Professional Learning in Cooperative Extension: Understanding Opportunities for Social Learning and the use of Computer Mediated Technologies

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Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Doctor of Philosophy
In
Agricultural, Leadership, and Community Education

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September 10th, 2018
Blacksburg, VA

Keywords: Community of Practice, Social Learning, Computer Mediated Tools, Adult Learning, Cooperative Extension

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ABSTRACT (Academic)

Through social collaboration, adult learners are able to participate in collaborative learning opportunities with their colleagues. These collaborative efforts between learners contribute to their ability to learn by way of creating experience and engaging in practice. Through social engagement, learners actually find themselves collaborating in Communities of Practice.

Collaborating in a Community of Practice allows adult learners the opportunity to work and collaborate while developing a shared domain of common interest within the workplace. The learners are not only able to engage through social context, they are able to engage in opportunities for learning contributing to process of learning which encompasses experience, practice, becoming or identity, and belonging to the actual community. The concept of social learning within a Community of Practice primarily occurs through the experiences of the participants and actual participation within the social activity and also involves the process of meaning making between adult learners working toward a similar goal.

As virtual learning continues to become more prominent in the workplace in an effort to help adults collaborate, learners will need to continually generate a network of communities to engage in practice. Within social settings such as the workplace, adults realize that learning does not always take place in formal settings such as structured trainings or other formal environments. Social learning has no set of standards or guidelines and happens naturally through collaboration and conversation of learners. Facilitated by the use of computer mediated

tools, virtual opportunities will continue to provide adult learners with learning opportunities equivalent to that of traditional approaches. While the use of technological opportunity may present disadvantages for the learner, there is still an opportunity to enhance learning opportunities while adults are at work. Technology has guided opportunities for adult learners to build new knowledge and collaborate at a distance.

Qualitative methods were utilized this study which generated themes that were central to "learning through collaboration," as well as "practice through central processes" which spoke to the fact that participants attributed collaboration to their overall experience related to social learning. In relation to central processes, participants shared discussion relating to the need for evaluative measures to map impacts which are directly related to the implementation of Action Plans as well as the need to assess the generative needs of extension professionals. This study also generated findings central to the use of computer mediated tools within Extension. Although participants indicated that these tools offer an additional approach to collaborative learning opportunities within the field, there were issues of discontentment with the use of technology in regard to level of comfort, non-verbal engagement and even lack of communication due to parameters of the technology.

ABSTRACT (Public)

Social Learning in the workplace can encompass many things. In social environments, adults are constantly communicating with their colleagues and actually participating in an exchange of shared knowledge. As virtual learning continues to become more prominent in the workplace in an effort to help adults work and collaborate, learners will need to continually generate a network of communities to engage in practice. This study utilized the theoretical framework of Wenger's social theory of learning as a lens for identifying experiences contributing to social learning in the workplace and to what extent technological tools contributes to those collaborative learning opportunities. Qualitative methods were utilized for this study which generated themes central to "learning through collaboration", and "learning through system processes". There were also findings that related to the use of technological tools and specifically related to how they contribute to opportunities for learning. Extension Professionals including Extension Agents and State Specialists were recruited for participation.

Acknowledgements

"There will be obstacles, there will be doubters, there will be mistakes, but with hard work, there are no limits."

~Michael Phelps

I wouldn't be true to myself if I said the road to completing this degree has been all smiles! However, I quickly realized that without a circle of support from family and friends, the experience would have easily gotten the best of me. Prior to beginning this process, I remember feeling a wave of emotion which encompassed feelings of doubt, fear, and even feelings of resentment. I remember a conversation with my mom and I began to express to her all of the reasons why I should just leave and go back to my so called "normal life", she began to tell me all of the reasons why I should see this through. Sometimes, it only takes the gentle, calming voice of Mom, to make you forget all about the doubt and fear that you have placed upon yourself. Mom, I acknowledge you for being my strength, my cheerleader, and my listening ear when I felt as though all the odds were against me.

To my Dad, I remember the very first conversation I shared with you prior to submitting my application for admission. I remember discussing with you the benefits of the program and that I felt as though it may be a great move for me both personally and professionally (before the emotions were present). During that conversation, while I knew this was a great opportunity, I was only seeking your approval and needed to hear you say, "go for it." As an adult, I still acquire your opinion on everything! Thank you for pushing me to step outside of my comfort zone, and for constantly pushing me to challenge myself. Thank you for encouraging me and always instilling in me to take advantage of every great opportunity that is placed before me. Your wisdom and guidance are very much appreciated.

To my brothers. Throughout this process, I have truly gained a greater understanding of the phrase “My Sister’s Keeper”. You guys have been my motivation, my moments of laughter over a simple phone conversation, my sounding board when I needed to chat and a few of my biggest fans as I have transitioned through this program. I can honestly say, there hasn’t been a moment that I’ve reached out and you all didn’t respond. From a quick text message just to ask if I needed anything to a phone call in the middle of the day just to ask, “what are you doing”, I appreciate and love you.

My nieces and nephews, you all are the reason I have worked so hard and will continue to press forward. I want you all to know that “anything worth having is worth working for”, you can achieve anything your heart’s desire if you have the will power and the drive to work hard. Continue to reach for the stars, set goals and never settle. Never allow anyone to tell you that you can’t, always remember that you can. Continue to grow and excel and make me proud. Alexis, Emory, McKenzie, B.J. & Miles, you all are amazing! Continue to know that I will always have your back and support you just as you have supported me throughout this process.

To my extended family, thank you. For all of you that whispered a prayer for me, that listened to me while I may have complained about things that may have been so small all though I thought they were mountainous, thank you. One of the life lessons I’ve learned while trudging through this program is that you must have a strong support system, without the support of friends and family, the race to the finish line may seem impossible!

To my AWESOME committee members, THANK YOU! To my advisor, your guidance and patience throughout this process has been amazing! You are “simply the best”!

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List of Abbreviations

PT Program Team
TEL Technology Enhanced Learning
CoP Community of Practice
VCE Virginia Cooperative Extension

Chapter One

Introduction

Social learning takes place in many entities. Wenger (1998) suggests that "learning does not always take place in the classroom or any other formal settings and has no official guideline to how or when it occurs" (p. 212). For adult learners in the workplace, collaboration and opportunities for knowledge sharing and practice happens as individuals are discussing similar topics of interest. Although the workplace presents more of a less-formal environment due to the presence of structured tasks, there is still room for information sharing between individuals. Even though opportunities for learning typically are more so generated in a face-to-face setting, the use of technology provides an approach to thinking and practice that is accessible at any given time. As virtual learning and virtual communities continue to become more prominent in the field of workplace learning, adult learners may consider this as an option to allow them to collaborate and learn with others.

Exploring Computer Mediated technologies, which are tools that offer engagement opportunities for professionals to collaborate (Beldarrain, 2006) such as video-conferencing, video-chatting and e-mail allow learners the opportunity to not only collaborate with their peers and clientele at a distance in an in-formal setting, but also in the role of professional development. Professional development is defined as professional learning utilized to improve professional knowledge and effectiveness (Eraut, 2002). Virtual professional development opportunities are considered more of a prevalent approach to training efforts transforming the way adults work and access information and according to Sobrero & Craycraft (2008), adult learners are becoming more familiarized with this distinct form of learning.

When thinking about factors such as access to professional development, and even budgetary concerns of the Extension organization, it's imperative to think about alternative measures to explore new approaches to efficiently deliver developmental content (Sondgerath, 2016). The use of these technologies for professional development are consistently being measured regarding cost efficiency and its ability to assist adults with learning new practices and getting work done (Sondgerath, 2016). Studies have shown the current Extension professionals engage in professional development utilizing online tools, such as webinars, and even blended learning environments where the content is relayed through modules and discussed at a later time, face-to-face (Garst, Baughman, & Franz, 2014; Cater, Davis, Leger, Machtmes, & Arcemont, 2013; Senyurekli, Dworkin, & Dickinson, 2006). While Extension professionals believe that utilizing computer mediated technologies for professional development permits advantages for their own professional learning, this approach also better prepares them to deliver their own initiatives in that manner (Lobley & Ouellette, 2013).

Because of computer mediated technologies, adults are provided with learning opportunities equivalent to that of traditional face-to-face modes of instruction. While there may be some disadvantages associated with the way in which participants access and use these tools, there are opportunities to facilitate practice and complete tasks to build new knowledge and collaborate. As discussed in chapter two, this approach allowing adults the opportunity to collaborate with others has the potential to encourage the way by which adult learners receive, interpret and apply knowledge to their everyday responsibilities and practices within the work place (Greenhow, Robelia, & Hughes, 2009). While globalization has afforded this opportunity for adult learners to collaborate and share knowledge and resources virtually, the recognition of Communities of Practice has presented an approach to learning which allows groups of

individuals who share a commonality surrounding an idea to come together and collaborate (Wenger, McDermott & Snyder, 2002; Wenger & Snyder 2000) which is an effective, yet, innovative way to generate and distribute knowledge in online settings. Utilizing computer mediated technology can effectively support the collaborations and practice, ultimately encouraging continued communicative efforts among the learners and also freeing them from constraints of time and space.

Considering the rate at which these computer mediated technologies such as video-conferencing and webinars have contributed to opportunities for learning and collaboration in the workplace, it's imperative to continue providing these opportunities to individuals that are often times not able to interact due to distance. It's also important to reveal opportunities for learning and collaboration to these individuals ensuring that we are not limiting opportunities for learning and engagement particularly in the workplace. Therefore, the purpose of this dissertation was to identify adult learner experiences contributing to social learning in situated learning spaces for professional development and collaborative learning with the inclusion of computer mediated technologies in the workplace.

Cooperative Extension

Within Cooperative Extension organizations, adults are constantly networking and collaborating with their colleagues and may find themselves operating in multiple spaces both, physical and electronic (Kimble, Hildreth, & Wright, 2001), as the workplace permits a multitude of components which can contribute to learning (Wenger, 1998). Today, face-to-face collaborative work including professional trainings or webinars relies upon the use of electronic follow-ups with colleagues and clientele to keep everyone connected and engaged (Sobrero,

2008). Because of this transition, the nature of the work exhibited by Extension professionals has somewhat changed (Sobrero, 2008).

The use of computer mediated technology in Extension has become more prominent for adults. In the past, this organization was structured as more of a traditional market for teaching and learning with facilitators and participants engaging in what was seen as ‘traditional approaches’ to collaboration (Laal, & Laal, 2012). These traditional approaches include fully engaging in face-to-face learning opportunities. Recent studies have shown that within the Extension organization, there’s been an increase in the utilization of computer mediated technologies to implement professional development opportunities and disseminate resources among clientele and colleagues. Examples of these technologies include videoconferences (Pankow, Porter, & Schuchardt, 2006), electronic newsletters (Westa, Broderick, & Tyson, 2005), online communities (Kallioranta, Vlosky, & Leavengood, 2006; Schlager & Fusco, 2004), and curriculum and training materials on Web sites (Dunn, Thomas, Green, & Mick, 2006; Mayfield, Wingenbach, & Chalmers, 2006; Penuel, Bienkowski, Korbak, 2005; Zimmer, Shriner, & Scheer, 2006). Ruppert (1992) stated "Extension educators cannot escape the computer revolution and will be challenged in their roles with the responsibility of helping people understand and make the best use of such technology" (p. 4). As the progression of technological enhancement continued to evolve, Albright (2000) stated that knowledge was now a major focus of the economy and that a change to "incorporate the technology required for the dissemination of knowledge" (p. 11) is more so important within an organization like Extension that operates as an organization who provides knowledge.

Although advancements have been made in regard to the presence of these computer mediated technologies for Extension, there are still areas of concern regarding how these technologies facilitate learning as well as identified barriers that are associated with the implementation of these tools. The Extension organization extends across an expansive span of individuals within their designated community. As the organization considers implementing these tools for computer mediated learning, it's essential that the organization is fully aware of the potential underpinnings that are associated with the approach. Not only do Extension staff need to ensure that they are able to access and use the various tools, but also that their audiences are able to access these various digital tools. The ability to utilize these tools specifically for learning within the organization is often times viewed through the lens of a visible digital divide or a gap present between learners who can affectively use the computer mediated technology and those who cannot use the technology (Norris & Conceicao, 2004; Shelley & Thrane, 2004; Warschauer, 2003). This recognized divide refers to access to the computer mediated technologies of Extension colleagues and clients (Elbert & Alston, 2005).

Additional studies have shown that time, money, and training remain key barriers and constraints to adopting technology and that some faculty/staff have difficulty grasping the concept of a "virtual Extension office" or "virtual program delivery" within the office. In these instances, some Extension staff ultimately believe a physical place is a necessary part of their work and getting their job done and may be resistant to change which includes the use of computer mediated learning tools (Diem, Hino, Martin, & Meisenbach, 2011).

Collaboration at a Distance

Extension professionals are so widespread that in an effort to collectively collaborate and work together to accomplish work-related tasks, it may be necessary to incorporate computer mediated tools. As working environments for adults have become more prepared to handle the operational shift in the way adults currently work and collaborate with each other and with clientele, more opportunities for the development of Communities of Practice with the inclusion of technology will become a greater focus of the workplace (Roberts, 2006). Within the Extension organization, these learning communities will more so encourage opportunities for learning centered around the centrality of more focused conversations generating the sharing of ideas and resources (Sobrero, 2008); and afford participants the ability to learn through experiences and practice globally which essentially supports the networks of forming a greater sense of belonging within the community.

Working collaboratively in virtual spaces particularly in collaborative teams are becoming increasingly common (Axtel, Fleck & Turner, 2004). According to Axtel, Fleck & Turner, 2004, collaborative teams situated in virtual spaces are defined as a group of people working towards a common goal yet collaborating across distance. As professional organizations continue to become more globally reorganized and inclusive of computer mediated technologies to deliver opportunities for professional learning, there will be a greater emphasis regarding the presence of cross-organizational collaboration (Axtel, Fleck & Turner, 2004). The implementation of such collaboration typically entails working and generating ideas at a distance. More specifically, as adults continue to build relationships which spans across the globe, it becomes less of a practical practice to physically work and locate everyone in the same geographic place (Axtel, Fleck & Turner, 2004).

Across the organizational spectrum, while it's a great advantage to have access to local expertise of colleagues and clients to bring added value to the work that's begin done, it's also an even greater asset to have access to a more diverse realm of knowledge and expertise outside of the organization by encouraging the use of computer mediated technologies for collaborative learning and knowledge at a distance (Axtel, Fleck & Turner, 2004). Not only does collaborative learning at a distance expose the organization to cost savings and reduced travel expenditures but, it visibly redirects the way adults work and share knowledge. At a greater rate, individuals are able to collectively work via an asynchronous environment to generate and deliver resources, schedule and plan meetings and physically get work done via these technologies. The advancement of computer mediated technologies has afforded adult learners the opportunity to continue collaboration without the factor of forced face-to-face efforts. Prominent communicative technologies that encourage and support these collaborative efforts include the use of electronic mail (email), videoconferencing, and even online document sharing. The emergence of these technologies continues to make collaborative team efforts at a distance possible for organizations.

Although these advantages of collaborating at a distance have been made possible by the inclusion of these technologies, there are disadvantages associated with this approach that lead to difficulty building relationships within the collaborative team which contributes to knowledge sharing and coordination which could ultimately affect the viability and effectiveness of the team (Axtel, Fleck & Turner, 2004). While there are many variations of describing these 'geographically dispersed teams' (Cramton, 2001), it continues to be noted across any organizational span that everyone has to work together to for the betterment of the organization. Even though we are faced with different time zones and physical space (Mittleman & Briggs,

1999), the communicative technologies will continue to enable collaboration in a dispersed environment.

Overview of The Dissertation

This dissertation is comprised of research that contributes to social learning in the workplace contributing to opportunities for learning in Cooperative Extension spaces. The research also focuses on ways participants experience social learning and to what extent computer mediated tools contributes to those collaborative learning opportunities. Although Cooperative Extension organizations are keen on the offering more traditional and formal opportunities for learning and practice, it will be a necessity of the organization to keep up with organizational changes as well as opportunities for growth as dynamics in organizational structure change with the shift in organizational trends such as the way adults learn and participate in practical applications at work, the implementation of alternative approaches are necessary (Conlon, 2004).

The concept of social learning within a Community of Practice primarily occurs through the experiences of the participants and actual participation within the social activity (Lave, 1993), and also involves the process of connections being made between adult learners working toward a similar goal (Barab, 1999). These studies have contributed to an inclination that through collaboration, individuals are able to learn by way of experience and practice through collaborating in Communities of Practice. Although, neither study revealed previous experience with collaborating in Communities of Practice, the studies revealed that participants collaborated in situated learning communities. According to the literature, collaborating in this type of environment allows adult learners the opportunity to work and collaborate with others while developing a shared domain of common interest within the workplace. Not only are they able to

engage through social context, they are able to engage in opportunities for learning which contribute to them navigating through a process of learning which encompasses experience, practice, becoming or identity, and belonging to the actual community (Wenger, 1998). The following section provides a brief overview of the manuscripts associated with this study. The structure of this dissertation includes an introduction to the study, three separate manuscripts, and a conclusion.

Chapter 2. A Review of Literature: Virtual Professional Learning in Cooperative Extension through the Lens of Wenger's Social Theory of Learning

This chapter framed the theoretical framework of Wenger's social theory of learning for workplace learning that involves the use of technology. Wenger (1998) suggests that "learning does not always take place in the classroom or any other formal settings, learning has no official guideline to how or when it occurs" (p. 212). As virtual learning continues to become more prominent, adult learners will need to continue building a network of communities to socially collaborate and learn. Mediated by online tools such as video-conferencing platforms, virtual opportunities will continue to provide adult learners with learning opportunities equivalent to that of traditional face-to-face modes. While this technological opportunity may present disadvantages such as access to the technology for adult learners, social disadvantages, and the lack of hands on learning experiences for the audience, there is still an opportunity to enhance learning opportunities with distance education. As technology has allowed building new knowledge and interaction to take place at a distance, virtual learning can offer great solutions as adult learners engage in these programs in professional settings.

Chapter 3. An Investigation of Professional Learning through Participant Experience in a Cooperative Extension Virtual Professional Development Conference

This study captured the experience of Extension agents who participated in an e-learning, professional development conference, highlighting essential thoughts and feelings regarding participants self efficacy of e-learning technologies, internal and external factors which may contribute to ones participation in e-learning opportunities, characteristics of an effective e-learning professional development environment and identifying roles of which each characteristic plays in influencing behaviorial intent of participant's future usage. Although this study did not inform the effectiveness of the model within the Extension setting, there were interesting findings that surfaced which speak to the perceptions of the actual Extension conference and provided themes which can contribute to the planning and execution of future virtual professional learning opportunities. Some emergent findings suggest that although participating in a face-to-face conference allows individuals to network and communicate, participating virtually eliminates the travel time for participants. Additionally, some findings suggest that in-office distractions may affect one's ability to become fully engaged and that participants have more so of a positive experience when facilitators encourage interaction and engagement.

Chapter 4. Contributing Factors to Social Learning Experiences in Cooperative Extension and How Computer Mediated Tools Contributes to Opportunities for Learning

The purposes of this study were to describe opportunities for learning and to understand to what extent computer mediated tools guide learning within the Virginia Cooperative Extension Program Teams. Wenger (1998) discusses how social interaction defines the process of learning. As adults learn, they are socially engaged with their colleagues and other individuals

which shape their opportunities for learning. Although basic communication and collaboration are prompting individuals to socially interact with each other in the workplace, the use of computer mediated tools are providing an alternative method of collaboration for adults. As computer mediated tools are increasingly an integral part of this environment, there is some concern regarding the social aspect of the learning. This study revealed findings suggesting ways in which participants experience social learning on their PT as well as how computer mediated tools facilitate opportunities for learning within the workplace. Some findings indicated that Program Teams experience social learning through collaboration and that leaders provide momentum and structure for these teams. Findings also suggested that while computer mediated tools allow individuals to collaborate at a distance they also limit the opportunity for full participation.

