Yammer activity. Two more people responded, coming to a total of 80 individuals that received emails about the study and a total of 14 respondents who took the survey, three from Product Development (PD) and 11 from Information Technology (IT). Several of the respondents were professional acquaintances.

The emails I sent, part of Phase 1 (Appendix B), stated that those interested email me back to receive an email with a Research Information Sheet (Appendix C) attached and a link to an online questionnaire. Those who received the second email

clicked on a link to the questionnaire. The beginning of the questionnaire included a checkbox to indicate consent. The survey contained demographic questions; job, technology and social media experience questions; and some open-ended questions. There were twenty-six survey questions (Appendix E), and space provided for any additional comments. The questionnaire responses indicated that I had successfully obtained a “convenience sample” (Rudestam et al., 2007, p. 90).

Data Analysis

Interviews were conducted from February 18, 2014 through April 7, 2014. Data was collected by April 7. The orientation and interviews were conducted face-to-face within private conference rooms or areas at the workplace. Data from multiple sources contributed to the study. Qualitative information included data from a survey, participant logs and two interviews that were coded and sorted into categories of responses based on criteria and analytic reflection, and my own log (Appendix J).

The social technologies included for use within this study were those available at the company that enabled knowledge sharing, communications, and collaboration on a many-to-many basis. The software use monitored included Yammer, a microblogging application that was available company-wide, similar to Twitter, but that allowed longer posts than 140 characters. It included SharePoint software that provides team sites; forums; and MySites, which are personal sites for content aggregation, people search, expertise posting, blogs, wikis, and newsfeeds. It also included Microsoft OneNote, an application that enables document sharing and searches of content similar to Google Docs. Microsoft Lync, an instant messaging application, was omitted because it was not

used in this study for communications to at least three people in a single use, an element of this study's definition of social media use.

For this qualitative study using phenomenological methodology, I wrote about my own description of experiences I have had with social media and recorded those in My Epoche as prescribed by Creswell (2013) (Appendix L). I captured participant statements that seemed important to the phenomenon; I horizontalized or listed them for each participant (from 23 to 61 statements for each participant) and omitted those that seemed nonessential (Moustakas, 1994). I then grouped statements into “meaning units” that included 24 themes that emerged from statements (Creswell, 2013, p. 193). I wrote “textural descriptions” of “what” participants said were their perceptions verbatim (Creswell, 2013, p. 193). I wrote about “how” the experience occurred, that is the structure or context of the experience of the phenomenon (Creswell, 2013, p. 194). The structural description included the fact that participants were workers within a global manufacturing company in North America.

Finally, I combined the textural and structural descriptions using imaginative variation to provide knowledge of structures combined with textures to arrive at essences (Creswell, 2013). Findings include my own integration of the “how” and the “what” into descriptions of the experiences, including themes. Findings follow.

Research Question 1: What are characteristics of effective, active users of social media for informal learning at work?

To determine user characteristics, the study included some Phase 1 survey data along with interview data. Participant names in this manuscript are pseudonyms to protect anonymity. Information from interviews was related to the themes of leadership,

motivation and self-direction. The study included demographics such as gender, age ranges, education, technology experience, organizational membership, and job duties and titles. The participant gender ratio was almost even, with seven males and six females. Gender usage was not explored. Eleven of thirteen of participants were 36 years of age or older. The largest group consisted of ages from 46 to 55 years old. Two participants were 35 years of age or younger. Youth was not a factor in the behaviors of this population.

Table 4.

<i>Demographics: Age Ranges</i>					
	25 years or less	26 – 35 years	36 – 45 years	46 – 55 years	56 – 65 years
Number of participants	1	1	4	7	0

Education

Survey data indicated that the participants were well educated; all had college degrees. Six said they had college degrees, four had master's degrees, and three had PhD degrees. Education levels were one indicator that participants had expertise in their respective fields.

Experience at the Company

Ten of thirteen participants had been at the company at least six years. The mean years working at the company was just over 13 years. Participants were functioning in knowledge worker roles including engineering, software development, or information technology training or support services of varying kinds. Two participants were managers or supervisors. Eight participants had moved to different jobs within the

company in the last two years; they were experienced within the company context but still needed to learn how to perform their newest jobs.

Table 5.

<i>Years at the Company</i>					
	1 - 5 years	6 – 10 years	11 – 15 years	16 – 20 years	More than 20 years
Number of participants	3	1	4	3	2

Organizational Participation

Within the study, three participants were from the Product Development (PD) organization and ten from Information Technology (IT). This imbalance was because more people from IT showed enough activity in Yammer to fit my criteria. The organizational mix of the study reflected qualified applicants who responded to participation requests.

Table 6.

Themes Question 1

Question	Worker characteristics: Themes
Question 1. What are characteristics of effective, active users of social media for informal learning?	Technology skills and interest Motivation and self-direction Leaders Helping others learn

Participants Interests, Skills and Abilities

Participants indicated an interest in social media and technology. Survey data indicated participants had confidence in their own technology skills and abilities. Inside the company, ten of thirteen participants “strongly agreed” they had the necessary skills

to use social media at work, two moderately agreed, and one somewhat agreed. All participants belonged to Yammer groups. No participants were new to technology use and many had been involved with it for a long time. In interviews, participants added information. One participant, Jessica, said, “I’ve been doing this for as long as I can remember. ...This has always been the way I am. Tools are finally catching up to the way I like to work” (I14J, 533-534). Another participant said about social media, “I had an interest in these tools, you know, before I started using them internally... in my world, I use them as well” (I15S, 111-113). Seven participants alluded to themselves as early adopters of tools that had been available previously. Victor stated, “... I’m an early adopter of technology and tools. ...I go and buy the first generation of nearly anything. I ...investigate it. It’s... why I became a developer in the first place” (I25V, 211, 213-214). One participant was introduced to Yammer at work within the last several years but was technically savvy and appreciated the benefits right away.

Table 7.

<i>Having the Knowledge Necessary to Use Social Media at Work</i>					
	Strongly agree	Moderately agree	Some what agree	Moderately disagree	Strongly disagree
Number of participants	10	2	1	0	0

Besides confirmation of technology interest and expertise, the following characteristics emerged from participant interviews and participant logs and were triangulated with my log. There were 24 themes that emerged from participant

statements in total. Statements are embedded in the combined textural-structural synthesis that follows, reflecting the meaning of participant experiences and perceptions.

Self-Directed and Motivated Learners

Participants are seekers of information and have no hesitation in relying on themselves to find information. When asked how they acquire their skills and expertise, six of them said they might first ask colleagues or friends, depending on content, and secondly search or try trial and error to figure out a problem. Six participants stated they would learn by searching and reading first. One participant named Yammer first, given appropriateness of content. Participants seemed to develop the resources to find what they needed to know based on circumstances. When any of the participants needed to learn something, they indicated they used social media when it seemed to work best for them; it appeared to be just another resource and they were in charge of when they used it. Alex stated, “I would say that I'm kind of self-motivated in that way. ...I just am willing to go out and hunt for it and sometimes the social media is a very convenient place to go and sometimes it's not” (I3A, 71-74). Participants appeared resistant to actions based on others' perceptions. As Tom stated:

That's just my personality. I'm going to get the answer because I need to get the answer and I don't care how someone thinks I'm getting the answer or what someone thinks about the tools I am using to get the answer. But that's just me (I5T, 118-120).

Leading the Way

Participants valued leadership in sharing knowledge online, without it being a job requirement. Nine participants alluded to leadership on knowledge sharing. Charles

said, “I tend to think one of the things I try to do is sort of lead or show by example” (I17C, 219-220). Another participant said, “So I teach people how to collaborate by example. ...It works a little better than forcing people to do something” (I21M, 275-276). Another participant, Lynda commented:

If I lead the way, I see other people comment. I remember... a person was asking is Yammer only for ...employees? So the post was there for a day and nobody answered. ...I said, Yeah, it's for all ... employees. And then, I came back in an hour and I saw ...eight people are looking at this post and have answered eight different answers. I'm like, wow, okay (I11L, 220-224).

Helping Others Learn and Contributing to Knowledge

Eight of the participants talked about teaching others and sharing knowledge. There appeared to be a level of passion and commitment to learning. They felt strongly about this. Jessica said: “I always wanted to teach. Anything I have ever learned how to do, after I learned how to do something well, I always end up teaching people how to do it” (I14J, 13-15). Lynda said: “Part of ...my personality is trying to find ways to help people, even if it wasn't directly what I am doing right now. I don't think this should ever change. You know, trying to help people” (I11L, 282-284). One of the reasons they want to help others learn is, as they indicated, they like to learn. Matt said, “I think a big part is I like to learn” (I21M, 496). Social media offers the opportunity to contribute and learn. Sandy said, “I get to connect and learn with others. It's not so much learning as they are teaching me in a structured way” (I15S, 378-379).

Findings for research Question 1 regarding participant characteristics indicated participants have strong technology skills, interests, and abilities as a foundation in their

work. They are educated, are experienced within the company, and almost all used social media both in and out of work. Gender or age was not a factor. Participants are also self-directed and they chose to engage in social media for a variety of reasons, or they chose to have jobs involved in social media use, and they preferred to lead in use of the social technologies and learning. They like to learn, care about helping others learn, and enjoy contributing to knowledge within the company. These combined characteristics play a key role in their successful use of social media for learning and mediated other factors.

Research Question 2. How does worker perception of role at work impact use of social media for informal learning?

Table 8.

Themes Question 2

Question	Perception of role: Themes
Question 2. How does worker perception of role at work impact use of social media for informal learning?	Related to job role or coaching Other incentives: socializing Other incentives: recognition Other incentives: influence

Participant Experiences Differ

Findings were from survey questions indicating job roles, technology certifications within the company, and other job-related questions on the survey, in addition to interviews and logs. Participant experiences differed and participant job roles differed. Some participants' jobs included use or support of applications described in this study. Within the company, there is an ongoing program, the Digital Tool Learning

Program (DTLP). The program provides online and face-to-face learning events and content, coaching, and mentoring for employees to learn how to use digital tools. The program includes learning events that are scheduled, along with the posting of informal learning material accessible to employees online. Learner participation in the program is voluntary within some company organizations, and mandated in others.

Some study participants had roles as coaches within this DTL Program or they provided other services related to IT or SharePoint, a Microsoft content management system used on a company-wide basis. Of thirteen participants, ten participants supported or provided services to support information technology tools or practices, including social media, either as part of their jobs or due to their voluntary coaching roles in the company's Digital Tool Learning Program. These ten participants said they monitor or interact with others on at least some of the applications included in this study, as part of their jobs or as DTLP coaches. Three other participants did not have active roles in IT digital tool support and were not active as coaches in the DTLP. Of those, one had enrolled in the program as a learner. These participants' roles at the company did not require social media use to perform their jobs.

Table 9.

<i>Job Role in support of IT or DTLP Coach Support</i>			
	No formal role in IT tool support and not enrolled as DTLP participant or coach	No formal role in IT tool support but DTLP participant	Formal role in IT connected to tools or IT practices or coach in DTLP
Number of participants	2	1	10

Perception of Job Role and Social Media Use

Different job roles require different kinds and levels of participation in social media at the company and result in different experiences. All participants in this study indicated they were involved in social media participation and believed in the benefits for learning. Participants gravitated towards technology use in their jobs in some way. Ellen said, “I was wondering how much is my personality and my comfort versus how much is literally the job ...I'm not sure I can disaggregate those” (I10E, 189-191).

Seven participants who had jobs that supported social media use or practices or who were coaches in the digital tool program received positive supervisor feedback about these activities. "He encourages it," said Ray (personal communication, February, 2014). Three participants who did not have a job formally requiring activity in social media as part of their job objectives said they used it anyway when there was time. These three participants did not receive supervisor recognition for improving job performance through social media use even when that could be shown to save the company time or money. Tom described one interaction with a supervisor in the following way, “...I said, ...you can thank Yammer for allowing me to fix the problem which you just presented to me fifteen minutes ago... But it didn't matter,” Tom added (I5T, 110-112). Tom continued to use Yammer because he strongly believed it contributed to effective job performance.

Three others who coached in the DTLP, or were associated with an IT role, indicated lack of management support or lack of management awareness regarding their social media participation as well. Denise said, “He just hasn't gotten into it” (personal communication, February, 2014). Affiliation with either Product Development or

Information Technology did not appear to make a difference in this group. SharePoint forum participation was not viewed in the same negative way as Yammer participation. Participants in this study still felt using social media, including Yammer, was a useful way to learn or contribute and persisted in these activities. Matt described his approach, “If I have enough time to do my current job... and if I need something specific... I’ll make the time to go out and get that information” (I21M, 96-98). However, time and opportunity to contribute to social media were usually less if it was not perceived as part of one’s job duties and approved. Therefore, participation was usually less. Charles explained:

I point it to culture... my formal role is to support my boss and my immediate customers and sharing it [knowledge] more widely, so that there's more potential value, just doesn't seem to be valued or more particularly rewarded... As it's not really explicit on my objectives, ...it's one of the first things to fall off the plate when things get busy (I17C, 359-362; I18C, 256-257).

Perception of Role Through Social Media Use

Beyond job roles, social media enabled other kinds of roles and incentives. It was perceived to present opportunities to connect and socialize, and to enable a sense of belonging. In terms of socializing, twelve participants indicated they liked to browse to see what was going on in the community space. Alex expressed his sense of isolation. Alex said, “I don't like the building that I sit in. It's basically a large box full of other small boxes and there's not a lot of physical collaborative activity... So I think that does encourage, ...electronic socializing.” (I3A95-100) For Alex, Yammer became a place to meet. He said that during the two week logging period, “There were a couple of times

when I was able to answer someone else's questions, but it [social media] was mostly ...the water cooler ...for me” (I4A, 23-24).

Receiving and giving thanks and recognition were other reasons to participate. This was true whether social media support was or was not part of one’s job. Alex said,

I don't know if my coworkers, if many of them would think it was of value... but I know that there is information that we need to share... ... there is a great deal of value and appreciation for when we share that sort of information (I3A, 161-162, 166-167).

Eleven participants logged about giving and getting “likes” from others in Yammer. They thought that feedback mattered and they believed it mattered to others. Eight participants indicated that reputation and recognition in social media spaces were important. Sometimes the virtual space was the only place participants felt they would get recognition for their contributions. Ray noted, “In a digital world, I can kind of act important” (I1R, 375).

Having a reputation as someone who is helpful appeared to provide both intrinsic and extrinsic benefits. Matt said, "I like to be known as somebody that provides value to others. That's what drives me” (I21M, 293-294). Tom said:

Social media enables me to expand my circle of contacts, and gives me ready access to a broader information base... I guess it kind of increases my stature. That's probably the wrong word, but within the community ...I become the "go to" guy (I5T, 84-87).

Social media also provides unique opportunities to build influence and lead. Four participants indicated that building influence or leading digitally could be more effective for them in the virtual world than in the face-to-face world. Charles said:

So it does seem to be ...an amplifier, very powerful tool that where others, ... are much more facile in the physical space with groups, I can have the same sort of influence and provide leadership without having those particular characteristics or traits (I17C, 435-438).

Research Question 2 findings regarding how worker perceptions of role at work impact use of social media indicated: there were a number of factors that mediated worker perceptions and use for informal learning. When social media use was part of a job role or supported an approved coaching role, that role impacted use positively. There was supervisor approval and there were fewer or no obstacles to use.

When social media use was not part of job role or approved coaching role, and participants did not receive positive supervisor support, participants chose to use it for other reasons. These reasons were in addition to those reflecting personal characteristics, (e.g., sense of purpose and self-direction, leading the way in sharing, desire to help and to learn). Other elements that interacted with worker perceptions of role at work included social media roles through which the worker perceived intrinsic and extrinsic incentives (e.g., building influence, achieving recognition, and socializing). In these cases, benefits from use of social media offset lack of other support. However, lack of time was more often a limiting factor.

Research Question 3. How does worker perception of the workplace impact social media use for informal learning?

This question concerned perceived environmental factors. It involved the context within which use of social media for learning takes place.

Table 10.

Themes Question 3.

Question	Environmental factors: Themes
Question 3. How does worker perception of the workplace impact social media use for informal learning?	Management and colleague attitudes Lack of management use Lack of time Tool problems Policies Trusted content Noise Overload

Attitudes About Social Media Use

Almost every participant indicated an awareness that social media use within the company was not generally valued. Walt said, “So the general attitude I don't think is enthusiastic adoption. It's sort of reluctant adoption or negligence or neglect” (I7W, 164-166). Many of these references were to Yammer use. SharePoint use was not perceived in the same way as Yammer use. Participants were aware of how others at work might perceive Yammer postings, whether the postings added value to the company, and how perceptions of use impacted perceptions of job performance. Posts could be visible to one's manager and to a global audience within the company, if those people registered and visited Yammer or received notifications. When asked about the environment and social media use, ten participants talked about others' perceptions that if one was using

Yammer, one was not performing one's job. Even those who had roles that involved social media use and recognition for their own social media participation were aware that support was not universal and was a factor in limiting adoption within the company.