Theoretical Summarization

The manuscripts presented in this dissertation have contributed to findings and conversations that are grounded in the components and overall function of Communities of Practice and social learning. The "domain" of the CoP allows members of the group or team to become situated together by a need for learning; the "community" provides an opportunity for collective learning which allows a collective bond or relationship to formed over time between the members; and, the "practice" is viewed as a collection of frameworks, ideas, and resourceful tools, (Wenger, McDermott, & Snyder, 2002). Extension professionals who participated in this research were situated in learning communities that afforded them the opportunity to collaborate with each other and isolate characteristics contributing to beneficial factors and inhibitors of computer mediated tools contributing to social learning. These groups and teams were able to collectively exist in an environment together where they were able to engage in collaborative

learning relating to topics of interest and generate knowledge within the group. The findings of this dissertation are consistent with previous work and provides discussion central to extending the body of the CoP work into the new space of Cooperative Extension.

Reflexivity from the Researchers Perspective

Ultimately, this research was inspired by my interest and work in the field of Extension Education. More specifically, having spent many years as an extension professional engaging in team specific duties, I have developed a particular interest in this aspect of learning. Because of this, I feel as though the following three capacities have assisted with the development of my unique contribution for this evaluation: (a) personal background, (b) educational background, and (c) my own personal growth having previously experienced interactive strategies utilized for professional development.

The ideology which facilitated the exploration of this research extends from the perspective of gaining a greater understanding of how extension educators perceive opportunities for learning particularly in team settings and how technology can be implemented to mediate that experience. When it comes to meeting as a team, it's sometimes difficult to meet the needs of all individuals. These needs can be based upon time and space or basic programmatic needs. Often times, we are floundering to connect times where everyone on our team can meet face-to-face which is where technology can mediate this experience. As technology has become a prominent tool in the workplace, individuals are now able to work and connect from any geographic location. Such level of interaction can be defined as encouraging learner participation, integrating stimulating discussion and valued experiences, and incorporating technological approaches to gain and retain learner attention.

In terms of participating in opportunities for learning with the inclusion of technology, I had the opportunity to participate in such experiences both professionally and scholastically. As an Extension professional, I had the opportunity to participate in virtual webinars and program updates monthly which were hosted by the State Administration. While those opportunities allowed us to collaborate and communicate with each other across the span of the state, this approach still posed challenges as a participant. Challenges that included connectivity, internal and external distractions and more importantly, engagement and interaction. As an organization, this was an ideal instructional approach to connect multiple Extension Agents and eliminate the cost of travel and meeting space; however, as a participant, my personal experience attributed to a lack of engagement due to multi-tasking efforts in my office and posed distractions as visitors would visit my office. Within the capacity of my workspace, it's not always possible to close my door and exclude myself from the "outside space" and clientele didn't really adhere to the whispered response of "I'm attending a webinar".

Scholastically, I was able to participate in an online Master's program which was a more structured environment for me involving timelines and deadlines that I needed to adhere to. This virtual space allowed me to become more focused and provided a concrete foundation for me to create my own agenda in an effort to complete tasks. The virtual space in this manner tended to be more accepting and less of a challenge because of the structured nature of the environment. Again, this opportunity for learning allowed me to complete the requirements to obtain a degree while working in a professional environment. These experiences for me were beneficial and really aligned with my schedule allowing me to work and pursue and advanced degree which otherwise may have been limited if I had to physically sit in a classroom.

Although I have experienced learning in virtual settings, and have had great success with those opportunities, I continue to find myself gravitating away from virtual opportunities when it comes to workplace habits such as scheduling meetings, notetaking, planning, etc. These are habits that I would much rather transcribe utilizing a pen and paper. For instance, I continue to utilize a paper agenda/planner to schedule meetings and other activities both personally and professionally. I also utilize notebooks to collect notes and journal. While these computer mediated tools such as Google Calendar and Google note are readily available to me, I continue to gravitate towards a more tactile approach. As a former 4-H professional, I felt more structured and connected to writing things down with pen and paper rather than the use of online calendars, etc.

Methodology

Ontological Perspective

This study used a constructivist ontology that is essentially of a social world of meanings (Guba & Lincoln, 1994). In this domain, it must be assumed that the world being investigated is a world populated by human beings who have their own thoughts, interpretations and meanings; particularly in relation to learning (Guba & Lincoln, 1994). The investigation of this world is clearly manifested in the use of different research methods and techniques of interpretive design such as interviews and personal reflection excerpts written to interpret the learners' feelings, and thoughts regarding social learning in a learning community (Guba & Lincoln, 1994). Utilizing this qualitative study approach focused on the learners' opinions, feelings, experiences and thoughts regarding the utilization of computer mediated tools to guide and facilitate learning.

Participants who were selected to be a part of this research study were encouraged to share their own opinions and perceptions as they related to the study purpose and objectives. It's

imperative that as a researcher, the participating individuals feel as though they are reporting their own lived experiences as they relate to their own participation within the Extension organization. Participants shared an astronomical amount of knowledge which contributed to the researcher answering the research objectives. Incorporating the qualitative approach of interviewing allowed participants to be as open as they desired with the researcher. There were no boundaries placed upon the amount of knowledge they felt the need to share. Participants were guided in such a manner in that once they were asked the interview question, they contributed their own interpretive feedback suggesting their opinions and perspectives. Although, different methodological approaches could have been considered, the qualitative approach selected for this study provided a stronger foundation in guiding participants to freely and openly dialogue regarding their experiences related to social learning in the workplace and the use of computer mediated tools to guide the learning.

Epistemological Perspective

Constructionism is defined by Crotty (2003) as "the view that all knowledge and therefore all meaningful reality as such is contingent upon human practices, being constructed in and out of interaction between human beings and their world and developed and transmitted within an essentially social context" (p. 42). In an effort to learn and interpret meaning, individual must construct their own meaning of a situation or experience. The construct of meaning cannot be discovered by being told or instructed but rather being placed in the experience and developing the construction of how and why things have been applied as they have been. Therefore, meaning is not discovered, but constructed.

This construct informs the methodology of this research study by allowing participants the ability to openly discuss their meaning making process in regard to participating in a social

learning community. Each participating individual will have different backgrounds in terms of area of expertise and will also encounter different experiences associated with learning while participating in their community. Additionally, as learners are participating in active learning within their communities, the associated artifacts can be relied upon as tangible objects created that relate to their real-world experiences and can contribute to their constructed meaning.

Methodological Approach

This research study explored a phenomenological methodological approach. According to Rossman & Rallis, 2012, p.96), "Phenomenology explores the meaning of individual lived experiences." Participants participated in in-depth phone interviews as the researcher sought to understand the deep meaning of a person's experiences and how they articulated those experiences (Rossman & Rallis, 2012). Each of the phone interviews lasted approximately 1-hour. Incorporating a phenomenological methodology allowed the researcher the opportunity to gain insight into social learning demonstrated by Extension professionals. Qualitative methods were also utilized for data analysis. The researcher selected to collaborate with VCE Extension Agents, Specialists and other programming staff for this over all study. While working collaboratively as a community, these adult learners are communicating as a community of learners to connect and enhance their skills and abilities to do their jobs. Additionally, some of the programs utilize computer mediated tools to facilitate these meetings which is another justification for working with this population.

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[1]Chapter Two

A Review of Literature: Virtual Professional Learning in Cooperative Extension through the Lens of Wenger's Social Theory of Learning

Abstract

Wenger (1998) suggests that "learning does not always take place in the classroom or any other formal settings, learning has no official guideline to how or when it occurs" (p. 212). As virtual learning continues to become more prominent, adult learners will need to continue building a network of communities to socially collaborate and learn. Facilitated by online tools, virtual opportunities will continue to provide adult learners with learning opportunities equivalent to that of traditional face-to-face modes. While this technological opportunity may present disadvantages such as access to the technology for adult learners, social disadvantages, and the lack of hands on learning experiences for the audience, there is still an opportunity to enhance learning opportunities with distance education. As technology has allowed building new knowledge and interaction to take place at a distance, virtual learning can offer great solutions as adult learners engage in these programs in professional settings. This manuscript will utilize the theoretical framework of Wenger's social theory of learning for adult learning in Cooperative Extension that involves the use of technology.

Introduction

Professional development for Extension professionals is currently changing the way individuals work and collaborate on a day to day basis (Baruah, 2013; Baughman et al., 2010; Senyurekli, Dworkin, & Dickinson, 2006). Because of a shift in the use of computer mediated

[1] This manuscript was written in preparation for submission to the Journal of Human Sciences and Extension

technologies, Extension professionals may be encouraged to utilize these tools to not only collaborate but to also learn.While work demands are on the rise for Extension professionals, the demand and need for additional professional development instructional approaches are also in high demand. Participating in these professional opportunities will allow learners the opportunity to collaborate and build relationships in a continued effort to effectively keep up with the demands of their jobs and stay informed regarding emerging trends in their fields (Carnevale, 1990). Today, many adult learners are faced with responsibilities that include families, their job as well as life situations such as the need for childcare and the need to earn additional income for their families. Because of these limiting factors, adults are faced with an interference causing them to be limited to in their efforts of engaging in learning opportunities occurring in face-to-face settings (Stacey, Smith, & Barty, 2004). Extensional professionals are constantly juggling multiple roles both personally and professionally as they progress through their careers (Stacey, Smith, & Barty, 2004). Because of this transition, adults are more commonly faced with challenges that hinder their ability to receive the professional training required of them. Being afforded the opportunity to participate in flexible learning opportunities could cause a potential shift in their ability and willingness to participate in additional professional development opportunities, ultimately encouraging the development of social networks or Communities of Practice. According to Lave & Wenger (1991), a Community of Practice (CoP) is defined as a group of people who come together to share similar interests and goals that are aimed at improving their skills by encouraging collaborative efforts with more experienced members.

The instructional approach to which adults learn and engage with others has the potential to influence the way learners receive, interpret and apply knowledge to their everyday

responsibilities and practices (Greenhow, Robelia, & Hughes, 2009). The approach also impacts the way their daily work duties are carried out. According to Sobrero & Craycraft (2008), although adult learners are becoming familiarized to a more centralized congregation of professional learning opportunities to enhance the value of their professional careers, including virtual learning opportunities is now a more prevalent approach to training efforts which totally transforms the way adults work and access information.

Virtual professional development opportunities provide adults with the opportunity to access professional trainings and seminars at any given time or space. Although virtual approaches offer more of a convenient tactic for professional development, the learning environment is fundamentally distinct, as learning in face-to-face environments offers individuals the opportunity to socially connect and communicate (Greenhow, Robelia, & Hughes, 2009). The discussion centered around professional development leads to the concept being defined as specific professional learning that helps adult learners improve their professional knowledge, competence and skills (Shafer, LaShorage & Thomas-Brown, 2015).

While there are computer mediated tools such as video-chatting and conferencing that provide adult learners with the opportunity to socially connect online, those tools may not offer the social interaction needed for meaningful learning to occur (Bonk & King, 2012). This literature review will discuss Wenger's Social Theory of Learning as a lens for understanding professional development in virtual environments while incorporating Communities of Practice (CoP) as a guiding framework for this situated practice (Lave & Wenger, 1991). It is expected that practitioners will gain a clearer understanding of the intentions that may inhibit success contributed through virtual learning but also gain an understanding regarding the implementation of virtual CoP's. But first, we consider the broader context in which professional learning occurs.

Globalization and the Shift to Incorporate Technology in the Workplace

"Transformative changes due to globalization and the current knowledge revolution are forcing organizations to constantly innovate and create new capabilities in order to face the growing pressure for improved performance" (Bourhis, Dubé & Jacob, 2005, p. 23). This technological transition has essentially led to a more globalized infrastructure which has navigated the implementation of technology use (Castells, 2011). Currently, Extension professioanls are becoming exposed to technological advances all centered around the scope of learning (Friedman, 2005). To more effectively understand this relationship between globalization and virtual learning, it's imperative for one to understand exactly how learning has shifted from the viewpoint of "traditional learning" to the perspectives of allowing learners the opportunity to navigate opportunities for learning in different spaces with tools situated in both formal and informal environments creating a supportive ground for professionals to be able to collaborate at work (Vrasidas & Zembylas, 2003).

As professional systems have transitioned to more so accommodate the transition in collaborative knowledge building, adult learners in the workplace have the ability to greater connectivity access in an effort to build capacity (Stoll & Louis, 2007). As working environments have become better equipped to service adult learners and their clientele, more opportunities for Communities of Practice with the inclusion of technology will be somewhat of a major focus of the workplace (Roberts, 2006). This virtually connected workplace will potentially afford individuals with the ability to connect, learn, and share knowledge, globally which essentially supports the networks of which the workplace environment thrives upon for continued growth and stability.

The onset of globalization has allowed adult learners in the workplace to do more with less, enabling their ability to connect globally with other colleagues (Townsend, DeMarie, & Hendrickson, 1998). While the movement of globalization has allowed adults to have greater collaboration, the onset of Communities of Practice which binds together a group of individuals sharing commonality or excitement regarding an idea (Wenger, McDermott & Snyder, 2002; Wenger & Snyder 2000) is seen as an effective, yet, innovative way to create and share organizational knowledge, particularly in an online setting. Incorporating computer mediated tools can effectively support the ongoing interactions and building of knowledge ultimately encouraging continued communicative efforts among Extension professionals; freeing them from constraints of time and space.

Learning in Virtual Teams within the Cooperative Extension Organization

Cooperative Extension professionals have become experts in facilitating and creating engagement in situated learning environments, providing opportunities for knowledge construction through interaction. (Sobrero, 2008). Day in and day out, adult learners seemingly fond themselves engaging in two, concurrently operating spaces to include physical and electronic (Kimble, Hildreth, & Wright, 2001). For the organization, a meeting or professional development opportunity that once required hours of travel time and significant travel dollars can now take place without even leaving the office or home. Traditional face-to-face learning opportunities that once required the interaction of adults convening in one place now relies upon the use of computer mediated technologies for implementation and electronic follow-up to update information and resources, engage learners and even evaluate practices for change. Such technologies as e-mail, instant messages, and integrated hand-held communications technologies allow adult learners to stay connected at any time and in any place across the span of the globe.

Colleagues and clientele within the Extension organization are able to network, collaborate and work due to the inclusion of these advanced technologies, forcing the nature of work to change (Sobrero, 2008). Face-to-face interaction is no longer a required factor to get work done nor is it a required component needed to foster communication and collaboration in the workplace (Sobrero, 2008).

There has been an ongoing examination regarding the current relevance of face-to-face programming initiatives in terms of how learners perceive and expect to gain new knowledge; the face-to-face approach may not be necessary with the onset of virtual communities and teams (He, & Yang, 2016). From a social perspective, learning within these virtual spaces in collaborative teams allow learners to essentially coincide with the structural foundation of the organization. By incorporating these computer mediated technologies, adult learners are able to continue creating opportunities to learn within the organization.

When we think about learning in virtual teams with the use of computer mediated technologies, it's important to contextualize these learning communities as a potential approach for strengthening face-to-face programming initiatives and professional development by also providing access to resources and information electronically. It has been established that communications networking technologies and the actual introduction of the Internet have provided fresh, new opportunities for collaboration among teams of adult learners within the virtual space. As these technologies have become much more accessible within the Extension organization, they have coincidently provided a bridge between gaps of space and time (Sobrero, 2008).

Research continues to show that with the inclusion of the internet and the use of computer mediated technologies, the way in which adult's work and learn continues to be

transformed (Simonson, Smaldino, & Zvacek, 2014). Additionally, the way in which Extension develops and delivers resources has changed. Although the effectiveness of Extension's engagement and opportunities for learning continues to be primarily through face-to-face interactions which does create some value to building capacity and the creation of social networks, the use of computer mediated technologies enhances the way these practices are carried out within the organization. As the Extension organization “repackages” content material and resources, the use of virtual teams and learning communities allows learners to learn collaboratively to continue meeting the needs of the organization and the community (Sobrero & Craycraft, 2008).

Professional Development in Virtual Settings

When we think about professional development settings, it may be difficult to think about this type of professional work in virtual spaces. The way we think about teaching and learning has evolved as well as the way we collaborate with colleagues due to use of computer mediated technologies. Facilitation and learning spaces have evolved into virtual learning communities where adults learn and collaborate online. According to the literature, professional development in virtual communities have been found to be an effective approach for teams to learn (Gilson, Maynard, Jones-Young, Vartianinen, & Hakonen, 2015). Utilizing virtual communities for professional development actually improves professional skills and competencies for adult learners. In particular, utilizing video-conferencing as an interactive tool enhances the ability for learners to actively participate and engage in the professional learning opportunity (Alberta Education, 2006). Additionally, Colle & Holmes (2002) suggest that message boards and chat spaces offer an interactive environment for engagement in this virtual setting.

Although studies indicate that professional development in virtual spaces are conducive to learners with the inclusion of computer mediated technologies, there are implications that should be considered when implementing this collaborative learning opportunity. Lock (2006), suggest that in an effort to setup the virtual platform, these practices should be taken into consideration. “Perceptions of professional development options for educators must change to include purposeful online processes that are ‘fluid in nature’” (Lock, 2006, p. 663). The mindset of those participating in this online process must be open to include the use of technology and there must be clear and concise instruction from the organization and administrators discussing how to implement and interact with other adult learners while utilizing this platform. Communities should be open to other educators locally, as well as to educators around the world (Lock, 2006). Because the virtual space allows collaboration to happen around the globe, Extension professioanls are exposed to the perspectives of facilitators and participants in different locations. As this happens, learners should be fully aware of the participation of additional learners and facilitators/experts of knowledge.

Although computer mediated technologies assit Extension professioanls with collaboration, participants should also be aware of the flaws that may occur as a result of implementing these technologies. The technology may not always be accessible for participants or reliable. At any moment, there could be potential connectivity issues limiting participant ability to engage and interact within the professional development opportunity. Participants could experience inadequate skill set when utilizing the technology causing the learner to not feel comfortable participating with in the virtual approach (Lock, 2006).

Theoretical Framework-The Social Theory of Learning

The social theory of learning as discussed by Wenger (1998) discusses that the structure of which the process of learning involves social practice and participation. Wenger suggests that learning involves a social component which encourages the development of Communities of Practice. Within face-to-face professional development environments, learners are afforded the opportunity of interacting and engaging with other learners and facilitators present during professional trainings. This collaboration offers a greater opportunity for adults to participate in meaningful conversations and interactive activities which can ultimately enhance the meaning making process and contribute to a greater learning experience. Additionally, (Lave & Wenger, 1991), frame this learning opportunity as being situated in a situated environment.

The experiences situated with the process of learning include social components which encourages learners to interact with others. As adults learn, their experiences and reflections that have been created ultimately create a social aspect within their particular learning environment (Wenger, 2009), creating a meaning-making experience for the learners which clearly defines the aspect of social learning as a pedagogical practice (Korthagen, 2010). This theory of learning explains how learning experience must integrate the social participation as a process of learning and of knowing. Wenger's (1998) components of social learning include meaning, practice, community and identity. These components constitute a reflection of assumptions regarding the process of learning. "Practice can relate to a processing exercise where the learners are discussing their perspectives of what has been shared" (Wenger, 1998, p.211). This component seemingly contributes to the meaning making process which contributes to the overall learning experience of each individual. "Community provides a sense of belonging and essentially space for the learners to talk about their actions" (Wenger, 1998, p. 211). This component contributes

to the practice and participation of the learners, socially. And, "identity validates who the learner is and who they are becoming within the community, essentially representing the learner becoming an expert of the knowledge" (Wenger, 1998, p. 211). While each of the aforementioned components contributes to the structure of the learning process as identified by Wenger, the social theory of learning ideally focuses on learning as social participation (Wenger, 1998).

Defining the Community of Practice: Knowledge Sharing in the Workplace in accordance with the Social Theory of Learning

From the perspective of a social theory of learning, it is assumed that learning takes place when a person is part of a Community of Practice (Lave & Wenger, 1991). The situated learning theory suggests that learning encompasses the process of understanding who the learners are, and which CoP learners belong (Lave & Wenger, 1991). Participating in the CoP not only allows adult learners the opportunity to network and engage in intellectual dialogue regarding a topic of common ground, it also allows the learners to build upon current knowledge in an effort to develop new knowledge. As this community continues to build and formalize, the learners are eventually constituted in a situated learning environment where they are acquiring professional skills in a community of practice (Lave & Wenger, 1991). Although in close connectivity with situated learning, Wenger (1998) builds on this situated learning concept to frame the social theory of learning through the implementation and exploration of Communities of Practice in the social setting.

When acting in a community, learners are able to develop a sense of membership and are more inclined to identify with the community itself. In a CoP, like other groups, learners feel they belong to a community and are accepted by others with whom they share the practice, so

they develop a sense of commitment to structure and identity in their relationships (Handley, Sturdy, Fincham & Clark, 2006). Communities of Practice operate as "social learning systems" where experts connect in an effort to solve issues within the group, share ideas, generate structure, and develop tools as well as relationships with other peers (Snyder & Briggs, 2003).

As adult learners become situated in online learning environments for professional development, they become experts of the knowledge enabling them to form a structured community to share information. These structures are considered more non-formal because they can't be directed from outside (Snyder & Briggs, 2003) and resources and information shared within the Community of Practice formulates from within.

An essential dimension of a Community of Practice is the voluntary participation. If participants feel as though they have similar ideas or a general interest as other participants, they are able to join the CoP and collaborate. If this component were absent, members would be less likely to pursue or even share knowledge, put forth the effort to form trusting relationships with others, or apply the knowledge in practice (Chiu, Hsu, & Wang, 2006). While Communities of Practice are primarily formulated on a volunteer basis, they can however offer a great deal of practice and participation among learners who are collaborating online in a professional manner. The CoP can offer a discussion-based approach encouraging learners to contribute unique perspectives of the content becoming experts of the knowledge. The willingness of members' to actually learn and collaborate drives the overall value in communities. This practice can be viewed as an actual system of social learning exhibiting characteristics such as emergent structure, complex relationships, self-organization and dynamic boundaries (Wenger, 2010). Although Communities of Practice are seemingly a productive social encounter between

learners, it is not to deny that there are constraints, impositions, and demands on the production of practice and it shouldn't be assumed that the production of practice is always positive (Wenger, 2010). As learners are participating in professional development opportunities, participation extends beyond just the interaction with people and activities, It's extensive to a more comprehensive process of being completely active participants in the practices of social communities and the construction of identities related to these communities (Lave & Wenger, 1991). The Community of Practice consist of three dimensions: the domain, community, and the practice. The "domain" refers to its focus and identity, the "community" to its member relationships and interactions, and the "practice" to its methods and learning initiatives.

Domain

According to Wenger, McDermott & Snyder (2002), p. 31, "a domain is the area of knowledge that brings the community together and defines a set of issues that members need to address". It's the specific discipline of practice that essentially creates the passion for shared inquiry. Within communities, the domain guides the questions allowing members to present their ideas for introducing or contributing to a discussion, facilitates the learning process among people, and encourages the community to propose and set the common grounds of the group. This is where the learning happens for the individual learner. Within the domain, virtual tools enable the learner to communicate with other learners in different geographic spaces generating new ideas and knowledge which could assist with organizational capacity building.

Community

The community refers to the social structures that encourage learning through interaction and relationships among members, which result in members feeling as though they belong (Sobrero & Craycraft, 2008). As Wenger et al. (2002) suggest, the community is essentially a

critical element to effectively structure knowledge. Besides knowledge sharing and practice, a community is composed of people who interact and build interpersonal relationships on issues important to their domain.

The interpersonal relationships which are built within the community become the foundation upon which the community thrives and evolves and where learners assist each other with strengthening their knowledge regarding a specific practice by encouraging discussion among other community members regarding issues within the domain and also encouraging ideas, ultimately leading to developing a consciousness of belonging to the community and commitment (Wenger, 2004).

Learning in the community is primarily considered to be the onset of the relationship between people which includes the exchange of information that contributes to learning. in a virtual environment where computer mediated tools assist with the exchange of that information between people to assist with their learning (Ardichvili, 2008). The tools essentially allow the exchange of information to happen at any rate. To build a CoP, as Wenger et al. (2002) assume, the interactions among members must have some continuity and must interact regularly to ensure learners are developing a shared understanding of their domain and an approach to their practice.

Practice

According to Wenger et al. (2002), the practice is a set of shared collections of resources that include experiences, tools, and additional opportunities of addressing recurring problems contributing to learning through co-creation and generating new questions or issues needing attention. As the progression of the practice solidifies, it becomes specific knowledge owned, developed and shared by members within a CoP. Orr (1990), Lave and Wenger (1991), and

Brown and Duguid (1991) stress the concept of practice by showing the link between practice and learning within a "situated" organizational context, such as the actual CoP. In this regard, practice refers to "learning-in-working," which "best represents the fluid evolution of learning through practice" (Brown and Duguid 1991, p. 41). As engagement in practice transpires, the learners are essentially reflecting and building upon the new knowledge gains which will ultimately affect capacity building in the workplace. Computer mediated tools such as discussion boards and chat rooms are provided in a virtual space for learners to reflect and build upon new knowledge with other members of the community.

Leadership in a Community of Practice

As it has been previously discussed, Communities of Practice happen due to the fact that members of the community share a common understanding and common knowledge with one another (Printy, 2008). The "leader" of a community of practice typically reflects the social relations of its members, particularly guiding the legitimacy individuals extend to others (Wenger, 1998). On the basis of these associations, members function as leaders who work to keep the community's purpose at the center of activity and who helps to shape the social relations among each of the members to facilitate learning (Wenger, 2000). In essence, community members select individuals as their leaders according to the value and the structure they bring to the community (Printy, 2008). Leadership expertise, their relational skills, their connections to others beyond the community, and potentially their access to resources and tools (Spillane, Hallett, & Diamond, 2003). Ultimately, leadership within the community is necessary (Heller & Firestone, 1995; McLaughlin & Talbert, 2001; Ogawa & Bossert, 1995; Pounder, Ogawa, & Adams, 1995; Spillane, Halverson, & Diamond, 2001).

Learning through Collaboration

Participating in collaborative efforts resonates with multiple individuals working together. Typically, individuals or teams that work together consist of someone who leads the collaboration and participants who partake in the collaboration. Within collaborative learning, participants are led to engage in a much denser level of learning which includes thinking critically, gaining a shared understanding of what has been learned and develop an extended preservation for the material (Garrison, Anderson, & Archer, 2001; Johnson & Johnson, 1999). This approach to learning also allows members to develop communicative and social skills as they are interacting with other members of the collaborative team in an effort to build group cohesion and relationships (Johnson & Johnson, 1999), and become socially engaged (Hiltz, 1994). Furthermore, some social aspects of the literature lead us to believe that social interaction and engagement is essential to collaboration (Kreijns, Kirschner, & Jochems, 2003).

The Virtual Perspective of The Social Theory of Learning

Adults are engaged in learning opportunities that are not traditionally facilitated in a formal classroom. As noted by Wenger (1998), learning does not always take place in the classroom or any other formal settings and has no official guideline to how or when it occurs. Non-formally and formally, technology is an integral part of the workplace and continues to assist adults with completing their jobs. So many aspects of the workplace have changed allowing technology to revitalize the way adults work, connect and engage with colleagues, geographically. According to Sobrero (2008) virtual teams perform at a steadfast rate and they provide value to the Extension organization and contributes to learning, research, resources, and are cost effective. The computer mediated tools associated with technology-enhanced learning allow individuals to meet, engage in conversation, dialogue, plan, and work together to build

capacity across the span of an organization (Jeong & Hmelo-Silver, 2016). The Post-modern era confirms that while the traditional structure of learning is no longer a common goal for adults in the workplace, adults must continue to be able to participate in professional learning as organizational needs change (Sessa & London, 2015). Technology enhanced learning creates this opportunity by incorporating tools to provide access to professional learning for adults who may be challenged geographically or unable to access the learning opportunity at a designated time (Beetham & Sharpe, 2013).

The role of technology can be viewed as beneficial in assisting with professional learning or it can be considered a hindrance. Although formal learning spaces offer adults the opportunity to formally engage in learning and build relationships with colleagues, some adult learners are still limited and not afforded this experience due to unforeseen issues (Bancheva & Sharpe, 2015). These issues could be related to travel, family emergencies or even workplace emergencies. As these issues arise, learners may miss out on these professional opportunities that may not be offered again. With computer mediated tools such as video-conferencing, these learning opportunities can be recorded and listened to at a later time or offered on multiple dates. Although there are limiting barriers, the use of technology affords individuals the ability to access professional learning opportunities at any time and in any space to enhance their learning experience and assist them with being better prepared to skillfully do their jobs.

Although the community-based efforts of the Extension organization are seemingly face-to-face, computer mediated tools have provided a transformation in the way resources and information are made available (Sobrero & Craycraft, 2008). Adams (2010) states “although formal tools influence our practical reasoning and decision making, our personal history and

social preferences shape tool use" (p.7). As adult learners, the decision to utilize these tools for professional learning is indeed a preference.

Learning in a CoP with Technology

The Extension organization has been a visible practice for many years striving to improve the community engagement for years. As computer mediated technologies have developed and afforded opportunities for advanced learning, the use of conference calls, video-conferencing and other platforms have led to the creation of online learning communities (Sobrero & Craycraft, 2008). In accordance with the components of a CoP, learning is generated in a virtual environment to meet the needs of participants. "Identity-learning as becoming-talking about how learning changes who we are and creates histories of becoming in the context of our communities" (Wenger, 1998, p.211). We are social beings, our identity defines who we are as an individual and as individuals in the workplace, we are socially connected with our colleagues and overall organization. Computer mediated tools offer engagement options allowing professionals to socially engage and participate in a learning environment. These tools allow learners the ability to communicate with each other and dialogue in small groups. Technology mediates learning to enhance our skills at work to become better professionals, to work better together as colleagues and build capacity within the organization. The access these tools permit allows learners to participate in professional learning opportunities globally and grow as a professional creating an enhanced working relationship for community stakeholders and clientele.

"Community contributes to learning as belonging which contributes to social configurations" (Wenger, 1998, p.211). Within this instance, knowing is a matter of competence with respect to valued initiatives, learning in the work place creates a sense of belonging as

learners communicate and engage with their colleagues. Computer mediated tools afford adult learners the ability to access and participate virtually, contributing to a community that encourages belonging in the digital space and the formation of new communities.

"Practice contributes to learning as doing and talking about shared resources that sustain mutual engagement" (Wenger, 1998 p.211). In this instance, knowing is a matter of participating in the pursuit of various initiatives. Computer mediated tools offer adult learners the ability to participate and engage in learning. These tools are an afforded resource that guides the learning for adults. They are able to exchange practical information and resources amongst each other to capitalize on the learning experience.

"Meaning contributes to learning as experience which includes talking about the changing ability" (Wenger, 1998 p.211). Achieving meaning is the ability to experience the world & learner engagement as meaningful. Technology generates a meaning-making experience for adult learners. Technological tools afford learners the opportunity to engage and create new meaning within a community of colleagues and stakeholders. These tools provide access for learners to create new opportunities for shared experience while assisting learners with making their own interpretations allowing them to become an expert of the knowledge gained. The networking and collaborative learning that occurs enables the learner to continue to skillfully better the organization and build upon the working relationships they have with others.

Findings from previous research indicate that in identifying elements for success when incorporating computer mediated tools in a CoP, the most vital components are leadership of the CoP; the establishment of reliable technology; building trust and respect and maintaining strong motivation (Sobrero, 2008). According to Ardichvili (2008), trust is a prominent factor in promoting participation and motivation in virtual teams. Additional findings show that leaders

have an important influence on the success of virtual teams and that the decisions regarding the leadership of team should also include administrative leadership (Bourhis & Dube, 2005). Research also suggests that if learners are to experience success in these virtual teams, the computer mediated tools need to be compatible and accessible (Palloff & Pratt, 2007). Although the use of computer mediated tools for professional learning is increasing at a steadfast rate, the execution of how the tools are implemented is critical. Not only is it essential to be able to effectively facilitate in this virtual setting and implement reliable tools, it's also essential to ensure the participants actually feel as though they are learning and are connected as a community with their colleagues. As these tools are designed to primarily bridge the gaps of time, space and location, it's essential that Extension practitioners continue to design and provide professional learning opportunities that continue allowing learners the ability to collaborate, network and learn in a community driven by virtual tools.

With regard to Figure 2-1., Wenger (1998) discusses how social interaction defines the process of learning. As adults learn, they are socially engaged with their colleagues and other individuals which shape their opportunities for learning. As computer mediated tools are increasingly an integral part of this environment, there is some concern regarding the social aspect of the learning. However, technology enhanced learning, particularly the use of computer mediated tools, offers a perspective of how technology might enhance the learning for individuals and guide a community of learners to work better together and build capacity within the organization.

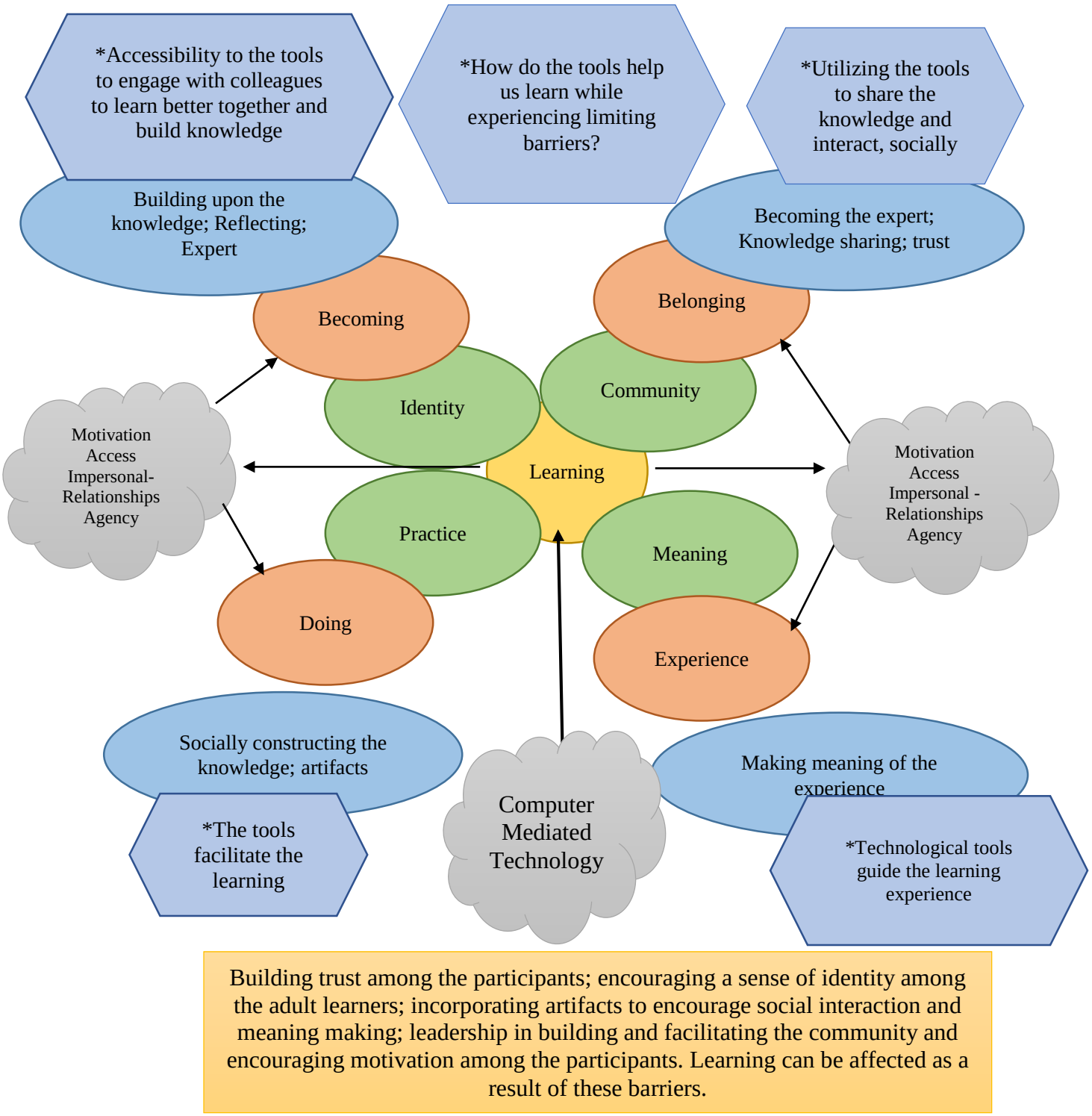

Figure 2-1. Adopted from Wenger (1998) An Explanation of a Virtual Community with the inclusion of Technology Enhanced Learning

Best Practices for Learning through Virtual Collaboration within Cooperative Extension

In the past, working collaboratively at a distance within teams was thought of as a form of organizational structure leading to the production of deliverables and resources within the organization (Palmer, Speier, & Price, 1998). Particularly when working in social teams, they are often assigned by administration and provided with specific tasks to complete (Morgeson, Reider, & Campion, 2005). The literature discusses that for a team meeting in a virtual collaborative space to be successful, team members must understand how to bring value to the organization (Sobrero, 2008). When we think about collaborative learning in situated spaces, it's typical to refer to learning in the form of communities as discussed by Lave and Wenger (1991). Within CoP's, these teams or groups of people essentially share a common concern or passion centralized around a common practice (Wenger, 1998). The CoP is not just a centralized collection of best practices, but a group of individuals who interact and learn together who share a common perspective (Wenger, McDermott, & Snyder, 2002).

It's almost impossible to function successfully in a situated learning environment with prominent knowledge sharing without active participation from all of its members (Dixon, 2000). For communities to be vital, members should be actively engaged in knowledge sharing activities including posing and posting questions on community boards, engaging in live chats and conversations, participating in synchronous online and video conferencing discussion sessions, and providing asynchronous answers and feedback in discussion threads (Ardichvili, Page, Wentling, 2003; Hayes & Walsham, 2000). Additionally, the use of discussion boards and chat boxes should be impelemted to assist with organizing communicative efforts while online (Cleary, Flammia, Minacori, & Spattery, 2015). As with any CoP but more prominently within a virtual community, building trust is a primary enabler when it comes to knowledge sharing. In an

effort to build interpersonal trust, it's essential to encourage some form of online, collaborative interaction with computer mediated technologies such as teleconferencing to include some face-to-face interactions. Also, the Extension organization should provide organizational expectations and organizational procedures transparent through clear communication.

Virtual Communities of Practice: Defining the Digital Learning Space

The virtual community is actually developed and maintained utilizing computer mediated tools and the internet. Although technology presumably accounts for much of work-affiliated duties and learning within the workplace and is the major source of communication which adult learners rely on to connect with others (Hill & Wouters, 2010), learners also assume that technology hinders the social participation and practice of learners participating in online professional development opportunities (Brophy, 2010). It is through human interaction in online learning environments (i.e., learner-learner and learner-instructor interaction) that learners develop a community in which the members construct knowledge with others (Wenger, 1998).

The growth of the Internet and related technologies has resulted in the merging of online learning into the routine practices of professional settings (Brophy, 2010). Learning space, particularly virtual space, provides an optimal setting for adult learners to explore, network, and collaborate globally. Learning in a social community exhibits a process of how learners learn and engage through social practice and participation. Space, whether physical or virtual, can have a significant impact on learning. Learning spaces focuses on how learner expectations influence the principles and activities that facilitate learning, and the role of technology from the perspective of those who create learning environments (Oblinger, 2006). Learning in a digital space affords adult learners the opportunity to have access to an endless amount of professional development opportunities; incorporating a CoP can offer an opportunity to connect socially.

Engaging in social contexts includes multiple processes of meaning making encompassing direct engagement in activities, conversations, reflections, and other methods of personal participation in social life and producing physical and conceptual artifacts (Wenger, 1998). These artifacts include words, tools, concepts, methods, stories, documents, and other forms of reification; "the process of giving form to the experience by producing objects" (Wenger, 1998, p. 58) that reflect the shared experience of the participants, ultimately organizing their participation (Wenger, 2010). Within the virtual environment, the technology itself has become the symbolic artifact. Technology is the medium through which knowledge is shared and distributed across the digital space. It also provides opportunities for the learners to make meaning of learning and new knowledge by generating shared artifacts.