Sandy stated:

I think a lot of people within the culture... have a mindset of how am I looked at if I am out there contributing on these tools. Will people think that I am doing my job? ...I'm still going to contribute to Yammer because it's part of my ...role. But ...I've heard it. That mindset is there throughout the company (I15S, 162-164, 170-171).

Yammer was often seen as similar to Facebook, as just for staying in touch with friends. The name "Yammer" or look and feel of the application could contribute to that misperception. Seven participants alluded to people bringing perceptions of social media use outside the company to their perceptions of use inside the company. Ray said, "One of the guys asked me something and I'm like just put it on Yammer. He goes... what? Oh yeah, that... Facebook that you told us about?" (I1R, 276-277)

Eleven participants indicated they thought that most in management did not have supportive attitudes towards social media use at work. Over half of participants stated management attitudes affect social media use in the workplace. Seven participants who used social media as part of their job roles indicated supportive attitudes from their own managers regarding social media use at work, so some managers did support social media use. Ellen commented in the survey that her manager welcomed social media use and especially OneNote use (personal communication, February, 2014). Pat said, "I think because of the nature of the work that I do, I'm encouraged to use it" (I19P, 165).

Matt noted that his supervisor supported his use of social media (personal communication, February, 2014). When part of one's job role, social media activities could also contribute to achievement of employee objectives identified in performance reviews.

Six participants without support from management for social media use reported that managers often viewed using Yammer as wasting time, said management wanted to control messaging and didn't approve of it, or managers might not be aware of social media such as Yammer at all. These participants were not dissuaded from social media use. This factor was more likely to make participation more difficult, as reflected in the following statement from Tom:

If I weren't such a contrarian, then perhaps it would bother me more, ...or perhaps it would dissuade me... but social media is, if not frowned upon, it's at least dismissed as a toy or a time waster by a lot of people (I5T, 94-96).

Negative attitudes about Yammer use were viewed as affecting employees that participants worked with in the company. According to Tom, "I mean that's an attitude of their supervisor, right, so they're not going to cross him. They're going to try to align themselves with their supervisor. That's the way the world works" (I5T, 125-127).

Two participants commented on management desire to maintain control. "This tendency to keep things private and secret and not sharing" is part of the culture, according to Charles (I17C, 264-265).

Management Use Of Social Media

Eleven people alluded to wanting management to see the value of social media use and take more active roles in encouraging use. Alex said: "It would be nice if [a top-

level executive] was a regular, made regular appearances because I think we would have a better sense that the leadership was keeping tabs on what we were talking about" (I3A, 264-265). When asked if their own supervisors frequently used social media for job related tasks, six agreed, six said no, and one person was neutral. In general, most other managers appeared not to engage in using social media for work. Victor said, "You don't see them on the social media tools that we have. There's only a few that are fairly active, but I kind of get the feeling that they don't quite understand the value" (I25V, 267-269). Walt said many managers he works with communicate via telephone or email in the workplace. This affected the social media use of others around them. Another participant, Jessica, felt that more leadership understanding would benefit the company:

They [upper management] have to see the value in it. And they might not see value for themselves, personally. But they have to recognize that there is value to the rest of the company and be willing to support the rest of the company using those tools (I14J, 449-450).

There were several reasons most participants felt leadership has a key role to play. In the corporate enterprise, workers believe they can't lead on this issue. Lynda said, "It's just that if it doesn't come from upper management, it's never happening. So upper management needs to reflect on that. It can't go from low to high, it has to be high to low" (I12L, 260-262). Leadership actions can help bring others along, according to Tom, "Heck if the boss is using it ...I guess I need to participate. Now it becomes something useful. ...Leadership that way would help" (I6T, 168-170). If leadership did model social media use at work, these leaders would be more accessible and would hear about relevant issues, according to two participants.

Beyond role modeling behaviors, managers should give more guidance. Five participants expressed concern with this. Matt pointed out the dilemma, “Should I use Yammer or should I use a SharePoint discussion? What's the corporate strategy? There are just too many options ...so I'm not going to use any of them” (I22M, 470-471, 474-475). Management should encourage social media adoption with incentives, said Charles: “Reward and recognition for providing that value for a culture of learning, a culture of learning and sharing, which we don't have” (I17C, 374-376).

Lack of Time

Twelve participants identified or alluded to time as an issue in social media use. Participants indicated they lack extra time yet they regard social media tools as overall time savers. Participants expressed frustration that co-workers say they don't have time to participate in social media. This was a constant theme. Others could save substantial time. Tom stated, “...They don't feel that they have the time to stop and learn something new that's going to save them 80% of the time that they are now spending” (I6T, 158-160). Denise indicated, “Something like Yammer is very easy to use ... they say they don't have time to learn a new tool. But, once you really learn it, how much time can it save you?” (I23D, 177-180) It does take time to learn at first, but use of digital tools is a core skill in the business world. According to Lynda:

People need to stop saying I'm busy. ...And if you don't have time, you have to make the time. Because if we don't all progress in finding ways to make this company go forward, then it's not going to go forward. ...A lot of opportunity, I would say, to change the ways people think (I11L, 495-501).

Company Policies

Company policies were named as a barrier to sharing information via social media use. Policies to restrict sharing of confidential and secret information were accepted and the importance was understood, but made Yammer less useful because of limitations on posts. No video, images, or files could be shared directly in Yammer; a user was limited to posting only links. Victor commented, “They tend to want to lock things down here... we could kind of see that with Yammer” (I25V, 269-270). The impact of policies seemed even greater in SharePoint where controlled access impacted use of team sites, blogs, wikis, and people’s personal MySites. Ellen said, “So the security thing on MySites is a huge bar. ...There's no good way around it right now. I understand the constraint but it's just never going to take hold. ...The incentive isn't there to encourage use” (I9E, 313-314, 317-318).

Effectiveness and Awareness of Tools

Reference to tools as a theme in this study referred to perceived lack of awareness and effectiveness of the software tools to get specific tasks done. Ten participants complained about tool ineffectiveness for finding information or expertise and said that tool shortcomings impact usability. About half of the participants complained about internal company search functions; they couldn’t find what they needed to know. Focusing on social media included in the study, at least three participants complained about Yammer search but still used it. Jessica said, "I don’t like Yammer search. It’s just not very user friendly. I can’t exclude certain things. I can’t force it to put two words together and search for that very easily... I get more stuff that’s irrelevant" (I14J, 345-349).

SharePoint users offered mixed sentiments, too. Some problems were that, according to Walt, "...metadata and search are two areas where platforms are lacking... Ratings is really cumbersome and hardly anybody uses it" (I7W, 349, 355-356). Charles stated, "I think the MySites and probably the entire SharePoint suite suffers from poor usability" (I18C, 230-231). Lack of tool integration was also a complaint, and five participants mentioned it. Yet, some participants still found SharePoint offered value for working with others. Participants felt SharePoint offers a secure place in which to keep and track all project content. Matt said, "I don't think I'd ever do a project without a SharePoint site" (I21M, 261-262). One can control access, set up forums, wikis, and blogs. Other participants had additional suggestions. Walt said, "A proper video sharing platform like YouTube or Vimeo ...would be nice ...among the technical professionals, ...if they get excited about a tool or a technology, then there's the opportunity for shifts of attitude and transformation of culture" (II7W, 377-379, 399-401).

Participants made other observations. According to Alex. "Most of my coworkers don't use internal social media, like I would say 90%... some of them know and don't think it adds value and some of them don't even know" (I3A, 38-42). Lynda offered, "I think it's the people who are using the tools. They need to understand how they use the tools" (I11L, 450-451). Awareness of the tools and understanding use of the tools appeared to be two components to increase adoption. Participants maintained people need to know the tools well enough to use them appropriately, even if the tools are not optimal. Sandy summed it up, "And so we don't have an integrated platform but I think we do and we can utilize the tools that we have" (I15S, 195-196). Even those

participants who complained about the tools saw themselves as continuing to engage productively with the tools that they had.

Other Environmental Factors

Other factors that participants felt impacted social media use included whether content was credible and worthy of trust, “noise” in Yammer postings, and information overload. Most participants developed strategies to reduce the impact of these concerns.

Trusted Content

The theme of trusted content in this study refers to participants' expectations of accuracy of content, especially on Yammer. Two participants said they trust information within the company more than information they find outside the company since, internally, one's reputation and job can be at stake if posted content is not accurate. Developing relationships with specific people, joining groups, or following sources one had come to trust were strategies that were used. Pat said “If I find value ...I am more apt when that person posts something again, to click what they have posted because I have already seen there's something in there that's connected me to it” (I19P, 319-322). Two participants note they sometimes corrected inaccurate information. On Yammer, Victor directed questions to other information sources within the company for what he considered more reliable information.

Noise as Part of Social Media Use

“Noise,” in this study, refers to whatever participants perceived of as distractions during their social media experiences. Several participants complained about Yammer conversations that bothered them in the all-company feed (where people could post to the entire company). Tom said, “It's just controversial topics or subjects that people like

to throw out there just to stir the pot... I don't even have time to debate them... So social media for me at work is functional and purpose based” (I6T, 77-79). Tom limited most Yammer activities to interest groups. Tom stated, “Because there's just so much non value added stuff in that all-company feed for me. I just have a feed from my interest groups and the people that I follow” (I6T, 42-45). Ray said, “There is added noise factor... Like you ask one question and all of a sudden you get five people to give you the obvious responses. Like, no, no, no, no. That's not it” (I1R, 410-412). Again, the strategy was to join specific interest groups, or to receive notifications of postings just from those groups. Focus on the most important conversations.

Praises were commonly given in Yammer by DTLP coaches as workers attained higher levels in the program. Study participants perceived these praises differently. Two participants said praises contributed to the noise factor and they indicated they were annoyed by the practice. Defenders of this practice thought that recognizing people in Yammer made people feel motivated. Seven participants mentioned that praising others was appreciated and helped build enthusiasm. Lynda said, “This was the way that we wanted to reward them. ...It's just a praise on a social media. But, hey, you're getting recognized in front of all the company” (I11L, 238-240). Sandy stated, “That builds employee motivation... there are some people that love it. ...So when someone actually helps them out, they're going out and praising them as well” (I15S, 413, 424-426). This incentive was ongoing as part of the DTLP strategy during the study period.

Information Overload

Information overload in this context refers to 1) the perception of the person receiving information that it is hard to cognitively process so much information, and 2)

the perception of overload from too much information coming particularly through email, especially as a result of social media notifications. This sense of overload from too much email coming to one's inbox or too much information in general could cause people to turn away from social media within the company. Denise said, "I struggle with how to get people to see the value of it, because it does have a little bit of extra work. When it gets pushed to my email every time someone posts, it's too much email" (I23D, 109-111). It was important to set up notifications and alerts properly in Yammer or SharePoint and determine what groups you wished to join or what people you wished to follow on Yammer to avoid this kind of overload. Eight participants alluded to notifications they had set up in a certain way or simply turned off entirely in Yammer to avoid overload. Lynda commented,

People complain... I'm getting so many emails about the posts. Well, ...You can change the settings... This is one of the things that most annoys me... I went to the settings and chose to not get notifications... If you are a person that doesn't feel that you need to go to Yammer every day, just set the correct notifications (I11L, 103-106,108-111).

In response to his experiences, Matt commented: "We're at the point where there's so much information out there, ...there's an information overload. ...The next evolution... is how do you get the right information to the person who needs it at the right time?" (I21M, 507-510) There appeared to be an awareness among participants that they must manage information efficiently and effectively.

Findings for research Question 3, how worker perceptions of the workplace impact social media use for informal learning, indicated that all participants perceived at

least some of the environmental factors identified here as mediating use of social media at the company. Management and coworker attitudes indicating non-valuing of social media use, lack of sufficient leadership participation or guidance, lack of time to participate, restrictive company usage policies, lack of tool awareness and effectiveness, noise, and overload problems were perceived as constraints to use within the company. Findings indicated trusted content, noise and overload were lesser concerns for these participants; they found effective strategies for social media use. Whether social media use was part of job or not, this meant knowing how to set up application notifications and alerts to avoid overload, or knowing which groups and participants to connect with to reduce noise and to find or contribute content for their various roles.

Participants would have liked more leadership participation and guidance about use. They also believed that lack of tool awareness meant that other employees wouldn't take time to realize the value of social media for themselves and the company. These factors constrained adoption by others more than by these active users.

Research Question 4. What is the worker experience in using social media for informal learning?

Table 11.

Themes Question 4.

Question	Reduced to 4 main themes	8 Themes emerged
Question 4. What is the worker experience in using social media for informal learning?	Connecting and communicating Efficient and effective learning on the job Collaborating with others Building a learning community	Communication Global connections Building relationships Learning Efficient Effective Collaboration Community

This question concerns worker experiences in using the tools. Participant logs indicated that Yammer was the application most used for informal learning opportunities in this participant group. Yammer use was logged 287 times by a total of 13 participants over the ten day logging period. All participants used Yammer for learning and sharing knowledge or for communications. Ten participants used Yammer more than any other tools. SharePoint MySites, forums and sites were used 66 times during the ten day logging period. OneNote was used 29 times. Two participants used SharePoint more than Yammer. One participant used OneNote more than Yammer. One participant logged SharePoint wiki use three times. Lync instant messaging was usually used on a one-to-one basis and that usage is not included here. Participants explained that, for them, the tools used depended on task, resources, and time.

Table 12.

<i>Aggregated Social Media Use Logged Over Two Week Periods</i>				
	OneNote	SharePoint Wikis	SharePoint MySites, Forums, and Sites	Yammer
Logged usage by 13 participants	29	3	66	287

Interview findings for this question provided detailed descriptions of what participants valued, experienced, and how they used social media tools. I combined thirteen perspectives to arrive at a textural-structural synthesis reflecting the meaning of participant lived experiences and perceptions.

Participant Descriptions of Social Media Use

Every participant used Yammer during this study. Four participants who used Yammer indicated that they opened it up first thing in the morning, and kept a Yammer window open on their computer screens during the day so they could monitor activities. Sandy said, “I skim Yammer first thing in the morning, and it’s open for me throughout the whole entire day. I would rather have Yammer open than my email, to be honest” (I15S, 146-148). Since half of the participants were observed carrying their laptops to interviews during the study period, Yammer and other social media in this study were likely always available to these participants in the workplace. Two participants mentioned that they set up a new browser tab so that Yammer would automatically open when the browser opened. When Yammer was open, users saw new posts through numbers in the user’s Yammer inbox on the screen. Notifications of new postings in conversations that involved the user also came through email notifications if allowed in their user settings.

Theme 1: Connecting and Communicating

Connecting and communicating with others through social media was an emerging theme. All participants belonged to Yammer groups. When participants did participate in social media, they often engaged in different Yammer groups such as a SharePoint group, a OneNote group, or a variety of community of practice groups. Some participants only visited interest groups or got notifications from interest groups and never visited the main company feed because they had already identified what they considered their best resources. Participants saw if there were new posts through the interface. Reasons stated for browsing were to be “social” and to find out what was

going on in the company. Twelve participants indicated they used Yammer to browse for news or look around in the company space to see what was happening. Pat said, "It's just a very handy way to get your finger on the pulse of what people are thinking" (I19P, 125-126). When participants got very busy with meetings, travelled, or worked from home, Yammer use dropped. Participants often engaged in Yammer during cancelled meetings, when drinking a cup of coffee and waiting for their computers to finish processing a file, or between other tasks. Ray described his process.

This is what I do, I have Yammer open and it's minimized. Every time I get the computer to do something I need to wait for a little bit, I just slide the mouse and see if there are any new posts. If it's flagged that there are some new posts, then I go and click and see what is new (I1R, 32-35).

Twelve participants indicated that using social media offered opportunities to broaden cultural understandings or build relationships globally. Sandy said, "It allows me to build my network... not just like sharing out knowledge, but I am able to find out about other areas of the business, not just... where I work, but able to connect with others" (I15S, 131-134). Pat said, "When we work in a company that's global, in a company that we have people in different buildings ...it's another way to connect" (I19P, 178-180). Building relationships online made it easier to work together throughout the company. Sandy explained, "The other thing that I really like about it is, especially with a global company, ...we don't need to be awake at the same time" (L15S, 119-120). Matt reflected: "Even if I didn't respond to anything, but reading what some of the issues some people were having... There was definitely a connectedness type of feeling there" (I22M, 84-85).

Four people spoke about communicating on social media as a source of comfort during the day. Ray said, “You can rant and ...now all of a sudden you can see the thread of thirty people. It's like... you're not crazy. I have the same problem” (I1R, 57-58).

Theme 2: Learning Efficiently and Effectively On The Job

Informal learning through social media emerged as a main theme and it was a key use of social media in this study. All participants used the social applications 1) to provide or find efficient, effective support, 2) as resources for specific kinds of learning needs, 3) to interact with others for deeper knowledge, 4) to search, 5) to capture information, or 6) to hear new ideas. All participants provided scaffolding for others by answering questions, correcting misinformation, or they received support by posting about their own problems occurring during the day. Tom was pleased to have this resource, “I can just go over to the Yammer group or if I'm stuck on a SharePoint question, I now know who to ask. Either in Yammer, or privately, too” (I6T, 200-202). Lynda said, "This is general knowledge that probably will affect my job because we're in a world that we have to know about technology" (I11L, 175-176).