According to Wenger, meaningful learning requires more than just participation from the participants, but also "reification" as a part of the interaction. The meaning making process implies that the learner is able to comprehend and makes sense of the learning that's happening. They must be able to reify the information, conceptualizing a valid interpretation of what was shared. The ability to socially collaborate with others can seemingly confirm that validation of knowledge. Wenger (2010) explains artifacts without participation do not carry their own meaning; and participation without artifacts is fleeting, unanchored, and uncoordinated, however, participation and reification are not locked into each other. In professional development settings, particularly a distance education environment, the learning artifacts which are contributing to the overall experiences of adult learners contributes to the moment of engagement in the participants' world, bringing about a renewed experience, negotiating and renegotiating its meaning (Wenger, 2010).

While learning permits individuals to share and express their perspectives of content matter in organized spaces, utilizing computer mediated tools will contribute to each individual learner becoming an expert, sharing knowledge within an organized digital community. Application and practice doesn't necessarily happen overnight, the process of knowledge saturation happens over time, according to Wenger (2010), through active and dynamic negotiation of meaning, practice is something that is produced over time by those who engage in it, it's essentially the learner's production.

Building the Community of Practice from a Virtual Perspective: Factors missing from the Virtual Community of Practice and Limitations

When meeting virtually, the expectations of the experience can vary. Participants of Communities of Practice seek to belong to a community where they become experts of the knowledge being shared; they want to feel as though they belong and are connecting with their counterparts. Although virtual CoP's have the ability to incorporate computer mediated tools and artifacts such as an interactive discussion board and virtual break-out sessions; it's still somewhat difficult for adult learners to participate and make meaning of the shared experience they are a part of. According to Kehrwald (2008), interaction and social presence is important and the ability to make meaning and encourage interpersonal interaction is to maximize that execution of interaction that may cultivate social presence and encourage relationships between participants. Research also states that motivation is needed in an effort for learners to engage in relational exchanges; learners need a motive which makes the meaning making purposeful and beneficial (Kehrwald, 2008). When individuals are able to make meaning of the shared experiences they are experiencing, the validation of the knowledge seems to become more applicable and the ability to develop and engage in meaning making and knowledge sharing becomes equitable for those involved. Additional research discusses that participant reflection is

also an indicator of learning and achieving positive meaning making. Guthrie & McCracken (2014) state “regardless of the technology utilized to facilitate inquiry and awareness, reflection is essential to the learning process and has a direct effect on connecting ideas and learning outcomes” p. 245. Guthrie & McCracken (2008) also state “being able to reflect both personally through the journal and with other in the discussion board is critical to learning” p. 245.

As adult learners convene virtually, the sense of building a community, sharing and building new knowledge becomes an influence within the workplace. If there are factors hindering the primary function of the CoP, that could ultimately affect the amount of impactful success being contributed by the participants. Moving forward with building a community of practice virtually; it is evident that the desired components to successfully design this practice includes factors which contribute to the alleviation of issues regarding access, impersonal relationships, agency and motivation. Factors of those components include but are not limited to: building trust among the participants, encouraging a sense of identity among the adult learners, incorporating artifacts to encourage social interaction and meaning making, leadership in building and facilitating the community and encouraging motivation among the participants. To ensure that there is a social component encouraging meaning making leading to new knowledge, the inclusion of social components should effectively master the components of the social theory of leaning to include learning by doing, experiencing, becoming and belonging as proposed by Wenger (2000).

Although implementing virtual Communities of Practice in professional development programming is an alternative technique to introduce adult learning opportunities in the workplace, there are underpinning limitations which could alter the learning experience and process of the adult learners. These limitations not only generate from the interactive

technological component, but also from e-learning in general as the overall approach to the learning strategy. Limitations include access, impersonal relationships (building relationships), self-discipline of the participants (motivation) and lack of control regarding the design of the interactive strategy and of their own experience.

Access

The digital divide represents an important social setback accompanying the diffusion of the internet globally. It is defined as the gap existing between individuals advantaged by the internet and those individuals relatively disadvantaged by the internet (Rogers, 2010). While some adult learners seek to take advantage of e-learning opportunities for professional development, some may be limited because of accessibility. Having access to the Internet is a basic stipulation that must be met for learners to effectively engage in e-learning. The limitation presented to adult learners who do not have feasible access to the internet is quite a disadvantage which can lead to negative personifications of e-learning opportunities. One may think that this limitation of access seemingly affects those that may not be financially inclined to obtain such technological abilities, however, access to the internet and other e-learning technologies extends beyond financial ability and into the geographically challenged. Particularly in rural areas, individuals may be placed at a disadvantage when it comes to gaining access to the internet, due to the limited coverage (Bernard, 2001). According to Warschauer (2003), the "digital divide is marked not only by physical access to computers and connectivity but also by access to the additional resources that allow people to use technology well" (p. 6). The lack of resources (physical and geographical) presents limitations to gaining full access to potential e-learning opportunities; particularly in the workplace where learners may be limited to access due to their location in the community (low-income, rural, & urban communities).

Impersonal Relationships

Impersonal relationships can also become a factor in virtual Communities of Practice. "Becoming part of a community of practice is a key component of attaining competency in any field of endeavor, but entering a community is not always easy" (Wenger, 1998, p. 125). The lack of personable relationships and social interaction can play a major role in the retention of knowledge as well as knowledge gains. Wenger (2009) states "this theory of social learning is on learning as participation, not just to local events of engagement, but to a more encompassing process of being active participants in the practices of social communities" p.210. Social interaction can play an effective role in the interpretation of learning when participating in professional development programming efforts. The building of relationships and transference of knowledge can rely heavily upon the inclusion of social interaction which is why impersonal relationships can be a major limitation of implementing interactive strategies in professional development programs.

According to previous research, factors such as uncertainty about entering a new community, finding the "right" connection with people and developing a sense of belonging seem to be regarded as of great importance to the participants in a study as they spoke about their experiences of "communities of practice" (Stacey, Smith, & Barty, 2004). Stacey et al. (2004) indicated that becoming a member of a community was indeed problematic in all circumstances; in communities of practice oriented specifically to learning, in communities oriented specifically to work, in "virtual" communities and in "real" communities. "The feeling of anxiety on entering a community of practice or feeling a sense of detachment from a community of practice, particularly a virtual community, is a common attribute for adult learners" (Stacey et al. 2004).

Motivation

Self-discipline and the lack of participant motivation can also be considered a limitation in virtual Communities of Practice. Often participants feel as though they are not as motivated to utilize technological strategies for professional development programs (Vu, P., Cao, Vu, L. & Cepero, 2014). The lack of self-discipline/motivation can present distance between the participant and the learning management system being implemented, therefore presenting a non-successful, interactive program.

Just as motivation is a key factor in learning and achievement in face-to-face educational contexts (Brophy, 2010), so it is in online learning environments (Jones & Issroff, 2007). Poor motivation has been identified as a decisive factor in contributing to the high rates of dissatisfaction of online experiences (Muilenburg & Berge, 2005).

Paris and Turner (1994) describe motivation as the 'engine' of learning (p. 217), and it can influence what we learn, how we learn and when we choose to learn (Schunk & Usher 2012). Participating in a different learning approach such as distance education can collapse one's motivation to participate. If individuals are not comfortable or keen on learning in such spaces, the lack of motivation could affect their level of participation in the learning opportunity. According to Ryan and Deci (2000) motivated learners are more likely to undertake challenging activities, be actively engaged, enjoy and adopt a deep approach to learning and exhibit enhanced performance, persistence and creativity. If the motivation is absent, it is somewhat difficult to implement an effective computer mediated tool and engage learners.

Creating an environment where learners want to learn and feel successful is an integral component of designing a successful e-learning environment for adult learners. According to Martin (2009), in today's online environments there is a lack of facilitator presence, face-to-face

interaction, and tech support, participating in an online instructional environment should feel as though they are gaining an equal experience as that of face-to-face interaction.

Agency (Control)

In professional development settings, learners want to have ownership of their own learning which will allow them the choice and flexibility in terms of accessing their learning. While adult learners are exposed to different learning spaces both formally and informally, learning and the motivation to learn could be challenged when reciprocated in informal settings. Adult learners are capable of and willing to take responsibility for their behavior, actions and opinions and thus their learning; fundamentally learning is a desire-based function (Furth, 1987). However, adults seem to be uncertain regarding things that others request of them to learn and which they themselves have no desire to learn to learn (Furth, 1987). If adult participants are not very motivated from the beginning, it's difficult to it's difficult to build an interest in the subject matter.

Concluding Thoughts

The strengthening of Communities of Practice and networking among professionals is becoming more prominent as individuals connect and work through technologies. Traditional training has become more flexible and the connection with Extension colleagues has become somewhat of an easier task allowing the learning to become more accessible in assisting adult learners with accomplishing workplace goals and objectives at a greater rate.

As virtual learning within Extension settings continue to become more prominent, adult learners will need to continue building a network of communities to socially collaborate and learn considering the process of learning matriculates from social interaction according to Wenger's social theory of learning. Mediated by online tools, virtual opportunities will continue

to provide Extension colleagues with learning opportunities equivalent to that of formal face-to-face approaches. Additionally, formulating situated learning spaces will ultimately stimulate collaborative participation among learners which is absent in most digital environments. While this technological opportunity may present challenging disadvantages for the Extension community such as access to the technology and the lack of hands on, interavtive learning experiences, there is still an opportunity to enhance learning opportunities with distance education. As technology has allowed the transfer of knowledge and interaction to take place at a distance on a scale never before imagined (Vrasidas & Zembylas, 2003), virtual learning can offer great solutions for Extension to engage and work with others at a distance professional settings.

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[2]Chapter Three

An Investigation of Professional Learning through Participant Experience in a Cooperative Extension Virtual Professional Development Conference

Abstract

Incorporating e-learning technologies within the workplace has become a prominent approach for working adults. One's willingness to utlize technological approaches for work tends to vary across the spectrum due to numerous factors. Although participating in this instructional method is not vital for all individuals, over time it may grow to become a preferred approach to professional learning at work. Individual attitudes and perceptions of e-learning technologies may positively or negatively influence ones' motivation or willingness to participate in current and future e-learning opportunities. This study captures the experience of Extension agents participating in an e-learning, professional development conference. The findings that surfaced captured overall participant perceptions regarding the design and implementation of the conference. Although this study specifically denotes the experiences of Virgina Cooperative Extension professionals, the findings may support other Extension organizations utilizing Technology-Enhanced Learning for professional learning opportunities.

Introduction

Digital tools are a growing component of the workplace, yet there is still some uncertainty regarding individual decisions to utilize these technologies. E-learning incorporates the use of computer mediated tools that enhance job performance and increases learning opportunities within the workplace (Clark & Mayer, 2016). Technologies such as video-conferenceing create, and facilitate learning, anytime and anywhere (McKnight et al., 2016).

[2] This manuscript was written in preparation for submission to the Journal of Extension

Although e-learning offers a multitude of benefits for Cooperative Extension, such as flexibility (Sobrero, 2008) and budgetary effectiveness, this approach can also affect the way that individuals receive, interpret and retain knowledge (Liaw, Huang & Chen, 2007). While participating in e-learning is not favored by all individuals, it has become instrumental in professional learning and is consistent with Cooperative Extension's "reputation among its clientele for being the first to introduce cutting-edge methods, equipment, technology, tools, and ideas to help address high-priority issues of people in local communities" (Sobrero & Craycraft, 2008, p.1). King and Boehlje (2000) proposed a virtual Extension service as a start-up initiative to shift the focus of resource sharing from supply side to on-demand delivery; eXtension was later officially launched in 2008 (Grace & Lambur, 2009). Although Extension has integrated technological advances into their organization, there are still limitations that may inhibit Extension professionals from fully engaging in e-learning, presenting uncertainties regarding its implementation.

When participating in professional learning virtually, the execution of the approach is essential. For Extension professionals, being exposed to virtual learning may be limiting due to the fact that they have participated in traditional, face-to-face learning for quite some time. Because this is a common experience, it may be effective to implement some form of familiarity for the individual with other people. In this case, video-conferencing may be an effective method of facilitation (McConnell, Parker, Eberhardt, Koehler & Lundeberg, 2013). As participants are able to physically see each other while communicating, they are able to build a sense of trust and form social relationships within the group. It is also essential for individuals to have prior knowledge of utilizing the technology. When participating in virtual learning, individuals may need to spend a great deal of time interacting with the technology to become accustomed with

the technological platform (McConnel et al., 2013). There is also a risk of challenges affecting the individuals who are uncomfortable with utilizing the computer and telecommunication (Johnson, Heimann & O'Neill, 2001). However, when facilitators of virtual sessions are shown how to utilize the technology through demonstration, they are able to understand how to better facilitate, virtually (McConnel et al., 2013). Incorporating computer mediated tools drastically reduces funding associated with accommodations and professional travel which could reduce or even eliminated as virtual opportunities contribute to the communication efforts via technology (Bergiel, Bergiel & Balsmeier, 2008). Reducing face-to-face meeting time also contributes to a decreased level of disruptions (Bergiel, Bergiel & Balsmeier, 2008), resulting in greater group cohesion and organization (Gaudes, Hamilton-bogart, Marsh & Robinson, 2007). The amount of time spent discussing non-agenda items is reduced as a result of implementing technological platforms (Gaudes, Hamilton-bogart, Marsh & Robinson, 2007) such as WebEx.

In this study, we investigated the experiences of Extension agents who participated in a virtual conference utilizing WebEx technology, which is a technological platform allowing individuals the ability to connect and meet virtually with other people across the globe. This conferece is typically an annual, face-to-face professional development conference for the entire [state] Cooperative Extension system held over the course of three days. This study was conducted in the first year the conference was implemeted utilizing a virtual platform. This study aimed to capture thoughts and feelings regarding participants self efficacy towards using WebEx, internal and external factors which may contribute to the experience of virtual conference opportunities, and characteristics of an effective virtual professional learning environment.

Theoretical Framework

Understanding users' attitudes towards specific technological approaches lends itself to the creation of suitable e-learning environments for teaching and learning. The 3-TUM (three-tier Technology Use Model) (Liaw, Huang & Chen, 2007) integrates multidisciplinary perspectives that include motivation, social cognitive theory (Bandura, 1986), the theory of planned behavior (Ajzen, 1991), and the technology acceptance model (Davis, 1989). The model predicts that the technological system itself (Tier 1, WebEx, etc.) will influence participants' satisfaction and perceived usefulness of the system (Tier 2), ultimately contributing to their behavioral intent to utilize this system in the future (Tier 3). Within this study, the 3-TUM model is used as a framework to investigate the overall attitudes of participants who participated in the [State] Virtual Conference regarding their overall satisfaction of the technology platform and their behavioral intent to utilize this system in the future. It also explored limitations of the platform by investigating additional factors that contributed to Extension Agent behavioral intent to utilize the technology platform in the future.

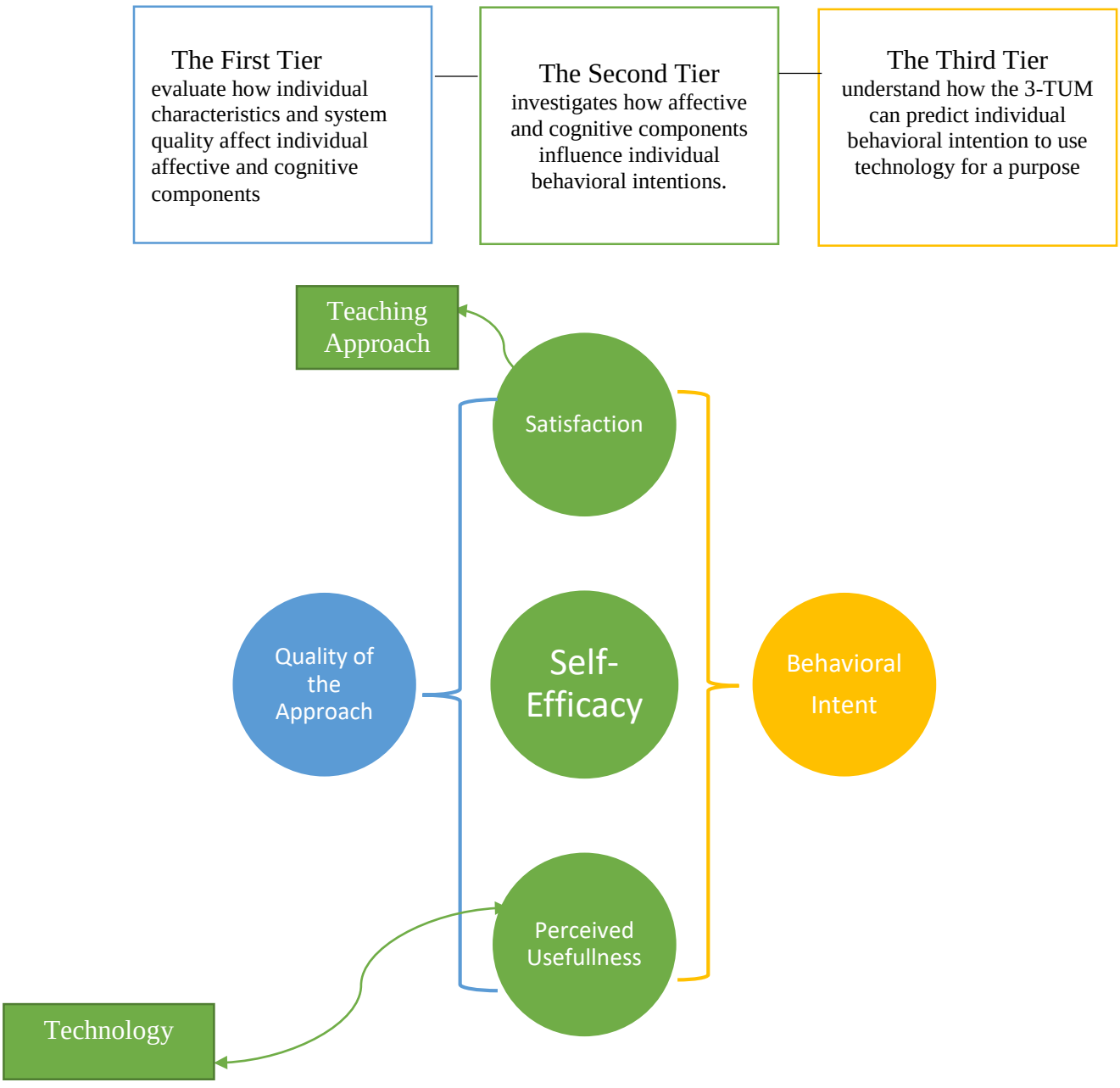

Figure 3-1. Adapted from the 3-TUM model theoretical framework (Liaw, Huang & Chen, 2007).

Methodology

Data was collected and analyzed utilizing a qualitative approach. As discussed by Rossman & Rallis (2011), qualitative research allowed the researcher to explore and generate findings that reveal the procedures and significances of particular experiences. These qualitative investigations are presumptions of pre-defined concepts; however, they specifically define developing themes throughout the research (McCracken, 1988).

The qualitative technique of in-depth, phone interviews was used in this research study. Patton (2002) discusses that qualitative interviewing allows the researcher to arrive at the specific perspectives of those being interviewed. When the perspectives of others are captured, the researcher is actually able to tap into their knowledge and experiences regarding processes, outcomes etc.

This interview method provided the researcher with the opportunity to investigate the experiences of Extension professionals who participated in a virtual conference utilizing WebEx technologies. An interview guide was created to allow participant perceptions and experiences to develop and provide a framework for applicable themes (Patton, 2002). Additionally, each participant was asked the same questions in an effort to reduce bias (Patton, 2002).

Recruitment of Participants

The participants for this study included current Extension professionals who participated in the [State] Cooperative Extension Winter Conference. An email was sent to the [State] email roster recruiting participants to be a part of the study. Within the recruitment email, there was a Quatrics survey attached prompting participants to provide feedback regarding their overall experience of the virtual conference and the computer mediated tools utilized by answering an

open-ended question. They were also asked to provide their contact information indicating that they wanted to be contacted for further discussion regarding their conference experience. Following this initial recruitment, an email was sent to those who indicated they wanted to be contacted for further discussion. Within the email, participants were asked to review the consenting information required by IRB and select a date and time to be interviewed. Participants were required to provide verbal consent before the phone interview began.

Sample

There were 63 participants who completed the recruitment survey indicating that they were willing to be contacted to participate in a phone interview. In an effort to capture a well-rounded sample of data and ensure the responses captured the efforts of the study, each of the participants who completed a survey (n=63) was contacted. Of these, 9 participants actually participated in the interview. For this study, demographics included age which ranged from 35 or less to 55; and individual areas of focus within Extension which included 4-H, Agriculture, and Family & Consumer Sciences.

Rossman & Rallis (2011) suggest that participants participating in qualitative interviews should possess the overall knowledge of the research being conducted in terms of research interests and future plans of the intended findings. A purposefully selected sample (total population) provided the insight needed for the research (Patton, 2002).

Data Collection

Following the consent of participants, an initial time, and date was scheduled with participants to conduct the phone interview with the researcher. Phone interviews were conducted and recorded. Throughout each interview, the researcher utilized active listening skills

with specific intentions to be able to provide accurate summarization of what was reported. Summarization was to insure the PT member that they were being heard, and to assist with the analysis process upon the reviewing of the interview transcripts. Upon completion of the interview, the audio recordings were uploaded and stored on the password protected computer of the researcher and transcribed and transcripts for each interview were given an identifiable coding pseudonym.

To ensure the interviews were proceeded properly, the researcher verified with the participant the method of the interview (phone) as well as verified the use of the audio recorder during the interview and confirmed that all procedures would be in accordance with IRB protocol.

Data Analysis

According to Rossman & Rallis (2012), the collection and analysis of qualitative data collectively work together as a system. Patton (2002) accentuates that the clarification of qualitative data involves understanding what is being interpreted within the data, looking for patterns, collectively organizing what was stated, and incorporating what all participants have discussed.

The following procedure was followed while analyzing the participant phone interviews: 1) inductive analysis (open coding) was used to discover patterns and themes throughout the data (Saldana, 2015); 2) an additional researcher assisted with coding to check for trustworthiness of the data; 3) Following the final coding by the additional researcher, a final reading of the data took place.

According to Patton (2002), the analysis of qualitative data begins with an inductive analysis to reveal patterns and themes, that contributes to a generated codebook for further

analysis. (Patton, 2002). Straus and Corbin (1998) refer to this approach as “open coding”. Each of the transcripts related to this study were read by the researcher. Multiple readings that took place. During the first reading, patterns and themes that emerged were captured. Patton (2002) suggests that categories which are used to identify the data emerge from vocabulary that the researcher develops to describe those words which were inductively generated by the participants and codes were assigned.

Descriptive words and phrases were coded and noted throughout the transcripts and then the transcripts were uploaded to the Atlas ti. coding software for further analysis. During a second reading, the researcher sought to evaluate the text, ensuring that the text reflected the codes assigned within the very first reading. The third reading was directed towards clearly identifying themes and patterns. Following the analysis of the data, a codebook was formulated to assist with the descriptive report of emergent themes and findings that contributed to this study.

Transferability

Transferability determines if the results are related to any other contexts and if they can be transferred to other contexts (Saldana, 2015). To determine transferability, the researcher sought to provide a well interpreted description of the perceptions, experiences, and findings that surrounded participant experiences. By providing acceptable detail to conclude a defined context, the researcher allowed readers the opportunity to decide if the results were transferable to other circumstances.

Dependability

Dependability refers to whether or not the results of the study are consistent over time and across researchers (Lincoln & Guba, 1985; Miles & Huberman, 1994). To determine dependability, the researcher relied upon a professional peer. The professional peer commented on all aspects of the study, particularly data analysis, and results.

Triangulation

Triangulation occurred through cross verification of the data by two researchers. To determine triangulation, the researcher and professional peer verified that the data was clear and concise utilizing the researchers code book.

Confirmability

Confirmability assumes that the findings are ultimately reflective of each of the participants' perspectives as revealed in the data, rather than being a personal reflection of my own perceptions or bias. To ensure confirmability, the researcher explicitly stated any assumptions about the evaluative interest in relationship to her own unique contributions or as they were otherwise brought to her awareness.

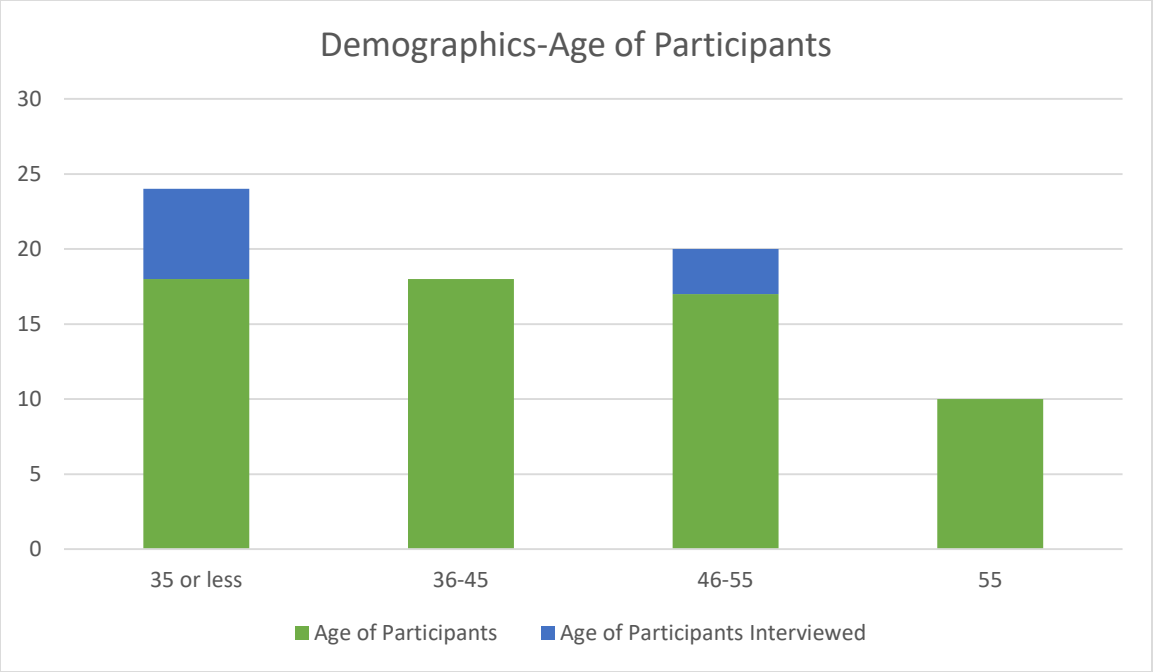

Figure 3-2. Demographics-Age of participants within the study.

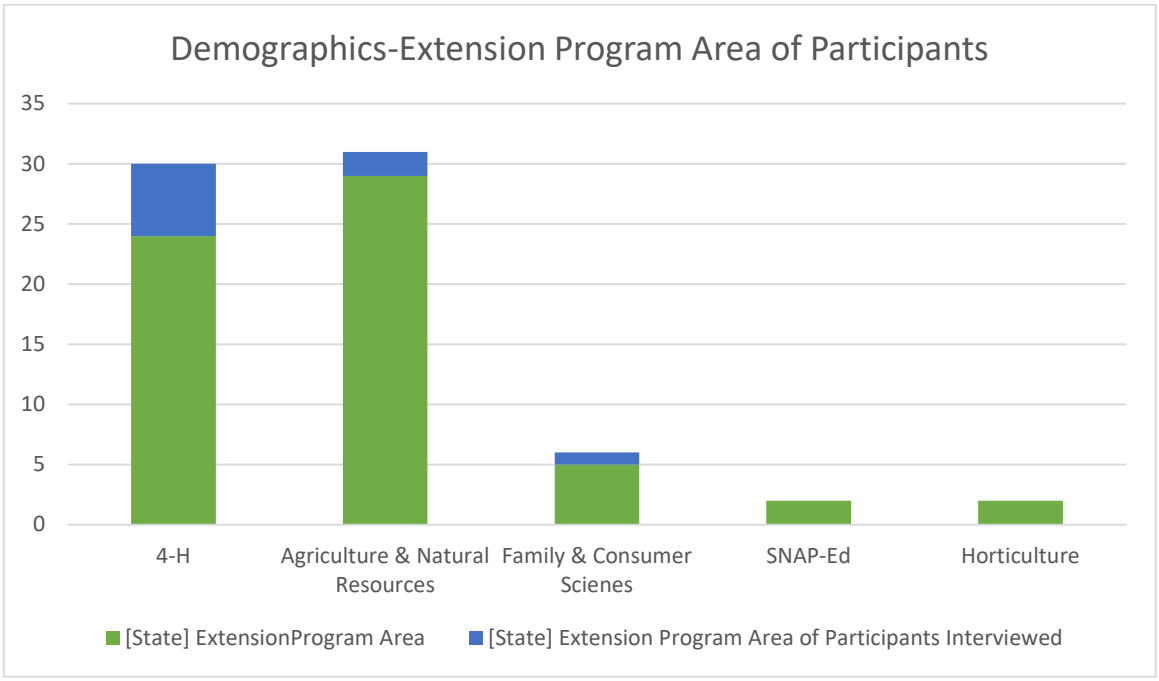

Figure 3-3. Demographics-Extension Program Area of Participants.

Findings

Six themes emerged from the data that captured participants overall perception regarding the experiences of this virtual conference and comparison with previous conference experiences in face-to-face settings. *Participating in a face-to-face conference experience allows participants the opportunity to network and communicate.* Participants of this virtual conference felt it was necessary and important to encourage face-to-face interaction when participating in a conference. They felt as though they missed out on networking opportunities and communicating with their colleagues. A participant stated "I think that is one of the things that we missed with regular winter conference, um you go to winter conference and then when you get out of your workshop you go have lunch and then you have that discussion about the workshops that you went to and for me it makes things stick with me a little more".

Participating in a virtual conference eliminates travel time for Agents. Participants appreciated not having to travel for the conference. They felt as though the organization could save money by hosting a virtual conference and they as participants wouldn't have to spend a great amount of time traveling a great distance to get to the conference location. One participant stated, "there are a lot of benefits to the WebEx format in that it saves travel time and it saves travel dollars". Another participant indicated "it is so nice to not have to leave my office and to be able to go home at night and not have to travel, for instance for me it takes a whole day to get to the University and whole day to get back so its an extra day on each side so and um, so I really enjoyed that".

Participants are exposed to a negative conference experience when the facilitator doesn't know how to utilize the WebEx technology. Participants expressed that they didn't have a positive experience during their virtual workshop session when facilitators didn't know how to utilize the

WebEx technology. The lack of ability to use the computer mediated tools embedded a negative experience causing some participants to lose interest in the session. A participant stated “I specifically recommend that there be a session on how to use WebEx or if there is a specific training for those presenting on WebEx because, I mean I think the technical difficulties are the biggest issues, presenters spent the first 10 or 15 minutes of the session apologizing for not knowing how to use WebEx so it kind of got to the point where I was like, I don’t care if you don’t know how to use it, just move on”. Another particiant indicated “Yes, so additional training for the instructors to discuss not only how to use the technology so they are comfortable with using the system and knowing what are the best features to make it interactive and more attractive to the group in a virtual setting”.

Participants experience structured interactions when participating in virtual conference sessions. They felt that offering a virtual approach for this conference assisted with the facilitator being able to control the session and follow the agenda more closely than in a face-to-face session. They felt as though in face-to-face sessions, the guided conversation may not always adhere to the agenda and they feel as though they may have missed important resources upon leaving the workshop due to additional side conversations. Participant feedback indicated “oftentimes, especially in 4-H, people can really get off track on their workshop or whatever because someone is asking questions, that are very specific or off topic a little bit and the discussion kind of veers that way and then you leave and you’re like we just talked about these things and that’s not really what we came for”.

In-office distractions affect the ability of participants to become fully engaged in the virtual conference session. Participants expressed that during the virtual conference, there were some in-office distractions that occurred making their participation in the conference not as

positive. They expressed that it is difficult to be fully engaged in a conference session and not acknowledge the fact that phones are ringing, and clients are stopping by. A participant stated, “I did find it difficult to ignore the phone…it’s one thing if you are in a conference in person but …the land line rings, your work calls, I find myself answering those calls out of habit, I mean you just can’t ignore it”.

Participants have a positive conference experience when the facilitator encourages interaction and engagement by utilizing interactive tools. The computer mediated tools provide the opportunity for individuals to engage in interactive activities while in a virtual space. The participants stated that when the facilitators encouraged group interaction by implementing these tools, their experience was more positive. These tools allowed the participants the ability to continue engaging and interacting even while the facilitator was lecturing. A participant stated, “I think the most engagement I used was the chatbox, which I did like, it does allow you to get a thought out there without having to wait to be called on or feeling like you are interrupting”.

Discussion

Our findings provide insight into factors to consider when planning and implementing future virtual professional learning opportunities. How the facilitator uses the technology is a key consideration and our findings are consistent with previous work in this area. According to McConnel et al., (2013), it is essential that facilitators are aware of how to implement the technology and how to actually facilitate utilizing the technology. Johnson, Heimann & O’Neill (2001) discuss risk factors that affect individuals who are uncomfortable with utilizing the computer and telecommunication leading to a negative experience for facilitators and participants who aren’t familiar with utilizing the technology. The 3-TUM model (Liaw, Huang & Chen, 2007) suggests that the nature of individual experience with the technology

affects how they perceive the system. In our case, when participants experience a facilitator who doesn't know how to utilize the WebEx technology, this can decrease their level of satisfaction, which ultimately will negatively impact the likelihood they will use it again. Conversely, when the facilitator encourages interaction and engagement by utilizing interactive tools, this can increase participants' perceived usefulness of the system, thus positively impacting the likelihood they will use it again.

Two of our themes centered on unstructured interactions that occur in a face-to-face conference setting. Participants reported that a face-to-face experience encourages networking and the opportunity to communicate with peers; face-to-face opportunities indeed allow adult learners the opportunity to network which allows the professional encounter to become more personal (McConnel et al., 2013). Although the traditional, face-to-face approach continues to assist with building capacity and strengthening communities throughout the Extension organization (Sobrero & Craycraft, 2008), participants also reported that it is easier to get off task when engaging in a face-to-face discussion during a conference session. Bergiel, Bergiel & Balsmeier (2008) also discuss the reduction in face-to-face meeting time contributing to a reduced level of disruption caused by a non-cohesive structure. The formality of the virtual setting helps with minimizing discussion that may be off topic.

Finally, two of our themes related to factors outside of the conference itself. According to (Bergiel, Bergiel & Balsmeier, 2008), virtual opportunities drastically eliminate travel time for participants which coincides with one of the emergent themes discussing the elimination of travel time for extension professionals who participate in virtual conference experiences. A downside to this is our finding that participants experienced in-office distractions that impacted their ability to become fully engaged in the virtual conference session.

Limitations

The findings of this small sample study are specific to this [State] Winter Conference. As previously mentioned, due to the fact that this is the very first time this conference has been offered virtually, participants may have had strong opinions in relation to the execution of the approach. As a result of these strong opinions, individuals may have volunteered to participate in the study to express their perceived notions regarding the actual conference and not so much the technology utilized during the conference. Additionally, participants of this study were recruited two months after the conference due to awaiting required approval to collect data. This delay in recruitment may have contributed to the small sample size of this study and perceptions may have been altered over time.

Conclusion & Recommendations for Practice

Extension professionals benefit from knowing how to plan for virtual professional learning opportunities and how to ensure those opportunities are effective for Extension professionals. We investigated participant experience in a Cooperative Extension virtual professional development conference, illuminating contributing factors which may or may not hinder the willingness of individuals to participate in future professional opportunities offered in a virtual setting. Although there were noted challenges and limitations to the approach, such as in-office distractions while participating in the conference and negative personal experiences due to the fact that conference facilitators were not fully aware of how to utilize the technology, there were also benefits such as experiencing a positive outcome when facilitators encouraged interaction and engagement during the session. These findings could inform efforts to enhance the virtual experience for participants. We revealed factors which can influence one's ability and willingness to participate in virtual learning. The 3-TUM model suggests that contributing

factors which affect the learning approach, the technology and the overall quality of the approach will ultimately limit the willingness of future participants to engage in future opportunities. Findings from this study will allow planners to better service and plan for a virtual professional development experience and contribute to administrators better preparing the selected facilitators for their virtual presentations; this could increase their willingness to facilitate additional virtual opportunities in the future.

Individual attitudes and perceptions of e-learning technologies may positively or negatively influene ones' motivation and/or ability to participate in current and future e-learning opportunities (Liaw, Huang & Chen, 2007). While e-learning lends itself to employers as a convienient approach for professional development, a number of questions remain: Does it allow individuals the opportunity to engage in a meaningful learing experience and retain new knowledge as a result of the identified technological approach? Are characteristics of the e-learning system accesible to all who are involved (participants and instructors) including clarity of the design, workshop interaction, and active discussion? Are the needs of participants as well as the instructors being met as a result of e-learning interaction?

The following recommendations for practice have been made based on the findings that surfaced from this study:

Recommendations for Practice

- When utilizing technology enhanced learning, the facilitators should make better use of the computer mediated tools available to enhance the networking and communication.
- Better prepare facilitators to utilize the technological approach designed for the professional development opportunity.
- Provide facilitators with pre-conference demonstrations on how to utilize the technology.

- When facilitating conference sessions virtually or face-to-face, facilitators should have better agency when following the written agenda. When sessions no longer follow the distributed agenda, it's difficult for participants to meet their necessary goals.
- When an organization hosts a virtual conference, the organization administration should offer each participating office the ability to close for the duration of the conference allowing the participants to become better engaged in their workshop. Participants could also collaborate and participate as a group which could diminish the amount of in-office distractions.
- Encourage group interaction by encouraging group discussions in office settings when incorporating virtual opportunities.
- Incorporate a greater use of technological approaches which encourage active participation and engagement.

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Chapter Four

Contributing Factors to Social Learning Experiences in the Workplace and How Technological Tools Contributes to Opportunities for Learning

Abstract

As adults work, they are engaged with their colleagues and other individuals which shapes their opportunities for learning. While computer mediated tools are increasingly an integral part of this environment, there is some concern regarding the social aspect of the learning. This qualitative research study sought to describe opportunities for learning and to understand to what extent computer mediated tools guide learning within Program Teams in the Virginia Cooperative Extension organization. Wenger (1998) discusses how social interaction defines the process of learning. The findings indicated that collaboration and system processes contribute to opportunities for learning within the Program Teams. Findings also indicated that while the use of computer mediated tools allow participants to collaborate at a distance, they also can inhibit full participation.

Introduction

Adult learners are socially connected with their colleagues on a daily basis. They work, interact and are engaged socially as they network and communicate within the workplace. For many, the face-to-face experience and sharing of energy with colleagues encourages learning and makes for a better experience by encouraging the development of social, working relationships. Communication guided by the use of computer mediated tools such as video-conferencing and chatting affords individuals the opportunity to work together at any time and in any space to enhance their learning experience and assist them with being better prepared to skillfully do their jobs and build capacity, “the process of developing and strengthening the skills, instincts,

abilities, processes and resources that organizations and communities need to survive, adapt, and thrive in the fast-changing world" (Ann Philbin, Capacity Building in Social Justice Organizations Ford Foundation, 1996), within their organization.

As previously discussed in Chapter 2, Wenger (2000), "views learning as participation, embodied in the joint action of a group of practitioners sharing identity, tasks and/or environment" (p.83). In particular, learning at work constitutes an enhanced portion of the learning undertaken by adults. Workplace learning generally occurs through work-related interactions and is described as contributing to the learning of both the individual and the organization (Cacciattolo, 2015). Furthermore, workplace learning tends to enhance individual skills that may lead to additional skills (Stroud & Fairbrother, 2006). Previous research indicates that 80% of workplace learning occurs through either self-directed learning, networking, coaching and mentoring (Yeo, 2008), therefore concluding that is informal and is often incorporated into workplace social interactions and everyday practices (Cacciattolo, 2015).