Efficient and effective support: The problem solving support helped people become more efficient and effective according to comments of over half the participants. Participants might be working along during the day and find that they needed to know one thing. Sandy said, “To solve a problem, I would use Yammer” (I15S, 264). If so, they could open up Yammer and ask for help. Jessica explained: “I can do this much but this one little piece, ...if there is somebody I can just go ping on Yammer to figure out how to make it happen, I get an answer ...now I can move forward” (I13J, 15-17).

Others also commented on a sense that via social media one could find help quickly. Referring to Yammer, Ray said, “It just makes the whole, my work process, my work stream more efficient” (I1R, 112-113). Sandy explained, “That's... people at your fingertips that you can ask a question of. When you put in a help desk ticket, or if you called the help desk ticket, you're asking one person” (I15S, 233-235). Whether it was about information and expertise or software support, there was a shared feeling that eventually someone would respond. Others could see that you needed help, especially in Yammer, because of the real-time company audience. Tom said, “I need help, and then someone who can give you that help can come over and help you. Normally you can't get that visibility with any other application” (I6T, 257-258). In addition, when there are solutions, because you share knowledge globally, benefits are increased. Tom explained:

In the past it would have only benefited my little department. But now, because of social media, it's gotten out to a much wider range of people. So every time that happens, it saves... money and lets people free up some time so they can be creative about their job... It's a multiplier (I6T, 294-298).

Tools for support: Participants found or provided support in different ways using the tools. Support usually was available through Yammer but could also happen through other software tools such as SharePoint. Nine participants indicated they use SharePoint for more than file storage functions, including to conduct forums or build wikis. The company offered workers their own SharePoint sites called MySite. Pat said she used her MySite to find experts and to build word clouds with items she had tagged. She explained, “...there's an “Ask Me About” section, ...so I would place my expertise

there... It is a way for people to understand what to contact you for” (I19P, 272-273, 280-281). Sandy said, of a specific SharePoint site:

If I ever need someone, I know I can go out... and find who there is a subject matter expert. And right from that site, I can click on their name and send them email or send them an instant message... And that's how I can get help. It's very important... (I15S, 87-90).

One SharePoint forum that was mentioned by four participants was considered very successful and had a very large user base. Walt remarked, “...we usually direct questions to the discussion forums. They are monitored by multiple SMEs” (I7W, 223-224). SharePoint had features that helped participants even though there were access limitations and usability problems. Victor said,

Some of the other stand-outs are there are some really good pockets of people, both individuals and departments, that are taking advantage of SharePoint and doing really great jobs of sharing information and providing content. And then there are some really poor examples... maybe it's just the fact that we're still growing and that the tools are relatively new (I25V, 420-424).

Interacting with others: Social media offered value through new interactions. Matt thought it was more than information he wanted at times, “And that's where the biggest bang for the buck is... it's not the knowledge. It's the conversations that happen around the knowledge. That's what makes the community so powerful” (I22M34-36). Charles indicated that even though the conversation might not take place publicly, you could start with social media to help you find the right person. He described this process:

I don't find what I'm looking for in the more formal sources. Even if it's a book or online documentation, ...when I run into an issue, I need an SME to help me out... Having an easier way to identify those SMEs would be... one of the big uses I get out of Yammer (I17C, 353-356).

Social media search: Participants found value in searching aggregated content in all of the researched applications. One concern identified was that Yammer search was not integrated with SharePoint search. Participants stated they found experts or content through Yammer search by typing in a topic or a person's name in the search box at the top of the screen. Search in Yammer was perceived to be flawed but effective, according to three participants. All participants said they find information in different ways, depending on what's needed. Pat described her approach:

If I have a question on how to do something... if it's something on my computer, if I'm not able to locate what I need, I would probably look to Yammer to find that information. ...The other thing that I could also do in Yammer ...is ...search on my question or a related topic to see if there is already a thread on it (I19P, 202-208).

Capturing information: Participants contributed to content aggregation. Social media is structured in such a way that the more people who use it, the more the value increases for searching because of the collective knowledge that is captured. Charles explained, "What I find, though, is ...that Yammer search and our tagging is sufficient... somebody's already run into this issue and ...provided some guidance" (I17C, 24-27). In other applications as well, participants can tag documents to help

others find information. The potential gains were that answers would be captured for others if tags were added.

New ideas: Being active on Yammer or on an effective SharePoint discussion forum also offered participants the opportunity to be exposed to new experiences and ideas. Six participants commented that they discovered things that they would not otherwise have heard and broadened their understandings. Pat had a name for this, "...I think the aspect of serendipitous discovery. That's a term we use... quite frequently where you were doing one thing and unexpectedly you discovered something else that was really, really, good for you or valuable" (I19P, 448-450). Lynda said, "Yammer, when people ask questions, I learn from these questions... So it opens up... issues that were there that I might not have known of" (I11L, 157-160). Participants are aware of this benefit. Sandy said, "What helps me learn is not only being able to share it, but getting other people's perspective and... thoughts around a topic that I might not have thought of until they go out and contribute." (I15S, 116-119) These perspectives might lead to new insights. Matt said, "The biggest part is, and this is for informal learning... using the collective knowledge that's out there to guide you to the right place, or spark a thought" (I21M, 443-444). Matt felt:

One person says something... it triggers something in you, and ...you see a different insight... Now, all of a sudden you have more knowledge or wisdom... So if I do interact with that person, they can start sharing... their wisdom with me versus just information. ...That's why it's that valuable (I21M, 482-489).

Learning effectively and efficiently through social media, a key theme and study focus, has been described as offering timely accessibility, efficient problem solving with

support of a global knowledge base on the job, different tool options in the search for knowledge and expertise, the possibility of learning through interactions and not just content, and the potential to discover new knowledge and perspectives that positively impact performance. Participant relied on the tools to provide and to find this support.

Theme 3: Social Media for Collaboration with Others

The ability to collaborate emerged as a theme and the tools were enablers although uses differed. In a global environment, people needed to learn and work together across different time zones. The tools varied. As Ray stated about Yammer, “It's the greatest thing for a global company to have. It's like all people in one place, they collaborate on pretty much everything” (I2R, 173-174). Yammer could help you identify people with whom you might work well. Charles commented, “I tend to think of myself as highly collaborative... what I find is those folks who engage in the use of social tools tend to be of that nature” (I17C, 202-204).

SharePoint was often used for collaborative activities, according to nine participants. Some interactions were focused on document creation. Denise said, “Some of it's working on documents with others, ... but being able to have that out on the site and if they wanted to go in and make the change themselves... So, it is collaborative. I like collaborative” (I24D, 74-79). There was a new awareness that accompanied the changes in the tools and their use. Matt stated, “It's social, it's never been called that before. It's been called collaboration, usually” (I22M, 167-168). Jessica said, “In SharePoint ...there's also a wiki out there ...It's not just the broadcast medium, it's a participative collaborative environment” (I13J, 95-97).

OneNote offered a highly collaborative solution for participants to share information, according to seven participants. When participants had meetings, they often started a OneNote notebook. This way they could work together on meeting minutes, “to do” lists, or processes at the beginning of a project. OneNote could be set up on a SharePoint location and access controlled to maintain security. As participants changed positions within the company, those familiar with OneNote and especially DTLP coaches, were introducing it to new colleagues and the practice was growing. Three participants found that the OneNote application lacked structure. Seven other participants who talked about it didn’t feel that way. Lynda said: “OneNote is ...the way for me to stay connected, stay in touch, and learn all the new tools that they have” (I11L, 317-318). Pat said:

I do like OneNote quite a bit. It's flexible. There's the formatting... can be cumbersome ... it's got a lot of self-governing mechanisms built in that make it really easy for collaboration. ...I see the social aspects of this and the learning (I19P, 507-511).

Theme 4: Social Media for Building a Community of Learners

Learning in the community: The nature of the learning experience through the different tools was different for different people. Seven participants felt that what happens online was mostly people helping other people. Three participants felt more strongly; those individuals said that mentoring was taking place. Pat said, “My experience has been some informal mentoring” (I20P, 229). Matt explained: “What I'm really trying to do is mentor... But it's not really seen as that... when you really think about it there are mentoring relationships... You're building those” (I22M, 302-305).

Two other participants thought many kinds of learning could take place in social media. Jessica commented about the essence of the experience for her: “I think it can be anything to anybody, depending on what their needs are” (I14J, 497-498).

Building the community: The majority of participants voiced their desire to grow the community of learners and expressed hope for the future. Eight participants alluded to hope that management would take a more active role in encouraging social media participation, Almost everyone expressed a desire for more information to be shared. Jessica said, “I don't think enough people see the value of what that community interaction really provides... I think if we got more people to come in, those tools would be more valuable to everybody, including me” (I13J, 188-191). Nine participants said they want more people to be part of Yammer to add to richer conversations. Alex mentioned wanting more people to join at three different times during two interviews: “It would be nice if there were more employees from varied backgrounds active on some of the social media like Yammer because that would broaden it's usefulness and make it a deeper source for information. That stands out to me” (I3A, 230-232). Pat noted:

Everyone is impacted when people don't share that because it stops us all from growing... tools like social media... just sort of form a very organic, instead of from the top down, ...it's still driven from leadership but you've got this whole other layer now in the middle, this organic layer where it's more of a democracy... You can't stop it (I19P, 393-399).

Developing the skills and interest: Participants made suggestions about how to help get people more interested and how to develop the skills needed to use the social media tools. Ellen suggested finding someone to help you learn: “Find a buddy who's

very comfortable with the tool to give you two or three top tips...” (I10E, 251) Charles said, “Social media at work or in the outside world, jump in... I think maybe here inside of work there's a little bit of hesitation... but it's still very rapidly evolving” (I18C, 312-313, 318-320). You have to show people how social communities for learning or forums can help them with their own problems. Denise said: “Until they really see that personal value to them, it’s hard for them to engage. It’s showing real-world examples, which is how we got the one guy using OneNote. He got a demo ...and he started applying it” (I24D, 209-211).

Changes over time: There are other aspects to building a learning community. The population is changing as some people retire and new people are hired. More knowledge sharing may come as people with more social tool expertise are hired over time. Charles explained, “I am encouraged that... we're hiring new people who are... more familiar and facile with these tools... I'm hoping that those experienced can be leveraged... It will make social and informal learning a bigger part of our culture” (I17C, 405-408). Charles does not expect more participation to happen quickly. Charles added, “I guess... the learning curve, adoption curve, the struggle to build community... seems to take some time” (I17C, 418-421). Sandy noted the way people make transitions: “I just think that it's... just a culture shift from email into using some of these tools” (I15S, 190-191). More than expertise is involved in social media use. Social media use and knowledge sharing at work will have to become ingrained in work practices within a more accepting environment. Just as social media tools were not yet integrated across software applications, neither was the use of social media for problem solving and knowledge sharing embedded in people’s work lives. Denise commented:

It's not integrated in our lives and I think it's just the way we have always worked... a slow cultural change still. It's slowly that more people... will be there, and they'll see it, and then when there's just a few who aren't there and they're realizing that they're missing something, that's when they'll get onboard. You know? But there's just not enough critical mass still (I24D, 245-248).

Participants were hopeful that more could be done to build learning communities. There were a range of ideas about how to accomplish this. In part, this would require changing ingrained habits and welcoming those with more technology skills into the company to accomplish this cultural change.

Logging Activities

Participants were asked to keep logs for ten workdays within a two-week period. They were emailed two Excel pages for logging. On the first page, they were instructed to log each time they used a social media application. The form contained a drop down list of internal applications (Appendix H) and an area to add "other," indicating the date, what application they used, the purpose of what they were doing, what that use helped them accomplish, and any lessons learned. On a second page of the log, they were to reflect on the day's social media activities and add any other thoughts about those activities. Participants were asked to email their logs to me at the end of each workday.

There was wide variation in how participants kept their logs. Often people forgot, or said they were too busy. Some people tracked only postings, some tracked browsing and posting, although they were asked to log both. Logs were completed by the second interview. Participants discussed their social media use and reflections after the logging during interview two.

Awareness of use: Participant reflections and interviews revealed wide variation in responses. One shared response was: 12 of 13 people said they gained an awareness of how they were using social media that they had not had prior to that time. The main theme that emerged from these reflections about logging was that reflection led to greater awareness. Responses to this awareness differed. Participants most often expressed surprise at their logging records. Five participants said they used social media about as much as they expected. Four people said they had used social media more than expected; one of the four said he used it more as a study participant. Four people said they had used social media less than expected. A few people said they didn't always notice when they used it; it was just habit. As a result, they didn't always log. One person said he recorded much less than used. Jessica described the experience of using social media less than expected, according to her logging notes:

You know, I found that I wasn't going into it nearly as much as I thought I was ... But I don't know how much of that is the fact that it just sits there and I'm kind of watching out of the corner of my eye ... And there were some days ... that my schedule and the work load ... didn't allow me to keep that up...It's usually up almost all day. (I14J, 397, 401-409)

Attitudes about future actions: Participants had a variety of reactions when asked if their behaviors in using social media would change. Three participants did not indicate that any behaviors would change. Most often, participants said they would try to change their behaviors. Three participants said they would try to post their own answers less and direct questions to the community more. Tom described the experience:

Yeah, instead of just being, 'oh there's a question I have to go answer.' It's like, I'll just pause and take a break and give somebody else a chance. I think it's good for the broader community, too, right. Hopefully you can bring more people in... It's that competitive thing ...I've got to get there first. I'm learning to focus that energy elsewhere. (I6T, 121-123)

Two participants said nothing had changed, but then went on to describe something about their behaviors that would change. These participants seemed to become more aware of their own reflections while they were speaking about their experiences.

A total of nine participants said they would try to participate more or differently than previously in using social media. They felt motivated to try to implement additional knowledge sharing and learning behaviors. During the second interview, one participant became aware that instead of using email or even OneNote to answer questions, it would be more useful to post on Yammer for others to benefit. Jessica said: "Your column about 'what would you do differently' has made me start to think... Maybe I should more regularly respond in such a way that teaches people how to go get their own information" (I14J, 367-370). Lynda said:

I just kind of feel I have a responsibility to make people more interested in it...I did feel it before but now I feel it more since I did the logging. ...Every one of us has ...knowledge. You need to share this. (I12L, 74-78)

Other comments were about the impact of time as a limitation on social media use during the logging period and lack of time constrained the ability to log. Each participant logged during an agreed upon two week period. Ray noted that social media

use and which applications were used could differ depending on the time periods and tasks. The table below indicates some changes participants said they would make regarding social media use.

Table 13.

Summary of Logging to Indicate Use and Attitude Changes

Participant	Used more, less, or same as expected	Behavior changes: none	Behavior changes: Will try to answer less	Behavior changes: Will try to do more to help others
Ray	More	Said no change or didn't suggest a difference		
Alex	Same	Said no change or didn't suggest a difference		
Tom	More		Will post less on Yammer. Will try to let others answer first	
Walt	Same	Said no change or didn't suggest a difference		
Ellen	Same			Paying more attention to how to leverage and use more productively, will lead on OneNote in job
Lynda	Less			Will try to do more on Yammer
Jessica	Less		Will post on Yammer less. Let others answer more	Will introduce OneNote more
Sandy	Same		Will try to let others answer more	Will try to get more people to post on Yammer so others could benefit and content would be captured

Charles	Less	Expectations have changed for Yammer; could use more for events		
Pat	Less	Sees more possibilities in SharePoint use		
Matt	More	Use more (other factors impacted this); more sense of connecting with community		
Denise	Same	Use more; need to educate people, ready to lead more		
Victor	More	Plan to use more, OneNote for team, more MySite, more Yammer, especially groups		
TOTAL	More: 4 Less: 4 Same: 5	No change to come: 3	Will try to not answer before others: 3	Will do more: 9

Findings from research Question 4 describing worker experience in using social media for informal learning were complex. Participants described their lived experiences involving the use of social media for connecting and communicating, for building relationships, and for learning effectively and efficiently on the job. Learning on the job referred to giving or getting helpful colleague support quickly and finding what one needed to know. Participants indicated that they used the different social media tools as appropriate for different tasks, including searching through content that had been previously captured and tagged. They also revealed that they were able to interact with others whom they found through the tools, finding needed expertise and discovering new ideas. “So if I do interact with that person, they can start sharing ...their wisdom with me versus just information” (I21M, 482-489). Another theme that emerged was the value of using the tools for collaboration. Lastly, participants expressed disappointment at the lack of a growing learning culture and a growing community of learners. There

were hopes that this community would build over time so that eventually there would be a critical mass of users.

Participant logs indicated more about the social media experiences. Yammer use was logged most often during the study period. Almost all participants said they gained awareness from their reflections during the logging. Ten participants suggested their behaviors would change in the future as a result of logging their activities. They learned something about their own behaviors that they had not been aware of prior to the study.

Summary

In Chapter 4, study findings addressed the main research topic: to examine factors in worker use and perception of social media that lead to successful informal learning outcomes in the workplace. Findings described how participants viewed their lived experiences of social media use for informal learning within a specific corporate environment. Data was derived from the participants themselves. Factors to consider were participant characteristics, roles, and environment. Participants were well educated, were technologically savvy, experienced at work, and all but one used social media both in and out of work. Question 1 findings indicated: Participant characteristics and behaviors described in this sample included: technology skills, self-direction, leadership, and caring about learning and helping others learn. Participant characteristics and concerns had a strong impact and were key to successful social media participation and effective learning outcomes. Question 2 findings indicated: Job roles and social media roles mediated use, providing differing incentives for participation. Job roles that included social media usage and approved digital coaching tended to enable participation. Those without formal roles calling for social media use were more likely

to face constraints such as lack of time to participate. In some cases, managers and employees were simply not aware of social media. For participants with job roles that did not require social media use, there were other incentives and benefits provided by social media activities (e.g., socializing, recognition, building influence). Technology expertise, interest in learning, and self-direction enhanced participation where social media use was not part of job role. Question 3 findings indicated: Environmental constraints were perceived as having company impact but did not prevent participants' social media use. Constraining factors included: management and colleagues non-valuing attitudes, lack of management participation and leadership guidance, lack of time, lack of tool awareness and effectiveness, usage policies, content credibility, noise, and overload. Participants found different strategies to minimize some of the concerns.

Lastly, Question 4 findings indicated: The majority of participants' perceptions of their lived experiences were that they connected and communicated, building new relationships. They learned by sharing or contributing information and gained new perspectives. They perceived that these capabilities, in turn, enabled them to work more effectively and efficiently and enhanced collaborative activities. Most participants expressed hope that the learning community would grow. Participants found that logging their social media use during the study led to more awareness and learning about effectively using social media. All participants at the end of the study were continuing to learn or contribute to learning through some combination of the social tools available within this top Fortune 500 global manufacturing company in North America.

CHAPTER 5

Discussion

This chapter discusses the comprehensive findings based on the research questions about social media use within the corporate environment for informal learning. This chapter also includes implications for instructional technology, limitations of the study, recommendations for future research, and conclusions.

The purpose of this study was to examine factors in worker use and perception of social media that lead to successful informal learning outcomes in the workplace. This research examined workers' characteristics and perceptions of their experiences in order to understand more about when and how social media tools assist them in meeting their learning needs. While some companies have adopted social media tools, there is still limited empirical research that specifically addresses worker perceptions and worker voice regarding social media use for informal learning in a corporate environment.

This study was guided by the following research questions:

1. What are characteristics of effective, active users of social media for informal learning?
2. How does worker perception of role at work impact use of social media?
3. How does worker perception of the workplace impact social media use for informal learning?
4. How does the worker experience use of social media tools for informal learning?

Question 1: What are characteristics of effective, active users of social media for informal learning?

This study presented views of participant perceptions and experiences within the workplace that involved social media use for informal learning. Findings indicated that, in this study, worker characteristics and experiences impacted participant use of social media for informal learning. Data for this question was derived from Phase 1 survey responses and from interviews and participant logs. Participants were well educated, and experienced (although not necessarily in their current jobs), saw themselves as technologically savvy and as frequent users of social media at work. A majority of participants were early adopters of technology. “Tools are finally catching up to the way I like to work” (I14J, 533-534). These participants saw themselves as self-directed and motivated learners who lead the way and teach others. “If I lead the way, I see other people comment” (I11L, 220). The participants indicated they cared about helping others learn. All participants used their logging reflections to gain awareness and ten participants indicated they were considering changing behaviors in their social media use. These characteristics were key to participant uses of online informal learning opportunities. Participant characteristics and self-concepts are consistent with Knowles et al.’s criteria for adult learners (2005). In this study, use of social media reflects: relevant experience; belief in the participants’ own skills and abilities to direct themselves; belief in their own choices about why, what, how, and where to learn when learning is meaningful to them; a realistic context; and a sense of internal motivation (Knowles et al., 2005).

The participants in this study provided examples of self-directed learning principles espoused by many in the literature. Knowles (1975, 2005), Merriam (2001), Bingham et al. (2010), Confessore et al. (1998), Batchelder, (2010), and Dunlap et al. (2005, 2011) referenced self-directed learning. McLoughlin et al. referred to self-directed individuals as being important in building learning communities. They stated, “Beyond the walls of formal places of learning, there is a plethora of ...individuals that are self-directed, vital, self-managed and active in the generation of new ideas, and... examples of thriving knowledge creating communities” (2007, p. 664). Within the university, students often need support to learn to become self-directed (Dunlap et al., 2009). Batchelder (2010) explored use of social media tools for learning in academic environments. Batchelder’s purposeful sample of student learners developed more confidence, growth, and “commitment to lifelong learning,” and began to value collaboration, having a support community, and using tools to solve problems. Batchelder said that, “The strong evidence of self-directed learning characteristics experienced by participants was the most distinctive of the differences” in traits in his study (2010, p. 133). The current research confirmed that in this study, self-directed learning was a critical aspect of learning characteristics and stands out as a main factor in these participants’ social media activities. Participant comments about their logging showed how these individuals gained awareness and learned through reflection. Sandy said, “If I had to say what... is the main reason that you use social media... here at work, is for sharing information with others” (I16S, 47-49). Ellen said she learned about: “Awareness and mindfulness of what I’m doing, and maybe some ideas about how to do it more productively” (I10E, 120-121). Victor said, “I know I could be using it for more

things. ...I need to figure out a way to leverage it to share items with my team more often” (I26V, 250-252). Jessica said: “Maybe I should more regularly respond in such a way that teaches people how to go get their own information” (I14J, 370-371).

These participants expressed confidence in their abilities and skills, believed they already knew how to collaborate effectively, and used social media tools to solve problems. Participants had made a commitment to lifelong learning. It was already well integrated into their lives as shown by their expressed interests and activities, such as coaching others to help them learn. In the work context, the study participants indicated that they relied on themselves and also on others in whatever communities they chose to join. This confirms Batchelder’s findings about self-directed learning as a distinctive characteristic and extends that finding to the corporate environment with regard to informal learning through social media.

A number of studies have established that technology expertise and skills are important. Zhang et al. (2010a), Lee et al. (2010a), Tasir et al. (2011), and Hazari et al. (2009) explored implementing new tools and developing technology skills. Hazari et al., (2009) found that experience with technology was a factor in wiki use for collaboration. Tasir et al. (2011) found student backgrounds in technology enabled more success. Lee et al. also confirmed, “social learning relies on learners’ skills and knowledge of technology” (2010a, p. 2585). Zhang et al. found that technology expertise made a difference in usage in an enterprise setting (2010a). The current study confirmed these findings. Participants did perceive that they had sufficient technology expertise in social media use; this was one criterion for participation in the study. To use social media for

learning in a workplace environment, a sufficient level of social media technology skills enables participation.

The current study explored the area of participant characteristics and social media use within a workplace setting as indicated through the survey and through worker voice. Findings indicated that participants had additional characteristics that mediated their successful use of social media for learning. These individuals indicated they cared about learning and considered themselves leaders. They liked helping others and engaged in sharing knowledge. Others will need to take the time to develop technology and knowledge sharing skills and similar behaviors in the future. This will enhance learning and help meet corporate objectives, as companies seek to improve collaboration, expertise location, and productivity (MIT Sloan Management, 2013; as cited in Emelo, 2013). The current participants provided an example of critical skills and behaviors as a key element of a successful informal learning implementation in a corporate environment through social media.

Question 2: How does worker perception of role at work impact use of social media?

Findings indicated participants perceived that their various job roles mediated their social media use at work and could constrain or enable social media use. However, even if they perceived that there were constraints, they found benefits that offset the constraints. Complex factors mediated their perceptions such as formal job roles and roles within the social media space. The workers in the study perceived that benefits such as saving time on tasks, receiving thanks and recognition, building relationships and influence, learning, and helping others due to roles within the social media space

were incentives for participation. Personal characteristics and self-directedness were related to this question as well. Most study participants whose jobs involved social media support or oversight contributed to knowledge sharing on an ongoing basis and often received positive recognition for that use by supervisors. Others, who did not have job roles that involved social media use or oversight, participated by making time, after fulfilling job responsibilities, to find information and expertise or to support others. These latter individuals more often perceived lack of time as a factor that could impact participation, bearing in mind that participation could save a great deal of time in doing their jobs.

Boileau addressed role in the workplace as a mediating factor in the use of interactive technologies for informal learning based on Activity Theory. His methodology included mixed methods. Some of his focus on role was different; he examined outcomes in terms of performance for the “community” and “usage patterns within groups” (2011, p. 115). He also examined individual role impact. Roles did have a perceived mediating effect in this current study, as it did in Boileau’s. In both studies, participants viewed themselves as leading through example (Boileau, 2011). However, in the current study, the purposeful sample included participants who were, in actuality, among the most active social media users in the two organizations studied at the company. This was part of criteria in the sample selection process.

There were also differences in findings, where participants in the current research did not express the same concerns as in Boileau’s study, where participants were concerned about “being left behind by others who are more open to learning about new technologies” (2011, p. 121). In the current study, participants saw themselves as

among the leaders or early adopters with regard to learning about new technologies. These participants were, at times, challenged in their efforts to participate in social media, depending on roles, yet they continued to participate. The current study extends the focus on worker role to address other factors that mediate such as context, and includes worker voice about these experiences.

Question 3: How does worker perception of the workplace impact social media use for informal learning?

In this study, participants perceived environmental factors as mediating social media use; however, these constraints did not prevent their use. They perceived environmental factors as primarily limiting adoption by others. Participants viewed elements that might constrain use as including: lack of time, management and colleagues not valuing use (mostly Yammer use), lack of sufficient leadership participation and guidance, lack of tool awareness and effectiveness, company usage policies, content trust issues, online “noise,” and information overload. Estrada, in his qualitative study with learning professionals, found some of the same environmental corporate constraints as were found in this study (2012). He focused on obstacles to adoption of Web 2.0 technologies in the corporate workplace (2012, p. 4). Those obstacles included: learning value not recognized, lack of time for use, lack of tool integration, lack of people participating, and more. This study confirmed many of the same obstacles. Regarding attitudes, Estrada established that management did not value use of social media (2012). Eraut stated that management support is one of the most significant factors in valuing informal learning in the workplace (2004). While many colleagues of participants in this study did not participate in Yammer, the participants had found their own value for it

and were deeply committed to using Yammer, OneNote (collaboratively), or SharePoint applications. Participants believed use of these tools offered learning opportunities and could save them time. This study confirmed the perception of management's role as a mediator but also demonstrated that participants, as self-directed users, may still participate successfully. The current study builds on Estrada's findings on workplace obstacles and extends the research to consider worker characteristics, perceptions of role, and how the worker experiences social media as heard through worker voice.

Zhang et al. reported that, "users with managerial titles reported more perceived usefulness" (2010, p. 7). However, participants in this study perceived that most managers, even if not their own, did not find value in social media use and often managers had no awareness of social media use. Zhang et al. (2010) found that co-worker participation influenced adoption. This study did not confirm that co-worker participation was a critical factor for participation in this sample group, although participants clearly wanted more colleagues to adopt social media use at work. Participants in this study were selected because they do participate, reflecting different participant selection criteria and different characteristics. This study also considered additional tools within the company besides Yammer, using a different methodology.

Regarding tools, Vygotsky suggested that tools could cause modification in how individuals think and adapt (1978). The technology tools participants used were perceived as mediating experiences. Participants in this study perceived others' lack of awareness of tools and lack of tool effectiveness as constraints. However, participants used the tools regardless of usability concerns. Within the literature reviewed, Zhang et al. (2010a, 2010b), Boileau (2011), Erlich et al. (2010), Lee et al. (2010b), DiMicco et

al. (2008a, 2008b), and Estrada (2012) dealt with social media or interactive technologies within a workplace environment and all considered the impact of technology tools. There were differences in all studies reviewed. Most found there was or could be information sharing but from different perspectives. In this study, findings indicated that participants made the best use they could of tools even with reported constraints about effectiveness.

Of the studies mentioned, Boileau showed that informal learning took place through interactive technologies in a workplace. The current study confirmed his findings that informal learning takes place and that context mediates tool use. He found similar benefits in terms of incentives and what he termed “social influence” which in this study was described as recognition or influence (2011, p. 137). His study was formulated differently. In Boileau’s research, all participants did not have access to the same tools and group membership was more of a focus (2011). In DiMicco’s study, the company built their own tool within the company intranet (2008a, 2008b). In this study, social media access was the same across the company; but one tool, Yammer, was based outside the intranet and that affected policy in terms of what could be posted; this, in turn, constrained use. Boileau concluded that interactive tools lead to more collaboration (2011). This study indicated that social media enable collaboration and extended the topic to add more about the worker, worker perceptions, voice, and meaning.

Question 4: How does the worker experience use of social media tools for informal learning?

In Question 4, participants described their lived experiences of learning informally using social media in the corporate environment. Participants described how

they open social media applications and how they attend to them throughout the day.

Four main themes that emerged from these descriptions were:

- First, participants connect and communicate with people they know and those they do not know, building relationships globally.
- Second, learning effectively and efficiently on the job, participants use social media spaces to find help quickly or provide help with problems and discover opportunities and ideas.
- Third, collaboration within the work community was perceived as a benefit of using social technologies at work, both to find people of like mind and to work and learn collaboratively together.
- The fourth category, building a community of learners, identified participants' disappointments and hopes for a growing presence of people within the social learning community.

Theme 1: Connecting and Communicating

A main finding of this research was that almost all participants used social media to connect and communicate. The communications were often with those they did not already know or with those who are located elsewhere. Much of the research cited in this study reported on the value of different aspects of social media use and was based on different theoretical foundations. Social media as used for communications came from multiple sources: From Java et al. (2007), findings have shown that people communicate information online, especially to those they know; Zhao and Rosson (2009), showed that people find incentives such as emotional benefits and trusted sources online when they connect. The DiMicco et al. studies (2008a, 2008b) indicated an increase in social

connections through a social tool. This study confirmed, using social media at work, participants communicate online to those they know and to others, that they perceive incentives that benefit them emotionally, and that they find trusted sources online. Some of the findings in the current study overlap those of DiMicco et al. (2008a, 2008b). However, DiMicco et al. studied only social networking and the research was from a motivational perspective. Zhang et al. (2010) showed that people used microblogging to keep up with news and share information. Zhang et al. found that Yammer did support “informal communication, ...and build potential relationships” (2010, p. 7). This study confirmed these findings about communication as enabled through social media use and approached the topic from the perspective of communications theory and social constructivism as heard through the participant’s voice.

The Campos Ecology of Meanings Model may be seen as underlying the kinds of communications that enabled workers to find, communicate with, and share knowledge with multiple others based on their own choices through social media use (Campos, 2007). Campos explained that through his model, an “exchange leads to construction and co-construction and to learning” (2007, p. 400). Campos' meaning of communication enables learning and can be applied to uses described in this study. Findings from this study also indicated that participants valued the many perspectives they could learn about as shown in the model. Participants wanted to stay abreast of what was happening in a shared space. They joined groups of people with shared interests. Participants wanted to interact with other people to learn or help others learn. Both Campos’ theory and social constructivist theories of learning support the value of learning through multiple perspectives.

Theme 2: Learning Efficiently and Effectively On The Job

Efficient and effective support: This study confirmed the use of social media by all participants to learn or to help others learn on the job. Several studies focused on what companies wanted to do in the future. Erlich et al. (2010) focused on microblogging use and the methodology, like Java et al.'s (2007) approach, included analyzing posts, but both inside and outside the corporate environment. Erlich et al. confirmed that microblogging aids people in finding quick help and sharing information. Zhao et al. (2009) and Zhang et al. (2010a) also showed there is information sharing using social media tools. The current research provides additional support for sharing information efficiently and effectively as shown in the previous findings and expands the findings to include an exploration of kinds of sharing such as mentoring. As one participant said, "I think it can be anything to anybody, depending on what their needs are." (I14J, 496-497). The comments indicated that participants experienced a range of learning experiences. This study also included a wider perspective in terms of factors that mediate informal learning through social media, discovered through worker voice.

Interacting with others on the job: This study supports theoretical ties to Vygotsky's Zone of Proximal Development. The online community serves as a vehicle that fosters support or "problem solving under guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86, as cited in Reiber & Robinson, 2004, p. 352). In addition, since learning is done on the job, it is situated learning, or learning within a particular context and within the specific culture in which knowledge is applied (Brown et al., 1989). The importance of learning on the job, or situated cognition, is a key concept that was confirmed in this research.

This study found that the participants chose to use social media tools during the workday to help them solve problems or to find people who could engage with them in learning about a problem they faced on a task. The learner must be ready to understand what the task will require to be successful (Wood et al., 1974). When the learner is ready, she can use that opportunity to interact and follow up with relevant questions (Wood et al., 1974). This study found that the virtual social media environment does support a scaffolding experience according to some participants.

New ideas: As stated previously, social constructivism supports the notion that, “learning results from an exploration of multiple perspectives” (Richey et al., 2011, p. 248). In this way, the framework presented here, in which learning interactions and dialogue take place online with multiple active workers exchanging multiple perspectives, on-the-job, solving problems, fits within a social constructivist foundation. Participants felt that exposure to new ideas helped them learn effectively and grow.