Learning, particularly at work constitutes an enhanced portion of the learning undertaken by adults. In the workplace, learners need to understand the effects of connecting and building professional relationships with others. According to Wenger (1998), social participation within a community is essential to learning. This concept is rooted in the practices and relationships of the workplace and actually helps to create identity and meaning within the community (Boud & Middleton, 2003). Within workplace learning, there is typically no inclination of separation between participation in work and participation in learning (Lave 1993). Activities that happen at work, with other colleagues are essential components for workers to learn through work (Billett 1999) and learning that happens in the moment (Rogoff 1990; 1995) is created by the activities individuals engage in (Billett, 2001). "The direct guidance they access, and the indirect

contributions provided by the physical and social environment of the workplace reinforce, refine or generate new forms of knowledge" (Billett, 2001).

Research indicates that adult learning in the workplace relates to learning from other people and learning through overcoming challenges posed by the work itself (Alderton, 1999, Eraut, 1999). Additionally, opportunities for learning and collaboration in the workplace depend heavily upon the frequency and nature of interpersonal encounters and the nature and structuring of the actual work (Alderton, 1999 & Eraut, 1999). In conjunction with the structure of work, there may also be requirements of ongoing communication between members of the working group (Eraut, 2002).

As working continues to expand beyond the realm of face-to-face environments, Extension professionals will need to think outside the box and encourage the use of computer-mediated tools such as video-conferencing and document sharing to work and connect with others. These tools will eventually accommodate the way that learners perceive organizational capacity building and relationship building as organizations continue to rely upon successful program development and growth.

Review of the Literature

Adult Learning

Adults continue to be engaged in learning opportunities that are not traditionally facilitated in a formal classroom. Opportunities for learning are widespread allowing, adults the opportunity to participate at in multiple ways. Adults are not only able to participate in formal settings, but also non-traditional settings that includes participating at a distance. As noted by Wenger (1998), learning does not always take place in the classroom or any other formal settings

and has no official guideline to how or when it occurs. Essentially, learning can happen within any given environment that adults are socially engaged, according to Wenger, (1998).

There have been many aspects of the workplace that have changed since allowing technology to contribute to the way adults work, connect and engage with colleagues, geographically (Collins & Halverson, 2018). While technology has revitalized the way individuals work, the presence of Communities of Practice also contributes to the way adults work providing a collaborative environment for adults to work and socially engage with their colleagues. (Hargreaves, 1994) Within the workplace, computer mediated tools allow adults to meet, engage in conversation, dialogue, plan, and work together to build capacity across the span of their organization. The Post-modern era confirms that while the traditional structure of learning is no longer a common goal for adults in the workplace, adults must continue to be able to participate in professional learning as organizational needs change (Hargreaves, 1994).

In addition to collaboration in workplace settings, research states collaborative efforts in learning are identified in higher education classrooms where program-based learning is situated collaborative learning (Lou & MacGregor, 2004). One of the more important components concerning the implementation of project-based learning is the facilitation of structures centered around working in groups or teams (Livingstone & Lynch, 2000). Researchers say collaborative learning and the theoretical approach of project-based learning are highly compatible in such a manner that it's essential for effective implementation in university classrooms for students (Lou & MacGregor, 2004). Primarily, the author suggests students with varying stages of knowledge and previous experiences related to a common idea work together in small groups or teams toward a common goal (Lou & MacGregor, 2004). Ideally, from a socially constructed perspective, collaboration among students promotes participation and the development of

knowledge (Salomon, 1993). Within this context, students are responsible for the learning that takes place within their team setting requiring the interdependence of the group or team, motivation, and flexibility (Abrami, Chambers, Poulsen, Simone, d'Apollonia, & Howden, 1995).

Additionally, collaborative learning research (e.g., Lou, Abrami, & d'Apollonia, 2001; Lou et al., 1996; Springer, Stanne, & Donovan, 1999) has indicated that on an average, students in higher education settings seemed to learn more when working in collaborative teams. However, it's been noted that in an effort to encourage positive collaborative efforts and for learning to occur within those collaborative spaces, students need the necessary skills of collaboration (Bosworth, 1994) which include interpersonal or skills of social ability (Henri, 1991; Lundgren, 1977; McDonald & Gibson, 1998).

Technology Enhanced Learning in Cooperative Extension

Studies have indicated that group interaction in virtual environments that include interaction, active participation, and collaboration facilitate the social construction of meaning (Hiltz, Fjermestad, & Lewis, 1999). Technology Enhanced Learning is defined as learning through the use of technology and the internet (Kirkwood & Price, 2014). "Extension has historically utilized cutting edge technologies to enhance local learning opportunities" (Sobrero & Craycraft, 2008, p.1). These online tools permit greater efficiency, faster response, and continued social learning (Sobrero & Craycraft, 2008). Although, the effectiveness of Extension's community-based learning continues to be through face-to-face educational programs, workshops and individual interactions, the implementation of computer mediated tools offers professionals flexibility and access to professional learning opportunities (Sobrero & Craycraft, 2008). While formal, face-to-face approaches assist with building capacity, creating

social networks that enhance leadership, and result in positive actions that strengthen the organization, these computer mediated tools can assist with providing these skills to Extension professionals expanding opportunities for collaboration and continuing to benefit not only the organization but also their clientele. By clearly understanding how these computer mediated tools can guide learning for Extension professionals, the Extension organization as a whole will conceptually be able to increase and enhance program and community outreach outcomes and provide additional opportunities for collaboration to strengthen the global relationship among Extension professionals both near and far.

Community of Practice in the Extension Setting

Although "Extension educators have a wealth of digital tools available to them for engaging current and potential clients" (Barton, Barton, Barton, Boyer, Brosnan, Hill & Stafne, 2017, p. 185) and colleagues, it is still unclear how these tools contribute to collaboration for adult learners. There is a visible gap in the literature which should address the aforementioned issue. With the incorporation of computer mediated tools, the initiative to plan and work together is not limited to time or geographic space (Townsend, DeMarie, & Hendrickson, 1998). Research findings indicate that in Cooperative Extension settings, particularly with farmers; they tend to be disconnected when interacting in a Community of Practice and they seemed to be concerned about the lack of access to knowledge and information due to their lack of interaction with other participants (Dolinska & d'Aquino, 2016). Research also indicates that for well-connected farmers the concern was slightly different indicating that participants who design and implement resources and train agricultural leaders, don't consult with farmers to share their experiences and are not aware of the actual problems they are facing which doesn't provide a positive experience within the Community of Practice (Dolinska & d'Aquino, 2016).

An additional finding indicates that there is lack of experience of extension agents and other Extension professionals when collaborating in these settings. Farmers indicated that "experience represents context-specific, localized knowledge, and could be gained principally through actually practicing agriculture" (Dolinska & d'Aquino, 2016, p. 126). One of the benefits of the CoP is that it provided farmers with access to diverse sources of knowledge which was valued by participants. For participants, "they constituted the CoP spaces as a space where new ideas could be exchanged, discussed and developed" (Dolinska & d'Aquino, 2016, p. 128). For a CoP to be considered an effective approach for collaborative learning, members should feel as though they can share knowledge regarding their content area, work and learn from others (Sobrero & Craycraft, 2008).

While we currently know that a CoP does not require these tools to function, they do benefit participants by connecting individual learners with resources and other experts of knowledge and the addition of computer mediated tools may increase the connectivity of ideas shared and resource development for Extension professionals and their clientele; there are foreseen barriers associated with the use of technology that may cause some underlying issues for participants. These barriers ultimately affect the social participation of participants which could alter adult learner willingness to fully adopt technology-enhanced learning opportunities as a learning approach towards professional development. Barriers include but are not limited to: access to the technology, impersonal relationships, lack of motivation and lack of agency (Bates, 2005). Additionally, these barriers may affect the attitudes and perceptions of learners, hindering their ability to further extend their learning within the digital era. In terms of access, particularly in rural areas, individuals may be placed at a disadvantage when it comes to gaining access to the internet, due to the limited coverage (Bernard, 2001). According to Warschauer (2003), the

"digital divide is marked not only by physical access to computers and connectivity but also by access to the additional resources that allow people to use technology well" (p. 6). When participants are building social relationships, they want to feel as though they have a positive connection with individuals and are motivated to learn (Stacey, Smith, & Barty, 2004). While these barriers contribute to overall user participation, these technological tools will continue to increase connectivity with other adult learners across the globe allowing the expertise of others to be shared and implemented to continue strengthening the organization.

Theoretical Framework

The social theory of learning as discussed by Wenger (1998) theorizes that the structure of the learning process involves social practice and participation. Wenger suggests that learning encompasses a social component that encourages the formation of Communities of Practice to formulate and interpret knowledge. In face-to-face workplace settings, learners are afforded the opportunity of interacting and engaging with colleagues participating in meaningful conversations that can enhance the meaning making process which can ultimately contribute to a greater learning experience. (Wenger, 1998) frames learning as being situated in virtual environments by including the use of technological tools in a world full of learners and generating meaning (Lave & Wenger, 1991). As learners learn, their experiences and reflections create a social aspect within their particular learning environment (Wenger, 2009), creating a meaning-making experience for the learners which clearly defines the aspect of social learning (Korthagen, 2010). Wenger's (1998) components of social learning characterize social participation as a process of learning and of knowing including meaning, practice, community and identity.

"Practice can relate to a processing exercise where the learners are discussing their perspectives of what has been shared" (Wenger, 1998, p. 211). This component contributes to the meaning making process which contributes to the overall learning experience of each individual. "Community provides a sense of belonging and essentially space for the learners to talk about their actions" (Wenger, 1998, p. 211). This component contributes to the practice and participation of the learners, socially. And, "identity validates who the learner is and who they are becoming within the community, essentially representing the learner becoming an expert of the knowledge" (Wenger, 1998, p. 211).

As technological tools are increasingly an integral part of professional interactions, there is some concern regarding the social engagement with colleagues and other individuals which shape their opportunities for learning. However, the use of technological tools for working together offers a perspective of how technology might enhance the learning for individuals and guide a community of colleagues to work better together and build capacity within the organization.

Within the social theory of learning, it is assumed that learning takes place when a person is affiliated with a Community of Practice (Lave & Wenger, 1991). Communities of practice are formed by people who engage in a process of collective learning in a shared domain. The CoP consist of three dimensions, the domain, community, and the practice. The "domain" refers to its focus and identity, the "community" to its member relationships and interactions, and the "practice" to its methods and learning initiatives.

Participating in a CoP not only allows adult learners the opportunity to network and engage in intellectual dialogue regarding a topic of common ground, it also allows the learners to build upon current knowledge in an effort to develop new knowledge. As this community

continues to build and formalize, the learners are eventually constituted in a situated learning environment where they are acquiring professional skills in a community of practice (Lave & Wenger, 1991). Although in close connectivity with situated learning, Wenger, (1998) builds on this situated learning concept to frame the social theory of learning through the implementation and exploration of Communities of Practice in the social setting.

Context of the Study

One of the core values of the Virginia Cooperative Extension (VCE) program is to build individual relationships between Extension educators, Specialists, clients and community representatives. In an effort to adhere to building relationships, communicating, and program development, VCE has instituted the utilization of Program Teams within the organization. The Program Teams were set up to function as a community of colleagues. Program Teams operate by collaborating with Associate and District Directors to coordinate Extension programming, identify and engage communities of interest, developing the Team Plan of Work and Action Plans, generate impact reports, facilitate communication with the Extension Agents who have bought into the Action Plans and work to seek external funding.

Program Team members work collaboratively to meet the necessary goals of providing viable resources to the community. The teams consist of PT members, Chairs and Co-Chairs, all of whom represented the VCE organization in some capacity either as an Extension Agent, State Specialist or State Program Leader. According to the Program Team operating guidelines (2016), PT members regularly contribute to the work of the team by preparing and assisting with team tasks. The chairs coordinate team members and resources in an effort to develop the Team's POW which include annual Action Plans, organize and lead team meetings and collaborate with District Directors by coordinating with other program team leaders to foster integrated

programming efforts and ensure team operation is aligned with the organizational mission. Program Team leaders also manage the operational budget for the team.

Research Purpose and Objectives

The purpose of this study was to describe opportunities for learning and to understand to what extent technological tools guide learning within the Virginia Cooperative Extension Program Teams. The following research questions framed this study:

RQ1. In what ways do participants experience social learning within their Program Team?

RQ2. What types of learning outcomes do participants associate with their Program Team?

RQ3. In what ways do technological tools guide and facilitate learning and outcomes for participants within their Program Team?

RQ4. In what ways do the technological tools inhibit learning and outcomes for participants within their Program Team?

Methodology

Phenomenological Approach

"Phenomenology explores the meaning of individual lived experiences" (Rossman & Rallis 2011, p.96). Social learning and engagement typifies this work as individuals have often participated on a Program Team over a prolonged period of time. Participants participated in in-depth phone interviews as the researcher sought to understand the deep meaning of the participants experiences and how they articulated those experiences (Rossman & Rallis, 2011). Incorporating a phenomenological approach allowed the researcher the opportunity to gain insight into the phenomenon of social learning experienced by Extension professionals who were members of a Program Team.

A qualitative approach was utilized in this research study. As discussed by Rossman & Rallis (2011), qualitative research allowed the researcher to explore and generate findings that reveal the developments and significances of participant experiences. These qualitative investigations were not constructed on pre-determined constructs, but instead clearly define emergent themes throughout the research process (McCracken, 1988). This qualitative approach relies upon the collection of data which is descriptive of situations, people, events, attitudes, beliefs, and thought (Patton 2000). Qualitative investigations allow the researcher to explore a phenomenon and gather in-depth understanding and rich data. This study allows the researcher to essentially learn about an experience by interviewing participants who have lived through the experience (Yow, 1994).

The qualitative technique of in-depth, phone interviews was used in this research study. Patton (2002) discusses that the qualitative interview allows the researcher to enter into the perspectives of those being interview. According to Patton, the researcher should proceed with qualitative interviewing assuming that the perspectives of others are actually meaningful and explicit. When the perspectives of others are captured, the researcher is actually able to tap into their knowledge and experiences regarding processes, outcomes etc.

The in-depth interview method provided the researcher with the opportunity to gain a greater understanding of collaborative experiences related to opportunities for learning. To further explore the nature and experiences contributing to opportunities for learning in this study, an interview guide was developed based on previous literature and the theoretical framework for the study. Following Patton (2002) the questions included in the interview guide reflected the descriptions provided in the literature of the phenomenon under investigation. This study was

also informed by *a priori* propositions as the basis for theoretical framework and is summarized in Appendix H.

According to Patton (2002), the interview guide is a pre-determined, list of questions that the interviewer investigates with the participants during the in depth qualitative interview. The interview guide essentially provides interesting areas of focus which provide the researcher with the ability to investigate and ask questions. Ultimately, this creates a conversation to explain and clarify the particular issue of the study. Patton (2002) further discuses that interview guide will allow participant perceptions and experiences to emerge, providing framework where pertinent matters can be further explored. Additionally, each participant being interviewed were asked the same questions in an effort to reduce participant bias.

Although the questions in the interview guide were pre-determined, the qualitative nature of the in-depth interview provided the researcher with flexibility to explore unanticipated matters that arose.

Recruitment of Participants

The participants for this study included current Extension professionals who were participating one of the VCE Program Teams invited to participate in this study. The Program Teams selected to participate in this study represented different entities of the Virginia Cooperative Extension organization. In an effort to capture a well-rounded sample and ensure the responses captured the efforts of a range of experiences, each member of each selected program team was invited to participate.

Sampling Procedures

There are currently eleven program teams that are part of the VCE organization with ten-fifteen Extension Educators serving on each team. For this study, five Program Teams were targeted. The teams selected met standard criteria before they were selected. The five program teams were targeted based on the following criteria: 1) meets regularly, 2) active leadership, 3) plan of work on file, 4) action plan on file. The researcher targeted a sample of twenty participants; however, twelve agreed to participate in the study. The number of participants was determined in an effort to have three-four participants from each of the five PT's selected for this study such that there was a widespread of representation from the majority of the selected teams.

Rossman & Rallis (2011) suggest that participants participating in qualitative interviews should possess the overall knowledge of the research being conducted in terms of research interests and future plans of the intended findings. The researcher made PT members aware of the details regarding the research study they were agreeing to participate in. According to Patton, (2002), qualitative investigations tend to focus on instances that will ultimately provide rich information for the in-depth study. Patton (2002) points out the importance of selecting a sample that can generate in-depth information, insights, and understandings needed by the researcher. In this case, a purposefully selected sample provided insight addressing the research questions according to Patton (2002).

Sample

The targeted sample included PT members who were members of one of the targeted Program Teams. The PT's identified for this study were: 1) Leadership, Volunteerism & Citizenship, 2) Natural Resources & Energy Management, 3) Community, Local & Regional Food Systems, 4) Family & Community Economics and 5) Positive Youth Development. In

conjunction with being a member of one of the aforementioned PT's, the members also had to consent to complete a 1-hour phone interview and consent to have their Action Plan viewed as a component of the analysis.

Recruitment Procedure

The researcher began the selection process via an email which was sent to the Chairs and Co-chairs of the designated Program Teams. These Program Team (PT) leaders received a recruitment email that included an introductory message extensively discussing the details of the study. If co-chair agreed to share the recruitment email with their PT members, they were sent a second email which included a consent form consenting their willingness to participate in this study. As members of the PT received the recruitment email, a response was sent to the researcher alerting them if the PT member was willing to participate. If they participated, verbal consent was acquired via the phone prior to beginning the interview.

Data Collection

Interview Procedure

The researcher conducted individual phone interviews that lasted approximately one hour and were audio recorded. The interviews were semi-structured meaning they were considered to be open, allowing new ideas to be brought up during the interview as a result of what the interviewee responded with (Hollands, 2013). Although the semi-structured approach allowed for flexibility, the researcher utilized an interview guide during the interviews to assist with the organization of the interview. Once the data was collected through individual interviews, participants were assigned pseudonyms and the audio recordings were transcribed to facilitate analysis.

An integral part of qualitative research, particularly with engaging in open-ended interviews, is building a relationship with the participant. It was imperative to build rapport with the participants to ensure a successful interview took place, ensuring rich data will be gathered for the purpose of an effective study. To ensure the interviews were proceeded properly, the researcher verified with the participant the method of the interview (phone) as well as verified the use of additional, necessary equipment that was utilized during the interview (audio recorder) and confirmed that all procedures would be in accordance with IRB protocol prior to the interview date. Furthermore, the establishment of contact was imperative for the interview participant which began with the initial interview where the researcher again, made an introduction, reviewed the purpose of the study, and read the consent form to the participant to verify willing participation by the interviewee.

Request for Artifacts

Program Team action plans were requested for analysis for this research study. The team action plans were located online. These artifacts provided tangible evidence of thinking and practice for PT participants. Throughout the learning process, it's essential to evaluate success of developmental strategies; artifacts validate program success by displaying what can be accomplished with an effective team/plan in place.

Data Analysis

According to Rossman & Rallis (2012), the collection and analysis of qualitative data collectively work together as a system. Bogdan and Biklen (1982) describe the analysis process as organizing the collected data, separating and integrating the data, identifying patterns, and identifying what's significant within the data and what there is to be learned as well

communicating conclusions to report. Additionally, Patton (2002) emphasizes that the interpretation of qualitative data involves understanding interpretations of the data, identifying patterns, and organizing as well as providing interpretations of what has been revealed.

As a contribution to data collection, additional components involved in this study (PT Action Plans) were collected and reviewed as a sensitizing tool for the researcher to gain a greater understanding of the operation of the teams. The Action Plans contribute to the overall work of the team and are developed as emphasis areas selected by the team.

Data was analyzed utilizing a qualitative approach. The following procedure was followed while analyzing the participant phone interviews: 1) inductive analysis (open coding) was used to discover patterns and themes throughout the data (Saldana, 2015); 2) an additional researcher assisted with coding to check for trustworthiness of the data; 3) Following the final coding by the researcher, a final reading of the data took place.

Throughout each interview, the researcher utilized active listening skills with specific intentions to be able to provide accurate summarization of what was reported. Summarization was used to insure the participants were being heard, and to assist with the analysis process upon the reviewing of the interview transcripts.