Theme 3: Collaboration with Others

This study found that at least eleven participants used social media tools to collaborate in some way. Collaboration falls into the category of social learning as people work together to solve problems and learn together. This was a new awareness to several participants in the study. Dunlap et al. considered “document co-creation” as an essential skill for lifelong learning in a “participatory culture” (2011, p. 16). Within the university setting, there were studies on wiki use by Weaver et al., (2010) and Hazari et al., (2009). In both of these instances, wiki use was based on concepts related to this study such as collaboration, participatory communities or Vygotsky’s theory’s of social learning. Hazari et al. (2009) found that work experience and technology experience

were factors in social media use for student learning; Weaver et al. (2010) reported that students needed more support from instructors than anticipated to collaborate well; this revealed a need for scaffolding to support collaboration. In this study, participants who had technology skills often provided scaffolding for others that enabled more collaboration. They perceived of themselves as having the skills and experience to help others participate successfully and they shared some of the ways to do that. This study extends findings from academic research into the workplace setting.

Within the workplace environment, Lee et al. (2010b) researched collaboration tools and determined companies were showing more interest in them, and especially in wikis. Seventy-nine percent of participants responding in another study said they were using social tools such as blogs, wikis, and shared documents to collaborate in some way (Lee et al., 2010a). Boileau (2011) found that interactive technologies enabled more collaboration but within a context in which users tended to adopt more frequently on their own. In the current study, findings confirmed that participants valued collaboration. However, most participants did not rate the available blog and wiki tools in SharePoint highly. This view was partially due to policies limiting access to specific audiences when certain security levels were required and also due to perceived lack of usability of these SharePoint tools, including wikis. Other tools were considered more effective: OneNote was perceived by most participants as easier to use and as key to collaborating, some people used SharePoint sites or forums, and others used Yammer to find collaborative coworkers. In this study, collaboration was important to participants; in their reflections they demonstrated ongoing thoughts about how to improve their support

for collaborative learning. Participants also shared experiences of how they used applications to share knowledge and how they taught others to do so.

Theme 4: Building a Community of Learners

Within this framework, as viewed through worker voice, this study found that the essence of the participant experience concerns connection with others and what those connections provide, whether it is interactions, effective learning support, better teamwork, or knowledge that can be captured. Through connections, people perceive that they learn and collaborate, strengthen the learning community, and participants as well as the company benefit.



Figure 4. Visualization of themes from participant experiences

Lave and Wenger stated, “Learning is not merely situated in practice... learning is an integral part of generative social practice in the lived-in world” (1991, p. 35). In this study, participants demonstrated that concept in their practices. The desire to build a stronger learning culture and a more enabled learning community emerged as a theme. Participants expressed both disappointment at the current state and a strong sense of

hope for increased user adoption, relationship building, knowledge sharing, and collaboration. This study extends findings of other workplace research and speaks of the meaning that participants find in social media use in the corporate workplace.

Most of the research within the workplace that investigated Web 2.0 social media tools or interactive technologies used different theoretical frameworks that were not focused on learning. Boileau (2011) and Estrada (2012) focused on learning within the corporate environment in studies that confirmed some of the mediating factors found in this study. Both of those studies had different theoretical underpinnings and methodologies. Estrada's participants were all learning professionals and he addressed obstacles. Boileau spoke of opportunities, as workers in his study tended to adopt the technologies on their own. Boileau concluded that his focus, interactive technology use, provides new opportunities for "self expression, communication, and knowledge..." (2011, p. 149). Participants in this study perceived and experienced opportunities for communication, knowledge sharing, and collaboration through social media use. However, for these participants, the meaning of the experience extended beyond technologies. In this study, participants expressed a strong desire to have more people participate in a learning community and culture. Lynda commented:

First of all, I need people to use it. ...I think Yammer is decently designed for people to have different ways to communicate. OneNote is amazing. So it's kind of like I am connected with the people... It makes you start talking to other people, because I don't know everything and I will never know everything in this world (I11L, 435-438, 466-467).

Developing more worker interest: Participant views confirmed the benefits of social media use for learning within the corporate context. Findings showed concerns about adoption: Participants did not see adoption happening as a result of worker efforts alone. Participants expressed hope for more of those in upper management to change from strategies that some perceived as controlling and as not encouraging knowledge sharing and social media adoption within the company. The majority of participants expressed hope for leadership guidance. As Lynda said, “It’s just that if it doesn’t come from upper management, it’s never happening” (I12L, 259-260).

Changes over time: Participants indicated they expect that cultural change will take place over time and will involve different elements. As new workers are hired, participants believed that those workers will have more awareness and skills in social media use and that new workers will want to contribute. To have that collective knowledge, most social media tools, as Web 2.0 technologies, are more effective depending on degree of user activity (O’Reilly, 2005). Participants want to enjoy the benefits of a larger community, as Matt said, “...using the collective knowledge that’s out there to guide you to the right place, or spark a thought” (I21M, 443-444).

Framework: Theoretical frameworks that have supported the views in this study are those of social constructivist theory (Richey et al., 2011), Campos' Ecology of Meanings communications theory (2007), and Knowles concept of the self-directed learner (1975) who functions within a technology enabled Zone of Proximal Development (Vygotsky, 1978). Within this Zone of Proximal Development or ZPD, the worker finds or provides different degrees of scaffolding that help in building and sharing knowledge (Wood et al., 1976) that can be applied on the job (Brown et al.,

1989). The purpose of this study was to examine factors in worker use and perception of social media that lead to successful informal learning outcomes in the workplace. This study suggested that the worker could experience learning in the workplace using social media tools and interacting with others and described key factors. The visualization below, based on my comprehensive synthesis of the essential meanings described, represents the complexity of the structure and texture, both phenomenological constructs, through which people learn informally using social media.

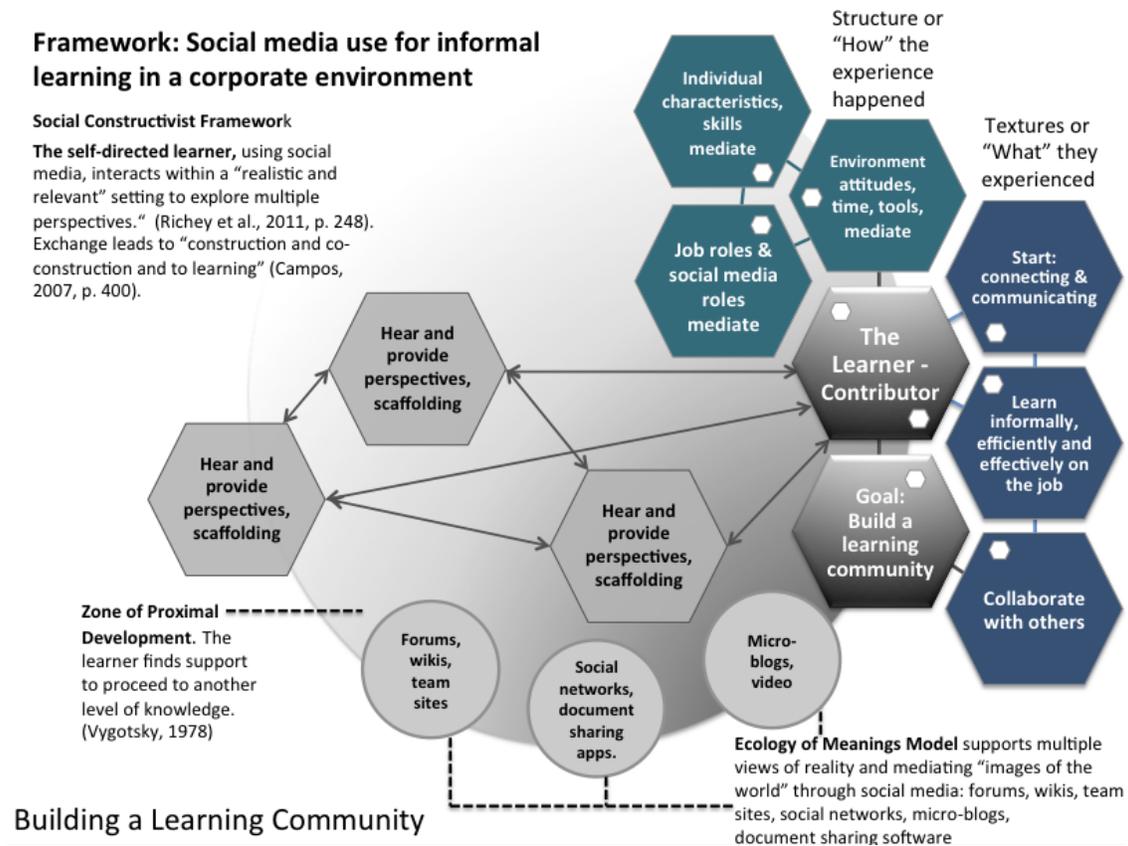


Figure 5. Visualization of structure, texture, and theory of the online experience.

Significance and Implications for Instructional Technology

This study provided research regarding social media use for informal learning in the corporate workplace. There has been limited research available on this topic in the

corporate environment, particularly using this methodology. In this study, findings showed that using social media provided this participant group increased opportunities for informal learning experiences on a global scale. It showed how participants perceived these experiences and how they participated. For the participants, the social media experience offers timely choices about how they learn and work, new resources, and new relationships. This study confirmed that using social media, “employees can share information with the people they know, but more importantly, employees can “share information with people they don’t know” (Azua, 2010, p. 111). Social media tools can provide efficient information-sharing options for workers who can learn from people far away (Azua, 2010). Social media can function as enablers for collaborative activities. These tools provide “all the means to an end, better transfer... more engagement, ...growth of a learning community, support for informal learning” (Bozarth, 2010, p. 17). We have heard workers describe their experiences regarding effective and efficient learning that impacts performance that in turn helps the company.

Beyond the research findings, the implications of this research for instructional technology are that it reflects and validates 2008 changes in the definition of the field. In 2008, the Association for Educational Communications and Technology (AECT) definition of educational technology reflected a different approach to learning (Januszewski & Molenda, 2008). Educational technology was redefined as “the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources” (Januszewski et al., 2008, p. 1). Educational technologists became facilitators of learning and performance improvement. The definition reflects the notion that “...constructivist

learning theories have changed the field from teaching to learning” (Januszewski et al., 2008, p. 2). This study focused on technology within the workplace environment that provided workers opportunities to embark on learner-centered experiences that they determined and controlled. This research explored those participant experiences and uses of the “technological processes and resources” that facilitate learning (Januszewski et al., 2008, p. 1). The environment and context within which the participants functioned enabled them, even with constraints, to take an active, effective role in their own learning endeavors.

Educators and practitioners could benefit from knowing more about constructivist design for the development of “alternative learning environments” (Richey et al., 2011, p. 143). In this study, participants had tools for building relationships, learning, and for collaborative activities that varied. Each tool supported different kinds of functions. The main outcome was confirmation that there is a strong role for informal, self-directed learning as enabled by the social media tools. While formal learning remains foundational, informal learning was valued as enabling workers to learn in a variety of ways in less time, and to amplify the benefits of their learning throughout the company, a critical function for knowledge workers and for the companies in which they work. The same social media tools can be integrated into learning design to different degrees as appropriate, for more complete learning solutions.

According to Bughin, Chui & Manyika, moving company communications to “many-to-many channels would enhance worker productivity” (2012, p. 73). Reducing email, making it easier for workers to find information, and capturing information via social applications would provide productivity efficiencies. Further, “Improved

communication and collaboration through social technologies could raise the productivity of interaction workers by 20 to 25 percent" (Bughin et al., 2012, p. 74).

According to Bersin, learning professionals have not been ready to take advantage of opportunities available through Web 2.0 user-centered social media applications (2011). This issue is critical because workplaces are making decisions about investments in enterprise social networks. Over fifty percent of organizations surveyed in a study by Brandon Hall expect to make more use of social technologies for "collaboration and learning" (2014, p. 3). We are now in an environment in which "what you know is less valuable than what you can do, and sharing that ability is far more important than keeping it in order to be the expert" (Brandon Hall, 2014 p. 9).

To adapt to ongoing technological changes, learning professionals could widen the scope of what learning professionals do. Participants in this study found great value in learning informally. Technology integration in companies is increasing. Learning professionals should consider shifting emphases from developing only or mainly formal courses to enabling and facilitating continuous learning opportunities to enhance performance within formal courses and outside of formal courses. Employees have changing learning needs. Organizations could help enable workers to pursue learning solutions that provide more choices about when and how workers learn. The ability to use digital technologies to find knowledge resources and experts can improve productivity for the organization. Instructional designers and learning leaders should be aware that information is becoming available more rapidly, is needed globally, and that access should be as convenient as possible for workers with little time (Bersin, 2011).

According to Mallon and Johnson, "L&D must be clear about and be able to communicate how it achieves learning effectiveness organizationwide, ...and alignment with business goals and needs" (2014, p. 10). A component of any solution would be alignment of goals. Leadership and learning professionals would be more effective as partners who develop a culture of learning, reflection, and trust (Vickers, 2013). For information sharing to flourish, employees should feel that is safe to ask questions on social media and that helping others learn and collaborate is valued, recognized and rewarded. Environmental concerns must be addressed. Stakeholder support, leadership, and alignment are critical.

In this study we have seen that expertise in communication and knowledge sharing technologies are important for knowledge sharing participation through social media. Learning professionals would benefit from facility with a range of changing technology tools that enable design of learning environments with varied learning solutions so they can lead, too. According to Bughin et al., "social technologies are destined to play a much larger role... in how companies are organized and managed" (2012, p. 73). Learning professionals can facilitate this transition by listening to worker voice, by conducting audience, environmental, and task analyses, and by implementing appropriate and agile learning solutions in a constantly changing work environment.

Limitations of the Study

Participants did not keep logs uniformly. Participants indicated that at times they had forgotten to record their use, some recorded browsing and posting, some recorded only posting, and some missed days entirely. Four participants indicated concern about perceptions of their tool use as recorded in logs; they noted that they got their work done

and that Yammer saved time. In this research, logs were primarily used to indicate the software being used and to enhance participant reflection and awareness.

The findings of this research reflect contributions of the participants involved, but also reflect an organization's culture, population, policies, and tools. Each corporate environment will differ. Learning professionals and decision makers must consider all aspects of the context in designing learning solutions and environments.

Recommendations for Future Research

Suggestions based on research findings could potentially help build stronger learning communities within a participatory, shared global workspace. In the academic studies reviewed, the audience and the environment differed from corporate contexts, but shared perceptions of educators from the literature reviewed indicated that social media is a resource for learning that requires further study. Within the corporate environment, Lee et al. (2010a) stated that there is growing interest in the implementation of social learning strategies through social media. Informal learning opportunities are already being implemented in the corporate environment, including strategies that use social technologies (Brandon Hall, 2014). Some research recommendations follow.

Research is recommended to explore optimal organizational strategies to implement informal learning through social media. This study has shown that environmental factors mediate adoption of informal learning strategies. Learning professionals and learning leaders have key roles in social media implementations that affect learning. Learning organization goals and company goals should align as a first step to determining any strategies. Once goals and objectives are determined, with

consideration for the changing needs in an organization, what strategies should be implemented? Estrada suggested and this study concurs with the importance of stakeholder sponsorship, sufficient resources, and that learning departments include “roles that support social media” as factors to consider (2012, p. 81). Research could explore the design and impact of these strategies, given organizational context.

Research is recommended to explore how adoption and informal learning through social media is measured. Meadow & Mallon (2010) suggested measurement frameworks to show value for informal learning implementation that account for factors such as desired competency level, resources needed, level of trust, reflection, alignment with company goals, and more. Research could explore how these factors and others help learning organizations increase effectiveness of informal learning opportunities.

The impact of management's role in any implementation strategy is another area of suggested research. In this study, adoption was perceived as constrained by management and colleague attitudes, lack of sufficient management participation and role modeling, and lack of guidance, among other factors. Research shows management support is very important to informal learning (Eraut, 2004). More research is needed to explore optimal leadership roles for design, development, and implementation of social media strategies for informal learning.

Wikis were not a key factor in the current study according to logs. Two constraints were: policies that limited access and complaints about tools. Wikis can be important vehicles to build shared knowledge and for collaboration, as indicated by some study comments, two studies in an academic environment (Weaver et al., 2010; Hazari et al., 2009) and a study of corporate professionals (Lee et al., 2010b). Wiki

opportunities should be explored further to find out more about recommended features, how wikis can be used, and best practices for implementation.

Research is needed to tie type of task to best type of learning solution for different learning outcomes along the formal to informal continuum. Gramm (2012) suggested routine work requires more formal than informal learning. He mapped jobs on a “routine vs. knowledge work” continuum to suggest that informal solutions would most benefit those with less standardized work (Gram, 2012, p. 2). However, there was no empirical evidence available to confirm this claim and there are other factors to examine. The current findings suggest complex factors mediate determination of best learning solutions. Participants in this study, who had technology expertise, described some opportunities for informal learning as based on contextual elements such as task; time available to learn; and effective, easy to use resources to find the answers needed. Additionally, research could explore how being able to apply the learning solution right away, on the job, affects learning construction, retention, and productivity. The learning professional will need to account for many factors, as shown in this study, in design, development, and facilitation of effective and efficient learning solutions.

Conclusion

Most of the studies within the formal university context focused on enabling learning, engagement, lifelong learning commitment, growth, or using additional resources to support the learning management system. Studies within the workplace focused on communication and motivation. Of the two studies that focused on learning within the workplace, the audience, methodology, and intent were different.

This study was designed for a purposeful sample of active and technically experienced social media users in order to learn from: their usage, reflections, perceptions, and voice. Participants described self-direction, caring about learning, sharing knowledge, and their own leadership behaviors as mediators of experiences in learning through social media. Their abilities, skills, feelings, and behaviors stood out as key to their successful and effective use of social media to learn and provided meaning to these individuals. Other elements that interacted with worker perceptions were formal job role objectives, social media roles, and the worker's perceived intrinsic and extrinsic benefits (e.g., opportunities within the social media space such as building influence, achieving recognition, and socializing). These factors mediated use and could offset job role constraints. Participants perceived that environmental factors mediated their ability to use social media for informal learning. Management and colleague attitudes of non value, lack of leadership participation and guidance, lack of time to participate, restrictive company policies, lack of tool awareness and effectiveness, concern about accurate content, noise, and overload were experienced as constraints within the company. These constraints must be addressed for more widespread adoption.

In question four, four main themes emerged from descriptions of participants' lived experiences with social media. These were use of social media: 1) for connecting and communicating, 2) for learning effectively and efficiently on the job, 3) for collaboration with others, and 4) to build a community of learners. While the first three themes reflected the current state of how participants used social media for learning, the last theme was reflective of disappointment and hope for the future. In the study, reflection through logging helped participants become more aware and learn as well.

Participant activities offered a model or blueprint of social media use for informal learning in the corporate environment. Participants described some of the elements that led to success for them. These findings offer learning professionals and learning leaders guidance on use of social media tools on the job. Participants perceived that social media activities provided the enterprise with benefits such as increased timely communications to a wide audience, knowledge capture, help with problem solving, and learning support for others as well as for themselves. They saw these patterns of use as contributing to company productivity. This study provides a sense of the participant lived experience and voice when using social media within a Fortune 500 global corporate enterprise in North America. In addition, worker voice expressed aspirations to strengthen social media use that, like other Web 2.0 applications, would enable a stronger collective voice and knowledge base within the corporation.

I was honored to have had the opportunity to conduct this research. I feel deep gratitude to my participants for the time and reflection these caring individuals contributed to this learning project. They showed courage as leaders in the use of social media, especially if they did not have support. I have learned from them and been inspired by them. This experience has taught me to extend myself more, to take the time and make the effort, especially using new technologies, to help others learn. All participants expressed their desire to contribute and help. I thank them. Some participants said they hoped very much this research would make a positive difference within the workplace, and they were excited about it. I hope that this study does make a difference and informs practices of learning professionals and leaders within the corporate environment and within the learning community.

APPENDIX A

IRB Approval: November 5, 2013

WAYNE STATE
UNIVERSITY

FILE

IRB Administration Office
87 East Canfield, Second Floor
Detroit, Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
<http://irb.wayne.edu>

NOTICE OF EXPEDITED APPROVAL

To: Susan Genden
Administration & Organization Stud

From: Dr. Deborah Ellis Corey Zolondek/RS.
for Chairperson, Behavioral Institutional Review Board (B3)

Date: November 04, 2013

RE: IRB #: 103713B3E

Protocol Title: Worker Perceptions of Social Media Use for Informal Learning in a Corporate Environment

Funding Source:

Protocol #: 1310012424

Expiration Date: November 03, 2014

Risk Level / Category: Research not involving greater than minimal risk

The above-referenced protocol and items listed below (if applicable) were **APPROVED** following *Expedited Review* Category (#6 #7)* by the Chairperson/designee for the Wayne State University Institutional Review Board (B3) for the period of 11/04/2013 through 11/03/2014. This approval does not replace any departmental or other approvals that may be required.

- Revised Protocol Summary Form (received in the IRB Office 11/4/2013)
- Protocol (received in the IRB Office 10/4/2013)
- A waiver of requirement for written documentation of informed consent has been granted according to 45 CFR 46 116(d). This waiver satisfies: 1) the research involves no more than minimal risk to the participants. Interviews have risks no greater than normal conversation. There is an adequate plan to prevent breach of confidentiality; 2) the research involves no procedures for which written consent is normally required outside of the research context. An interview or survey normally does not require written consent; 3) the consent process is appropriate and 4) an information sheet disclosing the required and appropriate additional elements of consent disclosure will be provided to participants.
- Research Information Sheet Phase 1 (received in the IRB Office 11/4/2013)
- Research Information Sheet Phase 2 (received in the IRB Office 11/4/2013)
- Appendix B: Email to Potential Participants and Follow up email to respondents (received in the IRB Office 11/4/2013)
- Appendix D: Survey (received in the IRB Office 10/4/2013)
- Appendix E: Thank you emails for those ending participation (received in the IRB Office 10/4/2013)
- Appendix F: Thank you emails for those selected to participate (received in the IRB Office 10/4/2013)
- Appendix G: Orientation Script (received in the IRB Office 10/4/2013)
- Appendix H: Social Media Check Sheet and Log (received in the IRB Office 10/4/2013)
- Appendix I: Interview 1 (received in the IRB Office 10/4/2013)
- Appendix J: Interview 2 (received in the IRB Office 10/4/2013)
- Appendix K: Purpose and Research Questions (received in the IRB Office 10/4/2013)

* Federal regulations require that all research be reviewed at least annually. You may receive a "Continuation Renewal Reminder" approximately two months prior to the expiration date; however, it is the Principal Investigator's responsibility to obtain review and continued approval **before** the

IRB Extension Approval
Continued to Sept. 21, 2015

**WAYNE STATE
UNIVERSITY**

IRB Administration Office
 87 East Canfield, Second Floor
 Detroit, Michigan 48201
 Phone: (313) 577-1628
 FAX: (313) 993-7122
<http://irb.wayne.edu>

NOTICE OF EXPEDITED CONTINUATION APPROVAL

To: Susan Genden
 Administration & Organization Stud

From: Dr. Deborah Ellis or designee C. Zolundok / PB
 Chairperson, Behavioral Institutional Review Board (B3)

Date: September 22, 2014

RE: IRB #: 103713B3E
 Protocol Title: Worker Perceptions of Social Media Use for Informal Learning in a Corporate Environment
 Funding Source:
 Protocol #: 1310012424

Expiration Date: September 21, 2015

Risk Level / Category: Research not involving greater than minimal risk

Continuation for the above-referenced protocol and items listed below (if applicable) were APPROVED following Expedited Review by the Chairperson/designee of the Wayne State University Institutional Review Board (B3) for the period of **09/22/2014 through 09/21/2015**. This approval does not replace any departmental or other approvals that may be required.

- Closed to accrual and active intervention completed (accrual closure date 4/7/2014).

- ° Federal regulations require that all research be reviewed at least annually. You may receive a "Continuation Renewal Reminder" approximately two months prior to the expiration date; however, it is the Principal Investigator's responsibility to obtain review and continued approval **before** the expiration date. Data collected during a period of lapsed approval is unapproved research and can never be reported or published as research data.
- ° All changes or amendments to the above-referenced protocol require review and approval by the IRB **BEFORE** implementation.
- ° Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the IRB Administration Office Policy (<http://www.irb.wayne.edu/policies-human-research.php>).

NOTE:

1. Upon notification of an impending regulatory site visit, hold notification, and/or external audit the IRB Administration Office must be contacted immediately.
2. Forms should be downloaded from the IRB website at **each** use.

*Based on the Expedited Review List, revised November 1998

APPENDIX B

First Email To Potential Participants

Genden, Susan (S.)

Subject: Participants are Needed for a Study on Social Media Use within the Company

Social Media RESEARCH: Your participation is needed!

Dear Yammer User:

I need your help. I am a doctoral candidate in the Instructional Technology Program at Wayne State University and I am conducting doctoral research on social media use and learning. **I am interested in hearing from active social media users within the Company.** (Social media, for purposes of this research, refers to online technologies that enable multiple users to interact, generate content, and collaborate in real time or through postings viewed later.) Some examples are Facebook, Twitter, and Yammer – an internal application.

About the Study

Phase 1 includes participating in a ten to twenty minute survey. You may be asked to participate in Phase 2 of the research. In **Phase 2**, participants will keep brief logs (for two weeks) of **internal** social media use and participate in two interviews. Phase 2 could take about four hours over a four to eight week time span, depending on your availability. There will be a small gift given at the end of the research (value \$10 - \$15) for those completing both phases of the study.

Results may help instructional professionals improve learning opportunities for you and others, and will contribute to the instructional technology knowledge base. Study participation is voluntary.

Next Steps

If you are interested in participating, please reply to this message for more information and a link to the survey. An email is attached to confirm that this research has been approved at the Company.

Thank you,

Susan Genden

Principle Investigator / Instructional Technology / Wayne State University

Phone:

Email:

APPENDIX C

Follow up email to respondents: Information for study participation with attached Research Information Sheet for Phase 1

From: [Genden, Susan \(S.\)](#)
To: [Genden, Susan \(S.\)](#)
Subject: STUDY on Social Media Use within the Company - SURVEY Link
Date: Friday, February 07, 2014 10:16:23 AM
Attachments: [Research Information Sheet Phase 1.pdf](#)

Dear Potential Study Participant,

Thank you for responding to my request for participants!

Your participation is very important to the study. Please **read** the information about the study in **the attached Research Information Sheet**. If you consent to participate, please click on the link to take the survey: [Social Media Use Survey](#). Click [this link](#) if you need to return to the survey.

NOTE: When taking the survey, be sure to select **FINISH** at the end to complete the survey. Contact [_____](#) if you have any problems.

Thank you,

Susan Genden

Principle Investigator / Instructional Technology / Wayne State University

Phone: Email:

Research Information Sheet Phase 1 was attached to the email.

Research Information Sheet Phase 1

Title of Study: Worker Perceptions of Social Media Use for Informal Learning in a Corporate Environment

Principal Investigator (PI): Susan Genden
Instructional Technology
Phone:

Purpose:

You are being asked to participate in research that will investigate worker perceptions of social media use for informal learning at work because you are person who uses social media at work. This study is being conducted either in your own workplace or in a private conference room, in a building used by your Company locally. This doctoral research is part of the principal investigator's dissertation, and is under the direction of Dr. Monica Tracey of Wayne State University.

Study Procedures:

If you take part in the study, you will be asked to do the following as part of the research study:

- Take an online survey.
- The survey will take up to 20 minutes to complete. The questions ask about your social media use and technology background. You have the option of not answering all the questions. If we have enough information, you may still remain in the study.
- You may choose not to participate in the survey. This will remove you from the study and will not affect your work in any other way.
- Depending on your answers, you may be asked to participate in Phase 2.
- The entire time frame for Phases 1 and 2 is four to ten weeks, depending on time needed to find participants and your availability to meet. The total time required from you, if you participate in both phases, would be approximately four and one half hours.

Benefits

- The possible benefits to you for taking part in this research study are: a greater awareness of how a particular social media tool may benefit you and other workers, and an increased sense of your own technology skills and how they may have changed. In addition, information from this study may benefit other people now or in the future.

Risks

- There is very limited risk of “breach of confidentiality” to taking part in this study. See measures taken below.
- There will be no costs to you for participation in this research study.

Compensation

- You will not be paid any extra compensation for taking part in this study. However, participation will be during normal work hours and you must receive manager approval to take part. Contact Susan Genden at [redacted] if you have questions about this.

Confidentiality:

You will be identified in the research records by a code name or number. Any identifiers that link your identity with this code will be stored on an encrypted external hard drive kept separately in a locked company cabinet that only this researcher can access. This information will be destroyed once the report is complete. Only the aggregated final report with no identifiers will be shared with the company.

Voluntary Participation /Withdrawal:

Taking part in this study is voluntary. You are free to not answer any questions or withdraw at any time. Your decision will not change any present or future relationships with the Company or with Wayne State University or its affiliates.

Questions:

If you have any questions about this study now or in the future, you may contact Susan Genden at the following phone number: [redacted]. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Participation:

By completing the survey, you are agreeing to participate in this study.

APPENDIX D**Thank you emails for those selected to participate**

Those selected for Phase 2 of the research received a thank you email and additional information regarding next steps. They were asked agree to an appointment time for Orientation and Interview One. The Research Information Sheet Phase 2 was presented at the Orientation meeting.

Sent: Monday, February 10, 2014 9:10 AM

To: Genden, Susan (S.)

Subject: Study on SOCIAL MEDIA USE within the Company - Follow Up & Next Steps

Dear Participant,

Thank you for your participation in our recent survey for Phase1 of this study. Phase 2 of the research is now starting. **Your continued participation is very important to the study!** I will send an email with a suggested meeting time and date for a brief Orientation meeting and Interview #1.

Please respond as soon as possible to that email. If you have any questions, contact me at _____.

Thank you,

Susan Genden

Principle Investigator / Instructional Technology / Wayne State University

Phone:

Email:

APPENDIX E

Presented at Orientation for Phase 2

Research Information Sheet Phase 2

Title of Study: Worker Perceptions of Social Media Use for Informal Learning in a Corporate Environment

Principal Investigator (PI): Susan Genden
Instructional Technology
Phone:

Purpose:

You are being asked to participate in research that will investigate worker perceptions of social media use for informal learning at work because you are a person who uses social media at work. This study is being conducted either in your own workplace or in a private conference room, in a building used by your Company locally. This doctoral research is part of the principal investigator's dissertation, and is under the direction of Dr. Monica Tracey of Wayne State University.

Study Procedures:

If you take part in the study, you will be asked to do the following as part of the research study:

- Participate in one orientation and two interviews: one interview during the study and one at the end of the study period.
- Log your uses of social media at work and your reflections of that use during a two-week period.
- Print out a copy of your online social media interactions at the end of the research period.
- You may choose not to participate in the logging and interviews. This will remove you from the study and will not affect your work in any other way.
- An orientation will take about 20 minutes to complete.
- Two interviews will take approximately 60 minutes each to complete.
- The log to monitor social media use covers only a two-week period and there is logging time of about 10 minutes each day.
- The time frame in Phase 2 may cover four to eight weeks, depending on your availability to meet. The total time required from you over this period is approximately four hours.

Benefits

- The possible benefits to you for taking part in this research study are: a greater awareness of how a particular social media tool may benefit you and other workers, and an increased sense of your own technology skills and how they may have changed. In addition, information from this study may benefit other people now or in the future.

Risks

- There is very limited risk of “breach of confidentiality” to taking part in this study. See measures taken below.

Costs

- There will be no costs to you for participation in this research study.

Compensation

- You will not be paid any extra compensation for taking part in this study. However, participation will be during normal work hours and you must receive manager approval to take part. Contact Susan Genden at _____ if you have any questions.
- There will be a small gift given at the end of the research (value \$10 - \$15) for those completing the study, in accordance with company policy.

Confidentiality:

- You will be identified in the research records by a code name or number. Any identifiers that link your identity with this code will be stored on an encrypted external hard drive kept separately in a locked company cabinet that only this researcher can access. This information will be destroyed once the report is complete. Only the aggregated final report with no identifiers will be shared with the company.

Voluntary Participation /Withdrawal:

Taking part in this study is voluntary. You are free to not answer any questions or withdraw at any time. Your decision will not change any present or future relationships with the Company or with Wayne State University or its affiliates.

Questions:

If you have any questions about this study now or in the future, you may contact Susan Genden at the following phone number: _____. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at _____. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call _____ to ask questions or voice concerns or complaints.

Participation:

By completing interviews and submitting logs and data, you are agreeing to participate in this study.

APPENDIX F

Social Media Use Survey Phase 1

Welcome to the Social Media Use Survey! Participation in this study is voluntary.

Definition:

Social media “refers to online technologies that enable multiple users to interact, generate content, and collaborate in real time or through postings such as images, text, audio, or video, viewed later. Some examples are Facebook and Twitter.”

Survey Instructions:

- Answer questions as completely as possible.
- For multiple choice questions, please check the box that is closest to your own response.
- You must complete each page in order.
- You must click on the FINISH button at the end to complete the survey.

Thank you for participating!

- Checking this box indicates that “I have read the description of the study in the Research Information Sheet and I agree to participate.” (If participants miss this box, the question appears again below.)

To participate you MUST indicate your consent and select YES. If you do not wish to participate, click the CANCEL button or select NO and then click the NEXT and FINISH buttons.

- Yes, I have read the description of the study in the Research Information Sheet and I agree to participate.
- No, I do not wish to participate in the study.

Please provide the following demographic information:

- Check here if you would like a copy of the final report

1. Your Age range is (select one)

- 25 or less
- 26–35
- 36–45
- 46–55
- 56–65
- 66–75
- 76 or more

2. Gender (select one)

- Male
- Female

3. Education – highest degree (select one).
 - High school
 - College degree
 - Master’s Degree
 - PhD
4. Outside of work, what language do you write in most often (select one)?
 - English
 - Other (specify your own value)

5. How many years have you been working at the Company?
(Use decimals for less than one year) _____
6. How long have you been working at your present job in the Company?
(Years & months) _____
7. Please select your organization:
 - Information Technology
 - Product Development
 - Other (specify your own value)
8. Please indicate your title and briefly describe your job.