According to Patton (2002), the analysis of qualitative data begins with an inductive analysis to discover patterns and themes, which then contribute to a generated codebook for analysis of the content (Patton, 2002). Straus and Corbin (1998) as cited by Patton (2002), refer to this approach as “open coding”. Each of the transcripts related to this study were read by the researcher multiple times. During the first reading, patterns and themes that emerged were captured as a memo by the researcher was kept in mind, as meaning was brought forward while reviewing the transcript of the interview. Patton (2002) suggests that categories used to label the

data come from terms that the researcher might develop to describe the terms inductively generated by the people themselves, thus coding was assigned to the data that emerged from the reading of the transcripts.

Descriptive key words and phrases were coded and noted throughout the transcripts utilizing the Atlas ti. coding software. Additionally, verbatim quotes that the researcher saw as informative were emphasized during this reading. During a second reading, the researcher sought to analyze the quotes to ensure they were specifically reflected within the assigned code. Focused codes were also identified. During a third reading, analysis was directed towards identifying themes, patterns, and common ways of thinking. Following the analysis of the data, a codebook was formulated to assist with the descriptive report of emergent themes and findings that contributed to this study.

Trustworthiness of Results

Transferability

While quantitative research primarily relies on measures of reliability and validity to evaluate the utility of a study, qualitative research is evaluated by its "trustworthiness" (Rossman & Rallis, 2012). Transferability determines if the results are related to any other context and if they can be transferred to other contexts (Saldana, 2015). In this study, the researcher sought to enhance transferability by providing a well interpreted description of the perceptions, experiences, and findings that surrounded participant experiences. By providing acceptable detail to conclude a defined context, the researcher allowed readers the opportunity to decide if the results were transferable to other circumstances.

Dependability

Dependability refers to whether or not the results of the study are consistent over time and across researchers (Lincoln & Guba, 1985; Miles & Huberman, 1994). To address dependability in this study, the researcher relied upon a professional peer. The professional peer was asked to comment on all aspects of the study, particularly data analysis, and results to determine if the conclusions were similar to the anticipated findings.

Triangulation

Triangulation occurred through cross verification of the data by two researchers. The researchers both verified that the data was clear and concise utilizing the researchers code book. A professional peer was asked to review all aspects of this research.

Confirmability

Confirmability assumes that the findings are ultimately reflective of each of the participants' perspectives as revealed in the data, rather than being a personal reflection of my own perceptions or bias. I have enhanced confirmability by stating explicitly my assumptions about the evaluative interest in relationship to my own unique contributions or as they were otherwise brought to my awareness.

Basic Assumptions

The researcher had basic assumptions prior to conducting this study. The researcher assumed that the interview questions were accurate and would reveal detailed responses to answer the research questions. The researcher also assumed that each of the PT members that participated in the study would answer truthfully and that the inclusion criteria for the selection of PT's was sound.

Findings

Six themes and ten sub-themes emerged as a result of this study. As previously stated, there were four research questions associated with this study and the overall purposes were to *describe opportunities for learning* and to understand *to what extent technological tools guide learning* within the Program Teams within Virginia Cooperative Extension organization. There were (*n*=12) participants in this study. The population was comprised of PT members, Chairs, Co-Chairs, all of whom represented the VCE organization in some capacity either as an Extension Agent, State Specialist or State Program Leader. The participants represented 5 program teams within the Virginia Cooperative Extension organization. Table 4.2 displays a representation of participation from each team.

Table 4.1

Representation of Participation

Program Team	Participant Representation
Leadership, Volunteerism & Citizenship	(*n*=3)
Natural Resources & Energy Management	(*n*=2)
Community, Local & Regional Food Systems	(*n*=3)
Family & Community Economics	(*n*=3)
Positive Youth Development	(*n*=1)

Although the sample size for this research study is relatively small, the themes that emerged seemingly capture significant impact regarding opportunities for learning within this social setting. Themes describe a range of experience captured by each of the participants as they have participated within this team setting with the VCE organization. The themes and subthemes which emerged are listed below in table 4.2.

Table 4.2

Research Themes and Sub-Themes

Theme	Sub-Theme
Learning through Collaboration	Team members collaborate with each other
	Team members collaborate with other teams to identify communication gaps and share resources.
	Team leaders provide structure and momentum for participants to collaborate.
	Action plans are developed by Program Teams for participants to buy-into the plan.
Practice through System Processes	
Evaluation as a Central Practice	
Professional Outcomes contribute to Personal Development	Leadership and mentorship abilities contribute to members formulating an identity while participating on their Program Team.
Technological tools allow participants to collaborate at a Distance	Technological tools allow participants to collaborate when operating at a distance.
	Technological tools assist Program Teams with reducing travel expenses.
Limiting the opportunity for full participation	Technological tools inhibit communication and participation in virtual learning opportunities.
	Participants level of comfort of technological tools inhibits opportunities for collaboration.
	Lack of Non-verbal engagement limits the opportunity to participate in learning.

Within a Community of Practice, community members have a shared domain of interest that characterizes them from others (Wenger, 1998). This shared domain creates a more common ground and essentially motivates individuals to actually participate, facilitates their learning, and

provides meaning to their actions (Wenger, 1998). As members pursue this interest through collaborative activities, discussions, information sharing and relationship building, the concept of a community creates the social fabric for enabling collective learning and cultivates interaction and encourages a willingness to share ideas. As this study has revealed, Program Team (PT) members are actual practitioners in their domain and build a shared collection of resources and ideas that they take back to their practice. While the domain provides the general area of interest for the team, the practice is the specific focus where members develop, share and maintain its core of collective knowledge.

Theme: Learning through Collaboration

As PT members collaborate, they are working together within their own team to work through idea sharing and thinking to accomplish a goal. Within the Community of Practice (CoP), participants are provided a learning environment through social participation where they are actively engaged in practice and building an identity related to the CoP they are associated with (Oguz, Marsh & Landis, 2010). Members are becoming aware of their peers' expertise, knowledge, and skills as they engage and interact with each other.

Team Members Collaborate with Each Other

The Program Team environment encourages social participation and interaction allowing participants to collaborate. The majority of participants felt as though they were connected to their PT members as they collaborated amongst each other. They felt as though there was group interaction and collaboration between members. One participant indicated that "we talk about what's working, what's not working, what the survey feedback tells us, you know, clients and attendees give us surveys at the end of every seminar, so what are they saying and also how

attendance is going and what additional marketing should we be doing and who else should we be reaching out to and, and what else do they need. And are we fulfilling our goals because we have goals." Another indicated, "I've really benefited from being a part of this group because they really help me understand what I need to be doing and then also being able to be a part of that collaboration and work well with folks to see that connection as well because if they didn't see that connection, it would be a very different relationship." As participants are collaborating and discussing amongst their PT, they identify not only how this PT contributes to collaboration, but also, aspects of goal setting and benefits of being in the group. Wenger (1998) discusses how social interaction defines the process of learning. As adults collaborate, they are socially engaged with their colleagues and other individuals which shape their opportunities for learning.

Participants indicated that they are actually learning from others as they are engaging in collaborative efforts with their PT members. One participant indicated that "I learned from other folks". Another indicated that "I would say the strongest part of that would just be I'm interacting with people other team members who I wouldn't normally interact with very much if at all, you know, interacting with other colleagues is always a growing experience or should it be." Another participant indicated that "being able to work with people as a program team member and then understanding more about what others are doing." Another participant states, "and I would say really getting to know some more of the people in general you know, our agents, it helps you appreciate each other more."

Not only are PT members creating an environment to learn from others and collaborate, it's also essential to PT members that they gain an understanding of what others are doing with their PT. This theme captures a component of the process of learning as discussed by Wenger

(1998) which consists of being socially engaged with others to shape the opportunity for learning.

Although the majority of study participants indicated that they have experienced collaboration and engagement amongst individual teams and other teams, there are some participants who feel as though there is no constant communication across the PT's. These outliers within the study suggesting a lack of collaboration and interaction, hence inhibiting opportunities for learning. A participant indicated, "So I think that's a pattern, an example of where there are, everyone's kind of doing their own thing from that perspective I have. Not a lot of people seeking collaboration." An additional participant indicated, "I look at it more of we are members of a team and members of that team do things as opposed to the team doing things." PT members suggested they operate seemingly as individuals rather than as a collective team which could pose a challenge for team operation. Another discussed, "we've always struggled with communication with the team keeping in communication."

Team Members Collaborate with other Teams to Identify Communication Gaps and Share Knowledge

Participants of this study expressed that as a Program Team (PT), they not only collaborate and work together as an individual team, but they also collaborate with other teams to share knowledge regarding programming initiatives as well as identify communication gaps within the team that could ultimately affect additional programming initiatives. One participant indicated the collaborative efforts during a conference stating, "those times during the face to face conference are just actually very, very valuable to find out what they did, what worked for them and then to share what we're doing and maybe if we're going through something they've gone through it, like during the year, I can email a whole group of people and say, hey, what do you think about this? I've got all those other extensions folks that are doing [content] programs to

talk to as well." PT members are motivated to collaborate with other teams to glean valuable resources regarding subject matter materials that may be beneficial to their own team. Interacting with other PTs allows participants to collaborate and engage with individuals who are not necessarily part of their designated team

Additionally, VCE opportunities such as professional development conferences present occasions for sharing resources among PT's. Although resource sharing is an essential characteristic of PT collaboration with other teams, the identification of gaps, particularly communication gaps, where there seems to be a lack in communication efforts; seems to be a component of the learning process. One participant states, "We learned a lot from each other and it's so helpful because I can figure out, oh, I see a gap here." Another stated "We have a greater emphasis on improving this communication gap, if you will, because we already know that these great programs are going on. And Agents are conducting wonderful programs and stuff but we need to find a way to connect it better because I think it's already happening." Another participant stated, "and so I've been able to really look at how these other programs work and learn from them professionally and personally." Collaborating as an individual PT or collectively across the spectrum with multiple teams suggests collaborative efforts continue to contribute not only to enhancing a collective community and a structured identity, but also contributing to the practice of constructing knowledge with others as well as creating a meaningful experience. In addition to opportunities for learning the PT members find it imperative to be supportive of each other in the respective areas of work; one participant states, "so having the agent connection is really important for us too because we need to know what's happening and we need to be supportive of each other as well."

Team Leaders Provide Structure and Momentum for Participants to Build and Share Knowledge

As with any organization, leadership is an essential component that shapes the way in which the organization performs. PT members attribute the structure and momentum of their team to leadership, discussing that team operation, the structure of the PT, engagement of members, momentum & guidance contributed to the overall operation of their PT. One participant stated, “I don't know if I should continue to look at ways of how we can encourage program teams to uh, increase membership or provide some kind of incentive for people to be more involved because most of the responsibility have fallen on the leaders to make sure it gets done.” Another stated, “a lot of responsibility, fell on them to get things going and they had to keep it going.” It was also stated, “and then [leaders] need to make sure that our program team members have whatever they need to have for each role in that process.” An additional member stated, “you know, I mean every team member is important, but what I'm seeing is this program team thing really does take someone being able to see the big picture and to kind of generate some energy to get this thing going and keep it going”; “[leader] keeps bringing us back, keeps the conversation at least in the email and people are remembering that part of the program team.”

PT leaders must work to generate discussion and momentum which leads to collaborative learning within the team; the leader essentially works to encourage thinking and practice within their own PT. How the PT functions seems to be of great concern when leading a team. One must completely understand the functionality of team operation. While some members expressed the need for structured instructions, one participant welcomed the opportunity to participate with limited instruction, “you’re able to set your own guidelines and sometimes that’s alright” stated the PT member. Perspectives such as that contribute to the range of experience contributed by participants.

As previously discussed, while there may be a presence of PT leadership providing needed structure for the PT, there were noted outliers that revealed a disconnect in the efforts of communication which could pose some concern in the leadership of the team. One PT member stated, “I will say probably one of the challenges for me and being a part of this program before the state program leadership group came into existence was the communication.” If communication is missing, there may be some concern regarding the opportunity for social learning to occur and the desire for greater collaboration. One participant indicated “we can somehow show that through better coordination, collaboration and communication that we're having maybe a broader collective impact.”

Theme: Practice through System Processes

A Community of Practice lends itself as an opportunity to collect and share artifacts that provide tangible indication of shifts in thinking and practice (Wenger, 1998). CoP’s tend to operate as “social learning systems” where experts of the domain can connect to work through problems, idea sharing, formalize standards, design tools, and cultivate relationships with colleagues (Wenger & Snyder, 2000). In this study, these particular artifacts actually contribute to the overall function of the PT’s. Evaluation tools that are created to assess needs and identify impacts in conjunction with action plans, which are based on emphasis areas designed to be carried out by extension professionals, are an integral component of the overall PT operation. As a component of the CoP, these artifacts contribute to the interchange and understanding of information. Program Team members have a common understanding and recognize what’s applicable to share as well as how to present the information in a useful manner (Wenger, 1998).

Theme: Evaluation as a Central Practice

PT members value impacts within the team. Members are essentially concerned with providing evaluation tools to extension clientele to measure impacts and identify needs. PT members expressed that there is a need for the development of survey instruments, needs assessments and impact mapping resources to measure programming short and long-term goals. The development of these tools will assist with PT members with assessing their needs. The PT's are developing new knowledge and inventing new processes & strategies to develop and interpret their data. One participant stated, "I've tried to help with the development of evaluation tools. I've worked closely with [team member] as well as [team member] to develop some survey instruments." Another participant stated, "from my perspective, some of the things that we're working on internally are formulating a strategy to figure out how we as a team can execute some type of needs assessment for work that's not currently happening." An additional participant stated, "that's our hope would be that we would look at both short term or short-term outcomes, midterm and long-term outcomes; that we've tried to frame it on using a collective impact language." PT members are collectively working together to collaboratively build tools to inform team efforts. Another stated, "And so our biggest struggle, and it's still a challenge for us today, is how do we tell that story because it's so different, we're doing so many different things as a community and it's like how do you put all that together and show what we're doing because every community is different and the volunteers working in it are so different and we're still challenged with that right now, but I think it will always be a challenge for us because we are doing different things but the challenge is we are all doing different things." PT members want to collectively tell their evaluative story of what's being implemented within their community.

While some PT members are seeking to develop and incorporate evaluative tools, other participants actively use evaluative methods within their PT. One participant stated, “I think going forward we'll try to use some of the tools, they're still online tools but they're more for incorporating with like needs assessments um, any insights from people that we don't really know yet that are a part of our network.” Another stated, “[Member] has developed a, Qualtrics survey that goes out every quarter to everyone who has bought into this particular program team and [member] asked certain questions that [member] asks these folks to respond to.” Another stated, “we also conducted a series of 9 listening sessions across the state trying to gauge what people are doing.” These assessment efforts assist with the overall mapping of impacts and goals which emphasizes the efforts being made within the PT.

Theme: Professional Outcomes Contribute to Personal Development

In terms of professional outcomes, the focus of social learning and the Community of Practice transitions to the individual member which cause a broader perspective of identification and social structure (Wenger, 1998). The outcomes and experiences associated with these individual members more clearly defines their forms of belonging which shapes the meaning that more clearly define the practice they are situated in (Wenger, 1998). Although the PT members have engaged with and belong to a particular community, they all possess unique identities and are formulating their own unique contributions (Wenger, 1998).

While participating on the PT, members have identified professional outcomes that they attribute to their participation on the program team. These outcomes are results of learning that has occurred while participating on the program team. PT members connect leadership and mentorship to their performance with their own job and being a resource to others within the VCE organization.

Participants stated, “this has helped me to grow in my leadership skills”; “I probably see myself more as a leader.” As previously stated, mentorship and resource development was also included in this range of experience. A participant stated, “so thinking about how I can help to mentor and provide resources for other personnel.” It was also stated, “I think trying to transition to be less of a direct person providing the programming and I'm transitioning more to a person who's helping to develop resources, so others can create and develop their own programs.” Participants also feel as though these practices contribute to their overall professional exposure within the organization stating that “I think it’s probably a good thing, professionally to just have my name out there to other people within the [State] system as being somebody who has expertise in that area because of the nature of my position.” Professionally, this enables “collective learning” within the shared community, not just within the PT, but the VCE organization. Initiating this interaction encourages willingness of participants to share knowledge and resources.

Theme: Computer Mediated Technology Allows Participants to Collaborate at a Distance

Computer Mediated tools allow communication to operate essentially of time and place (Andriessen, 2005). These tools are assisting PT’s with facilitating opportunities for learning. The tools enhance collaboration and allow participants to efficiently share resources and knowledge as well as enhance the collaborative space for participants to work together and operate as a team. A participant stated that, “I guess another way where we're using technology to is through google drive to document our work and so having a central place where we're not having to send tons of email messages back and forth to get bogged down on email, having a team drive or someplace on Google where we can share our documents with each other and be able to work within those documents simultaneously. We're not overwhelming each other with

email so that has been helpful as well." Another stated, "The Zoom meetings have really changed because I used to say face to face was better but really, you can see the person on the other end. If they have a powerpoint, you can see it. I mean and anybody can upload something for the presentations. That's a game changer. It's been really good."

Additionally, participants stated, "having been able to be online has kept us from having to use a lot of money for traveling expenses." Another participant stated, "delivering some of our trainings through webinars has helped us keep down cost and then having the recording available for people who couldn't attend the webinar has been very helpful." With the incorporation of technological tools, they have changed the way PT members are able to access, participate and facilitate learning.

Theme: Computer Mediated Technology Limits the Opportunity for Full Participation

While tools can allow participants to collaborate at a distance, these tools can also inhibit the opportunity for learning within the team. In terms of full participation, computer mediated tools can limit the opportunity for PT members to fully participate in team meetings & experiences. Distractions may interrupt those moments of learning; level of comfort and lack of non-verbal communication can contribute to the limiting factors of full participation.

Computer Mediated Tools Inhibit Communication and Participation in Virtual Learning Opportunities.

Although technological tools help facilitate opportunities for learning, when implementing the tools for large audiences, PT members felt distracted. One participant stated, "the Zoom meetings are really valuable sometimes if it's just a conference call meeting, you need a face to face because if you have 15 people on the conference call, it's hard." When virtual opportunities such as conference calls and meetings happen, it may be somewhat difficult for

everyone to chime in for discussion and to share their opinions and perspectives. While there are features of the technological tools that can assist with controlling the audience/group such as icons that will allow one to raise their hand, this environment continues to present challenges for the members. An additional PT member stated, “I mean, I've done the conference call meetings or if you're the only one or there’s a few people in the room and only five are calling in, that's not bad, but if all of them, all 15 are calling in, then you don't know who's talking.”

While technological tools can be of great benefit to PT’s by facilitating collaboration, these tools could also hinder or inhibit opportunities for learning through collaboration. In addition to inner office distractions and large audience engagement, connectivity issues serve as a hindrance to learning opportunities. Another stated, “When you are virtual, there’s always that distraction, so when you're not their face to face, you really don't have their full attention.” One participant stated, “I think the face to face meetings are more productive because when you're in an office and you're trying to do a Webinar or whatever, you call in and then you have clients coming in, it never quite works out. You can't lock your door, it’s not like you're on campus and you can lock your door and hide for a while.”

Although there were inhibitors associated with the inclusion of computer mediated tools while trying to create an opportunity to learn and work together, it was stated that, “we just have to embrace technology!” As resources and funding opportunities continue to not be as readily available, the use of technological tools will become a necessity for organizational operation and function.

Participants Level of Comfort of Computer Mediated Tools Affects Opportunities for Collaboration.

Participants also discussed level of comfort with the technological tools as an inhibitor to opportunities for collaboration. One participant stated, “I can't think of a major technology fail

that we've had but it could be that there are individuals on the team who are much less comfortable with using some of those technology and that has affected their participation." Another participant stated, "I mean it could be like I use google drive 1000 times a day, I am completely comfortable with files being stored that way and I have it all integrated on my computer and everything. But other people maybe don't, if they don't use it that regularly, maybe they have a harder time finding the files or knowing to put their files in there. Something like that." It was also stated that "some folks are more comfortable than others but for me I have to get used to it and that could be a hindrance if you're not comfortable with it." Although level of comfort can hinder opportunities of learning for some participants, some are optimistic with one participant stating, "the more we use it, the better we will get at using it!"