9. Are you participating in the Digital Tool Learning Program (DTLP) within the Company?
 - Yes
 - No
10. List any other digital tool certification program(s) you participate in within the company.

11. Indicate the level of expertise you have achieved within the DTLP or within any other digital tool certification program(s) at the Company.

Now, we would like to know about your use of Social Media Tools outside of work

12. On average, I engage in social media use outside of work (select one):
 - Never
 - 1-12 times per year
 - 1-3 times per month
 - 1-6 times per week
 - 1-4 per day
 - More often

13. Outside of work, I am someone who (if you use it, select one):

- Posts at least 1 or 2 times each month
- Posts at least 2 times each week
- Posts at least 1 - 6 times each week
- Posts to a social media site daily
- Does not post often but reads posts at least 1 or 2 times each month
- Does not post often but reads posts at least 2 times each week
- Does not post often but reads posts daily

14. I participate in the following social media outside of work (select any that apply):

- Facebook.com
- Twitter.com
- LinkedIn.com
- YouTube.com
- Wikipedia.com
- Google+
- Pinterest
- Specify your own value _____

15. Some reasons that I use social media outside of work are:
(Skip this question if you never use it.)

Now, we would like to know about your use of Social Media Tools within the workplace:

16. Below are some social media applications that may be available to you within your Company intranet. Select all that you use. Add names of any others you use in the text box below.

- Yammer.com
- SharePoint MySite - Find the Expert
- SharePoint MySite - Newsfeeds
- SharePoint discussion forums
- Microsoft OneNote (with others)
- Blogs
- Wikis.
- Specify your own value _____

17. Why do you use social media tools at work (within the Company Intranet)?

18. I have the knowledge necessary to use social media at work (select one).

- Strongly disagree
- Moderately disagree
- Somewhat disagree
- Neutral (neither disagree nor agree)
- Somewhat agree
- Moderately agree
- Strongly agree

19. I engage in social media use at work (select one):

- Never
- 1-12 times per year
- 1-3 times per month
- 1-6 times per week
- 1-4 times per day
- More often

20. At work, I am someone who (select one):

- Posts at least 1 or 2 times each month
- Posts at least 2 times each week
- Posts at least 1 - 6 times each week
- Posts to a social media site daily
- Does not post often but reads posts at least 1 or 2 times each month
- Does not post often but reads posts at least 2 times each week
- Does not post often but reads posts daily

21. What do you dislike about using social media at work?

(Skip these questions if you do not use social media, within the Company intranet, at work.)

22. How does use of social media affect your ability to do your job? (You may give an example.)

23. My co-workers frequently use social media for their job-related tasks (select one).

- Strongly disagree
- Moderately disagree
- Somewhat disagree
- Neutral (neither disagree nor agree)
- Somewhat agree
- Moderately agree
- Strongly agree

24. What attitudes have you noticed in your co-workers about the use of social media at work?

25. My supervisor frequently uses social media for his or her job related tasks (select one).

- Strongly disagree
- Moderately disagree
- Somewhat disagree
- Neutral (neither disagree nor agree)
- Somewhat agree
- Moderately agree
- Strongly agree

26. What attitudes have you noticed in supervisor towards the use of social media at work?

27. Your feedback is important. Please add any comments below. Thank you!

APPENDIX G

Orientation Script:

Script: (20 minutes at the participant's office or at a nearby private office space)

Welcome to Phase 2 of this study. My name is Susan Genden. Thank you for meeting with me. As you know, I am working on a research study. We are now going to begin an orientation to the next steps. This study is about social media use.

Definition: Social media has been defined different ways. For our purposes today, it refers to: "refers to online technologies that enable multiple users to interact, generate content, and collaborate in real time or through postings viewed later. Some examples are Facebook and Twitter." Our questions refer to internal applications such as Yammer, SharePoint MySites, wikis, blogs, OneNote, and discussion forums through which people interact, create content, learn, collaborate and post text, images, audio, and video.

The Log:

- As you know, keeping a log is part of the research. Your log is a place for you to document your usage and reactions to your use of social media for informal learning.
- Type in your answers on a form at the end of each workday for two weeks. (*Show a copy of the form.*) This is very important.
- I will email you a copy of this form. You can fill out your log by opening the attachment and typing into it on the computer, saving it in a LOG folder on your computer and emailing it back to me as an attachment by the next morning.
- Please keep these logs updated daily, as it is very important to the understanding of your activities and to the overall research. I will send reminders. Do you have any questions about this part of the research? (Answer questions about procedures.)

I DO need to know your start and end dates. I can print out company-wide Yammer posts at the end of the two-week period. You will not have to do that unless you want to.

About Interview I

Part 2 of our meeting today is our first interview and the interview will begin after this orientation.

Again, the data collected from you is confidential and personally identifying information will be removed. With your agreement, I will record the interviews to ensure accuracy.

About Interview 2

After the end of week two, I will meet with you for a second one-hour interview about your experience, and collect any additional data or print outs of your digital posts and reflections of your social media activity at work. Before we begin the first interview, I want to thank you very much for your participation so far. Are there any questions?
Excellent.

APPENDIX H

Directions for Log

Welcome to your Social Media Log – INSTRUCTIONS

Social media has been defined different ways. For our purposes, it refers to: online technologies that enable multiple users to interact, generate content, and collaborate in real time or through postings viewed later. Some examples are Facebook and Twitter. Our questions refer to internal applications such as Yammer, SharePoint MySites, wikis, blogs, OneNote (shared), and discussion forums through which people interact, create content, learn, collaborate and post text, images, audio, and video.

There are two pages to use in the attached Excel file.

I. Use the LOG sheet each time you use a social media application. It won't take long.

- Select LOG tab. Add date in **column A**. Then, choose the application you are using via a drop down menu in **column B**.
- Then fill in **columns C, D, and E**. Use as much room as you need.

A Date	B Application used (each instance).	C Purpose(s) of social media activity	D Outcomes: What did this use of social media help you accomplish?	E What would you do differently (lessons learned)?
2/24/14	SP Newsfeeds			
	<ul style="list-style-type: none"> Blog Microsoft OneNote (for sharing) Other SharePoint MySite Profiles SP discussion forums SP Find Expert or information ✓ SP Newsfeeds Wikis Yammer 			

2. Next, click on the "Daily" tab at bottom of the Excel sheet to answer one question at the end of each day.

3. Save your file in a folder on your computer, labeling each day's file:

Log_Your number_Date.

For example, use the file name "Log_23_02-10-2014" if 23 is your participant number and you are reporting on activities of Feb. 10, 2014.

4. Email as an attachment to sgenden_____ each day. Make the email "private" to ensure your confidentiality. You're done!

5. Contact Susan Genden at _____ if you have any questions. Thanks!!

Social Media Use Log Page 1

Welcome to your Social Media Log - Page 1				
	Fill in: You are participant #	Go to the DAILY tab when done.		
Please log during the workday for 10 days.	DROP-DOWN list Click on the empty cell in the column below and arrows will appear with a drop down list. You may also type in a choice yourself.			
A	B	C	D	E
Date	Application used (each instance).	Purpose(s) of social media activity	Outcomes: What did this use of social media help you accomplish?	What would you do differently (lessons learned)?

APPENDIX I

Meeting 1: Script and Interview 1 Questions (60 minutes)

Follows orientation meeting in participant's office or other empty office space. (1 hr.)

Note: Questions 1 – 8 below will be asked of the participants in a semi-structured interview format with follow-up questions used to render clarity based on the participant responses. “Phenomenological researchers generally prepare some questions in advance, preferring to alter them if it seems appropriate as the interview progresses” (Rudestam et al., 2007, p. 109).

Script:

We will now begin the interview. As you know, I am working on a research study. I want to reiterate that all research materials and recordings we make today are confidential. With your permission, I will begin recording now. (Begin recording.)

Research Question 1 – not specifically asked, data derived from initial questionnaire and researcher notes from interview.

Definitions: Social media has been defined different ways. For our purposes today, it refers to: online technologies that enable multiple users to interact, generate content, and collaborate in real time or through postings such as images, text, audio, or video, viewed later. Some examples are Facebook and Twitter.

Social media technologies within the company, for purposes of this study, include: Yammer; SharePoint MySite; MS OneNote, blogs, wikis, or discussion forums.

Informal Learning refers to an activity that is “outside of a formal program or class” through which individuals know how to perform at work (Bingham & Conner, 2010, p. 9; Cross, 2007).

Research Question 2

[How does worker perception of role at work impact use of social media?]

1. Thinking about how you experience learning outside of the classroom, informally, describe how you acquire the skills and expertise you need to do your job?
2. Describe how your job (i.e., how you think you should do your job) affects your need to learn from others' skills and expertise?
3. Describe how your job (i.e., how you think you should do your job) affects your willingness to try social media technologies that may increase your knowledge and ability to perform your job better?

Research Question 3

[How does worker perception of the workplace impact social media use for informal learning?]

4. Describe how your *workplace* affects your use of social media? (This might involve tools, attitudes, or any factors that matter to you.)

Research Question 4

[How does the worker experience use of social media tools for informal learning?]

5. Describe how you use social media tools (e.g., blogs, wikis, microblogs like Yammer or others) when you're working by yourself to answer questions, solve a problem, or researching to learn something new.
6. Thinking about the ways in which you collaborate with co-workers and team members on a project, and the technologies that you might use, describe how you use social media tools to share your skills and expertise with others.
7. What would make using social media tools (e.g., blogs, wikis, microblogs like Yammer or others) for learning a better experience for you?
8. Take a few minutes to reflect. What aspects of using social media for informal learning at work stand out for you?

Script

(When time is up) Thank you very much for your time. I will set up another interview for a time when you are done with the logging. In the meantime, please contact me if you have questions.

APPENDIX J

Meeting 2: Script and Interview 2 Questions- (60 minutes)

Face to face meeting in participant's office or other empty office space (1 hr.) after the two-week logging period.

Note: Questions 1 – 10 below will be asked of the participants in a semi-structured interview format with follow-up questions used to render clarity based on the participant responses. “Phenomenological researchers generally prepare some questions in advance, preferring to alter them if it seems appropriate as the interview progresses” (Rudestam et al., 2007, p. 109).

Script:

As you know, my name is Susan Genden and I am here for our scheduled interview, the last step for you. It will take about 1 hour. With your agreement, I will start recording now. (Waits for an affirmative response.) (Begin recording.)

Again, all comments and recordings are confidential. Do you have any questions?

Prior to the second part of the research, I sent you an email with a log attached and asked you to keep a log of your social media activities and thoughts each day and to email it to me each day. Have all those logs been completed and emailed? If not, it is important to complete them and email them to me. Are there any questions? (If yes, answer questions. If not, continue.) Now let's begin the final interview.

Research Questions

1. From right after our interview 1 - were there any additional thoughts about our conversation or about anything that you would like to share?
2. I suggested when you finished the logging period, you write down your thoughts about your overall experience of using social media at work. If you did that, please describe thoughts you had then.
3. How did the logging work out for you? (Review log)
4. How does this experience, since the first interview and the logging, compare with your experience of using social media before this research started?
5. What surprised you the most during your two-week logging about your social media use
6. Is there anything else that stands out for you now about using social media at work?
7. Are there barriers in getting a Yammer group or OneNote, or whatever tool might be best, going for your team If so, what are they?
8. Can you say anything about online relationships? (Would you say that there are mentoring relationships online, or more of a general sense of people helping other people or just people conversing? Or all or none?) Please describe.
9. What would you say to others about getting started using social media?

10. Is there anything else you would like to add?

SCRIPT: We have completed the interview. Thank you very much for your time and assistance.

APPENDIX K

Researcher's log: Excerpts of reflections and observations

January 5

It is important to talk about my own perceptions of “social media use for informal learning in a corporate environment” before I go much farther. As I said in my proposal, as an instructional designer I design training and learning solutions for knowledge workers. I have faced the limitations of online formal courses in my own work. My task is shifting in part to a facilitating, partnering and support role, as some workers have less time to take long courses and also find it difficult to apply what they have learned (in a course) to a real work situation. They need access to timely information.

I am also deeply engaged in a social learning implementation project in my job so this topic is very familiar to me. I believe in it. People have always learned from others. As the distance between employees grows, so must communications. Like others, I also use social media for informal learning outside of work. I believe that connecting with others whom I do not now know is important, as it provides a link to new sources. I learn things I would never have learned from those more immediately around me. I clearly have my own feelings about connecting with those far away via digital media to learn and to share information. I will endeavor to put my own views aside and to listen to my participants' stories with fresh eyes.

It is important to enable workers to give voice to their own reflections and perspectives even though they are in a corporate environment. There certainly are limits to voice in a corporate environment. Since I am a participant as well in this research, it is also important for me to carefully record my own voice throughout this project. The goal is to hear the voice of the worker throughout the research, as well as through use of the actual social media that is being studied in order to have a better understanding of how we use these tools.

Monday, Jan. 27

It has been another week of working on the survey, testing, refining, and testing. In SharePoint, I discovered that the branching seems to have set up some glitches, so I have reworked it and have to get it out at the beginning of this coming week.

Wednesday, Jan. 29

I had sent out 17 email requests for participation in PD around 11:30 a.m. Within 20 minutes, I received four responses showing interest. I added these people to the SharePoint survey permissions and I sent out the email to the survey with the Research Information Sheet attached. By the end of the day, three surveys had been taken. So the response was 5 out of 17 showed interest from this group (PD) and wrote back to me on the first day and three took the survey right away.

Thursday, Jan. 30

On Thursday I was ready to send out the email to the other group, IT, and I had 44 names for this group. I sent out the email in the morning (blind email) and by noon had

five emails return showing interest. By the end of Thursday I had four surveys filled out from the IT group on the first day.

Friday, Jan. 31.

I will send out another email next week reminding the initial list of people that I am still seeking participants. I hope I can get more responses! Pretty soon I will be sending out follow up emails to inform people I will be scheduling for Phase 2, along with preparing my recording tools, and doing orientations, then interviews.

Feb. 12

Set up 3 orientation and interview meetings for next week (starting 2-18-14). Need to add one more meeting that week and set up more for following week.

Feb. 13

Have 12 participants now, would like to get 2 more.
I will send out requests for more participants tomorrow.

Feb. 14

Today I sent out last thanks yous and said Phase 2 is coming.
Total will be an additional 19 more emails sent in addition to 61 already sent.
Did it! 2 more took the survey for a total of 14 surveys out of 80 sent.

Feb. 19

More interviews scheduled for next week – Feb. 24 - 28 (eight scheduled). Seven scheduled now. That leaves 3 - 4 more to do for the following week (March 3 – 7). It takes lots of time to schedule interviews and conference rooms and travel time on top of my regular job.

Feb. 22.

After working on getting the logs for the participants done correctly all week, I realize that a dropdown list in Excel is fine for the application, but that a drop down for task is not a good idea. That would be me defining responses. It should be more open-ended than my suggestions would be. These descriptions should come from them. So I won't use this dropdown after all. What then do I want them to log that makes it easy for people to answer yet gets the answers? So I changed and simplified the log, working on a job aid now. This is, after all, more of a phenomenological approach. What are their experiences and perceptions after logging? Interview 1 got the background. Must have all ready for Monday, so still working. I am learning as I take each step. One experience leads to another insight for the PI.

Feb. 24.

Today I conducted three interviews. I emailed logs to people. There are four more interviews to do this week, then four the following week. I have to track logs coming in from all people and have to set up follow-up interviews. This is time consuming work. And I have not even begun to transcribe. At first, I found myself nodding enthusiastically over some responses and surprised by others. Must be careful to keep my body language out of it and just listen to the "other." Interviewing is not an easy task.

March 4

Today I interviewed the 11th participant. It is not an easy task to hear the participant without one's own point of view. I am getting better at it. There are two more people to interview tomorrow and one on Thursday. Then we begin interview 2 next week.

I do not see lots of reflection on the logs so far. I am concerned about the time lapse from when they stop logging and the final interviews begin. Will they lose what they have thought about or learned? Shall I add a question to the last day to post about the entire experience at that time? (DONE). Otherwise, things are going smoothly.

March 5

I sent out three emails with the following message: "As you approach the end of your logging period, please reflect on your entire experience and summarize any thoughts or feelings (on page 2 of your log) while these thoughts are still fresh. We will discuss this when we meet for our final interview."

I did this because there is going to be a lag between when they finish logging and when I can interview them after logging due to my own work schedule. We will discuss their reflection comments at the 2nd interview.

March 10

Prepping for the first of interview 2s. I have small gifts. Questions are more freeform, based on a phenomenological approach.

March 14: Notes directly after interviews

Okay I've been in interviews with two people today,

- The last participant I just saw today. #9, said they had been using social media for years but after logging, became more "mindful," more aware of how they were using it and this experience made the participant want to try to use it more. Participant is very interested in helping others learn. When this participant needs to learn, looks to colleagues. Participant thought they could help implement more effective sharing and collaborating and said they were more motivated. As opposed to others who were going to use it less, #9 described being more active in implementation with OneNote specifically.

March 15: Notes directly after interviews

- I met with participant #10 and the reaction was also different. Participant had not realized how important it was to help people in this way. #10 realized how each post can really make a difference in a person's life. Participant gave an example of some posts and was more committed than ever. Participant also said there was a social component. When #10 wants to take a break from work, it is important to be able to go to Yammer and see what is "happening" in the company, like a newsbreak.

I didn't know what I was going to find, or even look for after the logging period. It now seems that people are telling me that being aware of what they are doing on Yammer, the awareness and mindfulness of the experience has made them more aware of their own reasons for using Yammer and they are finding things out that they didn't know before about their own use.

March 16

Interesting that so far this experience is making me more aware of how and why I use social media and I find that rather than just posting links of information that I find valuable, something I usually do in social media, I wish that I could be more specifically helpful to others as well.

March 22

Completed the second week of follow up interviews. People are using the tools to different extents and all take different approaches. Some posted relatively little. All perspectives have value. I wish the logging could have been longer, but think participation would have been even less. There were definitely constraints. So far, no one has printed out his or her yammer posts.

Next week I have four more interviews to prepare for. I am now in the transcribing process and just trying to review the earlier interviews before I do the second interviews. This has not always been possible. Just got some new transcription software so will see how this helps.

March 30

I ended up with four interviews done. Some people are remarkably interested (again, a judgment from me) in helping others, very committed. One participant described herself as always having been a teacher. It will be interesting to see whether there really is a pattern or a “blueprint” for such users. No idea until I have analyzed the material and there is a lot there.

April 5

Most people thanked me for letting them participate, even before I gave them a new flash drive and biscotti at the end. I find it remarkable that these people really wanted to help. Now, I must get to the work of getting the transcriptions done. One more interview to do on Monday. This is a milestone for me.

All participants contribute data, and this is what the research is about. Hard but important to step back (epoche) and let them speak for themselves and hear what each participant has to say “with fresh eyes”.

April 11

Work on the transcriptions is slow. I thought about paying someone to do it, but in the long run, if I can handle it, I have another opportunity to allow the material to sink in. I think it would be better for me to review it this way. Data collection was hard work, in addition to my regular job. I am lucky that the content is so complementary to my day job, and that how people learn is part of what I am doing at work as an instructional designer.

May 29

The transcripts are almost done. I have finished $\frac{3}{4}$ of them, around 800 minutes, and the transcriber is almost done with another 350 minutes or so. Time to start analysis. I have

two sets of interviews, logs, and my log, a lot of data. Overwhelming. Reviewing analysis methods and setting up documents now.

June 8

I finished printing out interviews and putting them in a big binder for review and markup. Have preliminary CODES based on general research questions. Now, must reread for a sense of the whole.

Regarding my own voice in this research: This research is really borne out of my own sense that we, the workers and learners, now have opportunities to give voice to our own questions, direct our own learning, and affect our own ability to learn in timely ways never possible before. Social media is transformational in that messages are not solely top down anymore. Messages travel everywhere across the globe.

June 22, 2014

Have almost finished reading and first coding run through of Interview 1s of all participants.

Phenomenological approach:

What is the lived experience?

- What is the texture of it for the learner?
- What is the structure of it within the complexities of a working environment?

Reflections by the researcher are part of the phenomenological research experience. Each step has been a difficult one. From my defense, to IRB approval, through preparation of the survey for participants, to selecting and contacting participants, to scheduling meetings and having my questions and recorders with me, and so on. I approached with an open mind. Each participant was different and each interview was different. I came prepared with the potentially mundane questions about using social media for informal learning, and yet adjusted each interview to the interviewee, leaving question open for people to respond as they wished. Some had more to say than others. I followed up on responses. I feel if I just asked them to talk about their experiences I would not have heard more than a few lines. Many talked more once they started. But having the questions in front of me helped me have the conversations with the participants.

In each case I left with a sense of gratitude that busy workers took time out of the workday to help me collect data for my research. Even as I conducted the research, I realized that those who participated confirmed their beliefs in knowledge sharing by sharing with me. I was moved by this realization.

Unfortunately, I tackled the task of transcribing on my own and it was overwhelming, even though I came to know the material and people even more through this process. Now it is time to find out what is the core of the experiences.

Per Creswell (2013), my task is to

- Have own description of personal experiences with the phenomenon under study.

- Develop a list of significant statements. How are people experiencing the topic? Horizontalization of data, treating each statement equally, and then working to remove repetitive statements.
- Group significant statements into meaning units or themes
- Describe “what they experience” – textural description
- Describe “how” the experience happened, structural description, including setting and context of the phenomenon.
- Write a description that incorporates both, this is the “essence” and tells people what and how they experienced the phenomenon.
- Four guidelines for reflection are: space felt, physical presence, dimensions of time and relationships.

Sample of more post interview notes

#4 Participant considers self to be technically astute and knowledgeable. Says he receives recognition through Yammer, though not much in his job. After logging, he says nothing changed, experiences Yammer the same way. Expressed concern about other’s perceptions of time he is spending on Yammer.

#5 Participant uses Yammer to help others and to find information, but not related to job specifically. #5 also uses it socially, for a break. Not much opportunity in the building to interact with others. Says nothing changed in practices during logging. Didn’t want to be influenced by the research and keeping a log.

#6 Participant was a fairly active user, indicated that nothing much will stop him from using Yammer. After logging, said he was posting less, steps in if answers are wrong. Finds it valuable socially as well, says it helps find career information, now has more useful contacts.

#8 Participant offered very precise views on how #8 saw the purpose of Yammer as building relationships and helping in location of expertise, not so much aggregating content. The search capability is “not great.” There is a lack of integration within the company regarding software. Participant commented on wanting to help in the research at the end.

July 5, 2014

Self- reflection: I expected the process of writing this dissertation to be about the transformative learning experiences of my participants. However, it is turning out to be about my own transformative learning process. Working on this research within a corporate environment certainly changes one’s perspective since the point of learning at one’s job is improved performance, not just learning... How do my questions contribute to finding out what the experience means for others? Working with engineers and information technology professionals, it was important to draw people out in ways that might not have occurred with one or two open ended questions. Nevertheless, these people, already experienced in social media use, did speak, and from these people, I

have gained some understanding of their lived experiences and what they gained from their reflections.

To my point of how digital tools help you learn, my learning more about digital tools like Word and Excel is helping me work with the vast amounts of data I have collected. Everything from using styles in Word to using filters in Excel to handle data has been a learning journey for me.

July 13

I spent the weekend reading about data analysis, especially per phenomenological approaches. Many of these analyses are done with 3 – 6 participants and I have fourteen. Also, some questions are about factors, but this needs to be understood as viewed through participant perceptions and experiences. It is all based on lived experiences of the worker.

August 23

Finished reviewing logs this week and that helped get a better understanding. Some people didn't record browsing time; they just kept the window open all day. Other's may have posted most things but recorded at end of day or next day or two. Recollections can be incorrect, so the logs can only give a sense of what people actually did.

Some points raised:

What does "social" mean? People bring their preconceptions of what social means to the workplace. It can have negative connotations.

- "That team itself is learning from each other and sharing knowledge... but now that I'm present to it, I'm sharing with them what kind of knowledge I may have as well." (15)
- "Collaborative' versus 'social' is... you know, 'collaborative' is 'social' whereas I think for me social has always been like Facebook; sharing what you've done." (16)

Wanting to help others: A common sense of wanting to help others among participants:

- "I just feel that people have so much in them, and they're not sharing it. ...People use social media to talk, to express their work tips, any life experiences, something that could help someone at their work, so I think that feeling got stronger in me." (11)

Around guidance: "there's got to be some, some sort of structure or guidance. What's the corporate strategy for this because they want that knowledge to live." (15)

Time: "It can save you tons of time! (Laughs) It helps you become more efficient, and it helps you make connections where you didn't have connections before. You can find information and SMEs much more easily than you could in the past. ... we need that cultural change. ...it's getting to that critical mass that still needs to happen." (16)

Oct. 7, 2014

I'd say it's been tough. I have learned so much from this research. One takeaway for me has been the generous character of the participants themselves. The meaning of social media participation for these individuals is that they like to learn and share and they are caring, collaborative people. These participants go out of their way to help others learn, whatever the incentives may or may not be, and sometimes with little time to do it, in the virtual space. They advance learning within this company.

I feel deep gratitude to my participants for the time and reflections they have contributed to enhance this learning project. I have been inspired. I have used social media at work for my own purposes and to post things of interest to me. This experience has taught me to extend myself more and take the time to help others learn more often.

These participants indicated that they wanted to help me with this study. Some people hoped very much it would make a positive difference within the workplace, and they were excited about it. I hope that this study does make a difference and informs practices of learning professionals and leaders within the corporate environment. This issue is even more critical because workplaces are now making decisions about investments in enterprise social networks.

APPENDIX L

My Epoche

The epoche was described by Husserl as part of the research process in which one sets aside previous judgments and looks at the world openly as if anew (Moustakas, 1994). The epoche process is considered part of the Phenomenological Reduction in phenomenological research. I used Creswell's (2013) version of Moustakas' (1994) methodology of analysis. Creswell calls for the researcher to give a "full description of his or her own experience of the phenomenon" at the start of the data collection in order to "attempt to set aside the researcher's personal experiences" (2013, p. 193). Creswell acknowledges the difficulty in completely setting aside one's own experiences (2013). I had already been exposed to phenomenology during my experiences as a student at Sonoma State University in California some years ago. However, I found Creswell's description of how to engage in the epoche process to be the clearest and most useful to me at this time. By describing my own perspectives here, I am attempting to become aware of my own views and to separate those from those of my participants or co-researchers. This is an ongoing process throughout the research experience. Findings are based on looking with fresh eyes at rich descriptions from participant interviews and logs.

My own perceptions have been formed by my experiences. I have been interested in emerging technologies as far back as I can remember in my adult life. Like others, I also use social media for learning outside of work. I believe that connecting with others whom I do not now know is important, as it provides a link to new

information and new, trusted sources. I learn things I would never have learned from those more immediately around me.

A powerful example of the benefit of connecting with others online took place in 1999 for me. Via a listserv (this was not considered “social media” at the time), I had located people online with dogs that had Cushing’s disease as mine did. Through the knowledge and support of the people on that list, I found out about medications that were being used to fight this disease legally in England, but the drugs were not approved in the United States. There were many obstacles. I worked with my veterinarian to obtain the drugs. In the end, the drug worked successfully and my dog went into remission without the harsh treatments being used in the U.S at the time. I received additional information and emotional support from this listserv for my dog three years later when he became sick with a form of cancer. Through the list-serv, I found unique treatment for him. As a result, my dog, a standard poodle, died at the ripe old age of fifteen of something unrelated. I learned some valuable lessons about finding information that I could not have otherwise known. Because of this listserv, I felt incredibly connected to people I never met. This was a moving experience.

I have been a graphic designer, website developer, trainer, and faculty member. I have worked at Harvard on the east coast, and Sonoma State University on the west coast. Somehow, my path has always involved learning and education. In more recent years, I returned to school and become an instructional designer. In the process of taking courses I focused on emerging technologies and remember my appreciation at using tags at delicio.us, working on interactive websites, and discovering Twitter, where one had the ability to find new connections anywhere in the world and share information. By

2010, I was committed to this mode of communication and knowledge sharing and gave a presentation at the International Society for Performance Improvement on “What the Human Performance Technologist Should Know About Twitter.” I constructed a blog about Twitter, and developed collaborative websites using Google sites. I earned a graduate certificate in Communication and New Media, studying underlying theories and learning new practices in the world of new media and two-way, many to many conversations.

As an instructional designer today, I design training and learning solutions for knowledge workers using a variety of online technologies. I have faced the limitations of formal online courses. My task is shifting as some workers have less time to take time consuming courses and also find it difficult to apply what they have learned in a course to a real work situation that may occur months later. Workers appreciate timely access to information, with learning opportunities beyond classroom events. I help to provide that by use of newer applications and other learning supports.

I believe we are seeing a transformational change in learning and in communications. Change is happening outside of the workplace and the workplace is being affected by these changes. People have always learned with support from others. Now we have digital options and our communications link us globally. In addition, capture of knowledge through digital tools, within the company intranet, has even more importance as the workforce changes and new people come, with less experience. Workplaces are now making decisions about investments in enterprise social networks. Adoption and change in big corporations can be a slow process. The opportunity is there to build supportive relationships and to learn what we need to know, when we need to

know it, during the workday. If this study provides findings from the worker perspective that can improve learning and performance, it is important to hear these voices. This phenomenological approach respects the worker voice.

I am aware that I am a participant as well in this research and it is important for me to carefully record my own voice throughout this project. I have my own views about connecting with those far away via digital media. I will endeavor to put my own views aside in order to listen to my participants with fresh eyes and ears.

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ABSTRACT**WORKER USE OF SOCIAL MEDIA
FOR INFORMAL LEARNING IN A CORPORATE ENVIRONMENT**

by

SUSAN N. GENDEN**May 2015**

Advisor: Dr. Monica Tracey

Major: Instructional Technology

Degree: Doctor of Philosophy

In the global workplace, workers must quickly adapt to changing information and productivity demands. Workers must filter information, avoid overload and find out what they need to know. How can use of social media technologies benefit the knowledge worker and the corporate workplace? This study presents a closer look at the use, perceptions, and reflections of active social media users within the corporate environment. The purpose of this study was to examine, through worker voice, factors in worker use of social media that lead to successful informal learning outcomes in the corporate environment. This qualitative research used a phenomenological methodology. The criterion-based sample consisted of 13 knowledge workers within a top Fortune 500 global manufacturing company. Data collection methods included a survey, two interviews and logging of social media use. Social media studied included applications available to workers within the company and included Yammer; SharePoint blogs, MySites, forums, wikis, and collaborative sites; and Microsoft OneNote when used collaboratively.

Findings were based on a synthesis of the textures (verbatim statements) and structures (contextual descriptions) of participant experiences that led to the emergence of themes. Data

analysis indicated that characteristics, roles, and the workplace environment are factors that mediate use of social media for informal learning in the corporate workplace. Worker characteristics such as strong technology skills, self-direction, leadership, and caring about learning effectively contributed to successful social media use. Job roles and social media roles also mediated use, providing differing incentives for participation. Job roles that included social media use and approved digital coaching tended to enable participation. Among participants with job roles that did not require social media use, there were other incentives (e.g., socializing, recognition, building influence). However, lack of time to participate was more often a limiting factor in these cases. Environmental factors such as colleague and management attitudes of non value, lack of leadership participation and guidance, lack of tool awareness and effectiveness, lack of time, company use policies, online "noise" and other factors were perceived as constraints to social media use (particularly Yammer use) for informal learning within the company.

Data analysis also indicated that the main theme or essence of participants' lived experiences concerned connection with others and what those connections provided, whether it was interactions, effective learning support, better teamwork, or searchable knowledge. Additional findings indicated these participants perceived value and meaning in communicating with others globally, learning efficiently and effectively on the job, and collaborating with others through the social media tools which then provided resources for others. Participants expressed both disappointment at the current state and hope for a larger, growing learning community as workers with more technological skills joined the company over time. Opportunities to log and reflect on their social media use led to more awareness about effectively using social media. Theories on self-directed learning (Knowles, 1975), social

constructivism (Richey, Klein, & Tracey, 2011), the Zone of Proximal Development (Vygotsky, 1978), and the Ecology of Meanings communication model (Campos, 2007) provided a framework that supported these findings.

Most workplace social media studies have not focused on learning, but rather on motivation and communications using different methodologies and sample selection criteria. This study confirms much of the current research on social technology use within the corporate environment and extends findings to provide a more focused study about informal learning based on worker voice. This research is intended to inform instructional designers, learning professionals, learning leaders, corporate learning and technology decision makers, and those with interests in enhancing learning within corporate environments. Additional research is needed to further guide strategies and creation of learning environments that contribute to informal learning.

AUTOBIOGRAPHICAL STATEMENT

Susan N. Genden

I learned about phenomenology, in which voice is so important, as a student at Sonoma State University in California, where I earned a B.A in Expressive Arts. Later, I earned an M.Ed. in Instructional Technology and a Graduate Certificate in Communication and New Media from Wayne State University. After earning my B.A., I established my own company, providing graphic design, website design/development, and training. I also worked as an adjunct faculty member, and instructional designer, with the last seven years as an instructional designer/performance consultant on contract at Ford Motor Company.

During my PhD program in Instructional Technology at Wayne State, I pursued my interest in emerging technologies. I discovered Twitter, along with other social media technologies, and saw in it possibilities for learning. By 2010, I had given several presentations on Twitter to the International Society for Performance Improvement (ISPI). That interest soon led to this research. I design training and learning solutions for knowledge workers using a variety of online technologies. Workers need timely access to relevant information and experts, and to continuous learning opportunities. I believe we are seeing a transformational change in learning and communications and in the roles of learning professionals. Change is happening outside of the workplace and the workplace is affected as well. People have always learned with support from others. Now we have digital options that link us globally, and we have more control over where and when we learn. Meanwhile, the workforce continues to change as new people come in, with new experiences, ready to use the latest technologies to find needed knowledge and expertise. Learning professionals must welcome this change, provide more resources, and develop strategies to enable agile, participative learning solutions.