Lack of Non-Verbal Engagement Limits the Opportunity to Participate

Non-verbal engagement is also a factor that potentially limits the opportunity to participate. PT members appreciate being able to non-verbally communicate and respond within their team, which furthermore suggests that technological tools could present barriers to learning such as contributing to impersonal relationships. One participant stated, "Where the flaw with technology is, is that you cannot communicate as well." Another participant stated, "I think that face to face allows you to really read like body language and really understand how they're feeling and how they're truly thinking about things, you can't see all of that online. And I really miss that social component." Body language of participants is an important factor when it comes to thinking and practice in the concept of learning. Participants value the opportunity to be in a face-to-face environment where they can socially interact and engage with one another; one participant stated, "a lot of times the synergy of that when someone says something and then it, oh yeah, light bulbs come on and then it's just these amazing things come out of what, of being

together." PT members want to be able to recognize facial expressions and body language as they feel that those attributes contribute to fully engaged learning opportunities. Another stated, "I am a kinesthetic learner where I have to touch and feel and show and not saying that that's for everybody but I find that I connect with people better when I'm face to face with them because I read their body language because if I'm lecturing and I see that I'm losing you I will try to give you an example so I can try to bring you back into the lecture and when you leave I can see those light bulbs that you consider the a-ha moment." Communicating with individuals and not feeling as though you are communicating with a computer screen is essential. "The nuance things, you don't get through social media at all. You don't get the body language. You don't interact with the human, you're interacting with the machine and it's like I don't think people are as open but a little bit more reserved."

Discussion

The findings from this study provide insight into factors which contribute to opportunities for learning for Program Team members with themes generated including learning through collaboration and system processes, professional outcomes and the inclusiveness of technological tools.

Social Learning

Themes emerged discussing that PT members learn through collaboration. PT members not only work collaboratively within their own PT, they also work collaboratively with other PT's. McDermott (1999), suggest that when collaborating in teams or groups, members of the team are grouped together and share a common goal. As one of the components of Communities of Practice, team members are situated and operating within a shared domain where they are generating and sharing knowledge regarding a similar area of interest (Wenger, 1998). Within

the PT's, members generate ideas and resources as a result of focusing on a particular area of interest. Team members conclude with Action Plans and artifacts of which are shared with Extension Agents for buy-in. Although some PT members work together and collaborate within their team, some members may feel as though there is a slight gap in the communication generated within the team which could inhibit opportunities for learning.

Within collaborative environments, the make-up of teams or groups consists of individuals representing different professions or even different positions within the organization (McDermott, 1999). The VCE PT's consist of Extension professionals who serve in the capacity of PT member, Chair or Co-chair. While each member contributes to some degree within the PT in hopes of providing their own expertise to the overall operation, members rely heavily on the leaders or Chairs of the PT's to provided structure and momentum for the Team. According to Katzenbach & Smith (2015), effective groups need little time to structure their purpose and objectives, the leader usually establishes it and meetings are run utilizing prioritized agendas. PT members discussed operating as members of a team doing different things with visible disconnect of momentum and structure which could be an evident matter due to the lack of communication generated by the PT leader. Lack of communication and structure could hinder PT's from coordinating collectively as a PT and inhibit future opportunities for collaboration.

The Community of Practice

As it's been previously discussed in the literature, within Communities of Practice, group members are able to share knowledge, learn together, and create common practices within their shared domain of interest (Wenger, 1998). Prior to this study, it was not revealed that the PT's were operating as a Community of Practice, however, as findings have generated, they have revealed that to some degree, PT's and members are operating situated learning environments.

They are not just an ordinary group who decides to meet. This community has allowed members to gain an identity defined by a shared domain of interest that is signified by engaging in collaboration and sharing of resources such as Action Plans and evaluation mechanisms. They are in fact able to build relationships that enable them to learn from each other (Wenger & Lave, 2001). Members of PTs are practitioners who develop a shared collection of resources which include but are not limited to particular experiences and tools as well as ways of addressing recurring problems (Wenger & Lave, 2001).

According to the literature, Community members help each other solve problems and even develop new approaches or tools within the field (Wenger, McDermott, & Snyder, 2002). PT members revealed that through team collaboration and practice within the team, the need for tools such as evaluation and needs assessment is essential to assisting the team map impacts identify needs. While some PT members imply that they currently utilize these artefacts/tools to assess these needs, some PT members seek to develop tools to utilize in field with Extension Agents. This is important as it leads a portion of the overall responsibility of the team.

Additionally, members appreciate the ability to learn from other PT members and to rely on the knowledge of others to help them formulate a greater understanding of their roles and responsibilities (Wenger, McDermott, & Snyder, 2002). Shared ideas and experiences may continue to help PT members develop a shared way of doing things, hence creating a set of common practices to follow and formalizing those guidelines and standards.

Being that Communities of Practice focus on topics that people often feel passionately interested in, they can become important sources of individual identity (McDermott, 1999). Findings from this study revealed that PT members contribute their affiliation with a PT to identifying professional outcomes such as leadership and mentorship. Although the PT members

have engaged with and belong to a particular community, they all possess unique identities and are able to formulate their own unique contributions (Wenger, 1998).

Technology

While the use of computer mediated tools allow PT members to collaborate at a distance, findings indicated that the use of these tools may inhibit opportunities for learning, altering the experiences of the participants. Factors such as an increased number of participants participating on a conference call or even participating on webinars may cause some form of distraction. PT members may feel as though experiences such as this may benefit from having a mediator or facilitator present to bring structure to the meeting, assist with guiding the set agenda and generate some sort of control mechanism for the members who are participating. Findings from previous research indicate that lack of familiarity with online technologies and subsequently a lack of understanding or interest in how online communication could assist their work (Gray, 2004). Figure 4-1 provides a conceptual framework discussing the related findings of this study.

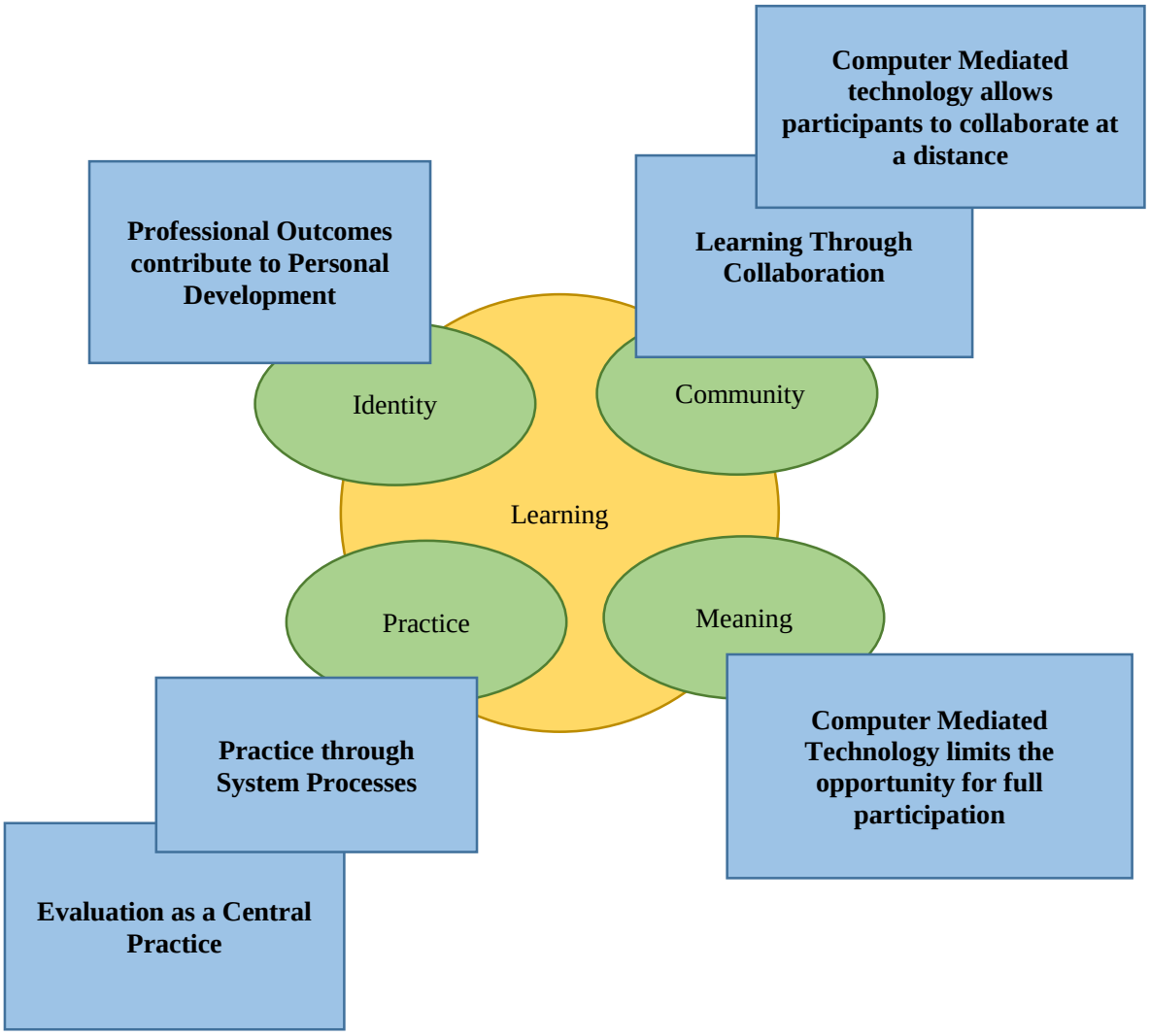

Figure 4-1. Conceptual model providing an explanation of findings. Adopted from Wenger (1998)

Limitations of this Study

While the researcher tried to reduce the limitations significantly from the study to increase trustworthiness and validity some limitations still arose. Due to the influx in participants daily schedule, this may have affected the rate at which participants agreed to participate. Additionally, the findings of this small sample study are specific to the efforts of this [State] Program Team. Due to the fact that there may be some strong opinions and perspectives regarding the functionality of the Program Team, some PT members may have felt the need to

verbally discuss those opinions which may have contributed their participation or non-participation within the study. Individuals may have also volunteered to participate in the study to express their perceived notions regarding the use of technological tools guiding opportunities for learning.

Conclusion & Recommendations

Program Team members expressed that learning through collaborative spaces and system processes contributes to how they experience social learning within their PT. Working collaboratively within their team and with other teams leads the researcher to believe that PT members are subsequently collaborating and learning together. Additionally, they seek to incorporate tools to map impacts and assess needs which contributes to a portion of the PT's operational responsibilities. PT members also attribute the abilities of team leaders to guide them as an overall team; not only do members themselves attribute this concept of leadership, PT leaders also feel as though they portray those abilities in an effort to lead their team. In addition to operational factors which contribute to perspectives of social learning for PT members, PT members attribute technological tools to providing guidance as well as some inhibitors to facilitating opportunities for learning. While technological tools afford PT members benefits such as cost savings and the ability to collaborate at a distance; there are also challenges faced such as lack of non-verbal engagement and distractions.

As a result of the findings, the following recommendations have been made regarding for future research. Even though we now know that learning through collaboration contributes to opportunities to learning, it's still imperative to identify any gaps in team communication that are potentially hindering opportunities for learning. Additional investigation could also reveal to what extent leader attributes contribute to positive team leadership. Although it was revealed that

team leaders provide structure and momentum, there was a range of experience that contributed to some PT members feeling as though through enhanced coordination and communication that there could in fact be broader impacts made. If there are leader attributes that contribute to the coordination of PT operation, these attributes could be revealed to potentially offer strategies for greater team leadership. Artifacts and resources are imperative to PT members to utilize in an effort to map impacts and identify needs, further dissection could reveal how these tools actually contribute to learning and practice for PT members.

The following recommendations have been made for practice as a result of the emerging findings:

- Administrators should encourage greater collaboration between teams to further encourage learning across a system-wide organization.
- When utilizing technological tools to encourage opportunities for learning, administrators should be aware of potential inhibitors such as level of comfort and offer additional Professional Development opportunities to make members feel more comfortable utilizing the tools.
- Practitioners should be aware of limitations due to the lack of non-verbal engagement and provide alternative practices to eliminate this inhibitor.
- Practitioners should offer Professional Development opportunities for leaders discussing how to effectively lead a team.
- Practitioners should encourage the PT's to continue collaborating with other teams to work towards collaborative efforts.

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Chapter Five

Conclusion

Chapter five includes an abbreviated overview of the need for the study, purpose and objectives, followed by a conclusive discussion regarding the overall findings based on the research questions and objectives. Recommendations for practice and future research are also included.

Significance of the Study

Learning in a social capacity happens all around us. Within the workplace, adults are constantly involved in socially engaging networks on a daily basis. Wenger (1998) suggest that learning happens through social engagement which further suggests that individuals are socially engaged in any capacity are learning. As this collaboration takes place, communities are formed insinuating the formation of Communities of Practice within the workplace. Throughout this process, members are engaged in a process of collective learning within a shared domain of interest. Although this collective approach to learning is apparent, there is still some disconnect as to what participants attribute to social learning within these communities and how the use of technological tools guides those opportunities for learning. Therefore, the purpose of this dissertation was to identify adult learner experiences contributing to social learning in situated learning spaces for professional development and collaborative learning with the inclusion of computer mediated tools in the workplace. By clearly understanding the objectives for which this dissertation was designed, this sudy will enable the Extension organization to further enhance learning opportunities for Extension professionals and clientele by implementing computer mediated technologies for virtual collaborative learning opportunities, provide professional

development opportunities virtually for learners who are constrained to these learning opportunities by time and space, and strengthen the relationship among Extension professionals both near and far.

Methodology

Qualitative methods were utilized to conduct and analyze data pertaining to this dissertation. Participants participated in in-depth phone interviews as the researcher sought to understand the deep meaning of their personal experiences and how they articulated those experiences (Rossman & Rallis, 2012). Each of the phone interviews lasted approximately 1-hour. Incorporating a phenomenological methodology allowed the researcher the opportunity to gain insight into the phenomenon of social learning demonstrated by Extension professionals.

Summary of Findings

Chapter 2. A Review of Literature: Virtual Professional Learning in Cooperative Extension through the Lens of Wenger's Social Theory of Learning

This literature review chapter discussed the theoretical framework of Wenger's social theory of learning for workplace learning that involves the use of technology. Wenger (1998) suggests that "learning does not always take place in the classroom or any other formal settings, learning has no official guideline to how or when it occurs" (p. 212). As virtual learning continues to become more prominent, adult learners will need to continue building a network of communities to socially collaborate and learn. Mediated by online tools, virtual opportunities will continue to provide adult learners with learning opportunities equivalent to that of traditional face-to-face modes. While this technological opportunity may present disadvantages such as access to the technology for adult learners, social disadvantages, and the lack of hands on

learning experiences for the audience, there is still an opportunity to enhance learning opportunities with distance education. As technology has allowed building new knowledge and interaction to take place at a distance, virtual learning can offer great solutions as adult learners engage in these programs in professional settings.

Chapter 3. An Investigation of Professional Learning through Participant Experience in a Cooperative Extension Virtual Professional Development Conference

This study captured the experience of Extension agents who participated in a virtual, professional development conference, highlighting essential thoughts and feelings regarding participants self efficacy of virtual technologies, internal and external factors which may contribute to ones participation in virtual opportunities, characteristics of an effective e-learning professional development environment and identifying roles of which each characteristic plays in influencing behaviorial intent of participant's future usage. Although this study did not inform the effectiveness of the model within the Extension setting, there were interesting findings that surfaced which speak to the perceptions of the actual Extension conference and provided themes which can contribute to the planning and execution of future virtual professional learning opportunities.

Data was collected and analyzed utilizing a qualitative approach. An initial survey was sent to all Extension Agents after the virtual conference. The survey included demographic information and an open-ended question gauging participants overall experience using Webex technology during virtual conference experience. At the conclusion of the survey, participants were given the option to be contacted for a follow-up phone interview. There were (n=63) participants who completed the survey and (n=9) participants who agreed to participate in a follow-up phone interview. Six themes emerged from the data that capture participants overall

perception regarding the experiences of this virtual conference and comparison with previous conference experiences in face-to-face settings.

Chapter 4. Contributing Factors to Social Learning Experiences in Cooperative Extension and How Technological Tools Contributes to Opportunities for Learning

The purposes of this study were to describe opportunities for learning and to understand to what extent technological tools guide learning within the Virginia Cooperative Extension organization. Wenger (1998) discusses how social interaction defines the process of learning. As adults learn, they are socially engaged with their colleagues and other individuals which shape their opportunities for learning. As technological tools are increasingly an integral part of this environment, there is some concern regarding the social aspect of the learning.

Twelve PT members participated in in-depth phone interviews as the researcher sought to understand the deep meaning of a person's experiences and how they articulated those experiences (Rossman & Rallis, 2011). Incorporating a phenomenological methodology not only allowed the researcher the opportunity to gain insight into the phenomenon of social learning demonstrated by Extension professionals who were members of a Program Team.

The findings from this study, which included of six emergent themes and 10 sub-themes, provided insight into factors which contribute to opportunities for learning for Program Team members with themes generated to include learning through collaboration and system processes, professional outcomes and the inclusiveness of technological tools. However, to further digest this study, emerging themes could be recommended for further analysis to gain additional perspectives from other extension professionals to further engage to see if in fact these themes resonate with others within the organization. When engaging in a community, learners are able to develop a sense of membership and are more inclined to identify with the community itself. PT

members feel as though they belong to this specific community and are accepted by others with whom they share the practice, developing a sense of commitment to structure and identity (Handley, Sturdy, Fincham & Clark, 2006). Often through collaboration, participants need to feel that they belong and are committed to the nature of the shared domain. Through collaboration, participants are able to share knowledge and resources while contributing to the overall domain and develop a sense belonging.

Discussion, Conclusion & Recommendations for Future Research & Practice

One of the things that I've noticed throughout this study is the influx in the use of computer mediated technology to assist adult learners with collaboration and also getting their jobs done. While it's been determined that adults socially engage and collaborate with each other on a regular basis, they also rely upon the use of technology to encourage opportunities for collaboration within the workplace. In addition to utilizing technology to participate in virtual professional development opportunities, these tools are utilized to bring members of a working community together to ultimately bridge a gap escalated by distance and encourage collaborative efforts among Extension personnel within the organization. Extension Adinistrators, Specialists', and Agents can work at a greater capacity together with the use of these tools. Social learning has escalated beyond face-to-face interaction, socially, learners are afforded the capacity of connecting and collaborating without many limitations. The opportunities brought on by the infrastructure of incorporating technology will continue to enhance the way we as adult's work and collaborate in the future.

This dissertation has contributed knowledge regarding the use of computer mediated technologies for professional development and collaborative learning within the Extension organization. This research should encourage Extension Administrators to be inclusive of

computer mediated technologies such as webinars, video-conferencing, and virtual chatting options for professional development and other collaborative learning. The implementation of virtual communities in situated learning environments have also been explored for use in the Extension organization. The findings from this study have provided insight regarding social learning and how computer mediated tools help facilitate those opportunities. While these findings are centralized to the specifics of the study, these findings could be applied to the entire Extension organization. Collaborative efforts and system processes affect the way in which Extension professionals engage with their clients and other stakeholders. Communication and collaboration are the primary means of operation within any Extension organization and the use of technology only enhances the communication efforts by providing an alternative method to being socially engaged.

The following recommendations have been made for further research: Research should be conducted regarding the design and implementation of tools and resources to be utilized within the Extension organization. This study has provided insight regarding ways participants experience social learning as well as the role technology contributes to those opportunities for learning which provides leverage for Administrators to further dissect the research to include designing tools and resources Extension professionals can take advantage of while learning in the workplace. Additional research should also include the role Administrators portray in terms of preparing leaders to take on leadership positions. Being able to identify and design resources for leadership development may continue to encourage team structure. Lastly, identifying professional development opportunities to provide guidance for participants utilizing technological tools within the work place collaborative learning. Utilizing technology can

present many factors, both positive and negative which could greatly affect the participants willingness to utilize them. The following recommendations have been made for practice: Extension Administrators should encourage more opportunities for learning via virtual approaches. As this trend becomes more widely distributed, Extension professionals should be immersed in significantly more virtual opportunities in an effort to decrease the level of comfort experienced; Extension Administrators should continue to encourage collaborative efforts across PT's and the Extension organization as a whole as a response to enhance organizational impacts and assessment of needs; Extension Administrators should provide Professional Development opportunities to serve as an approach to learning in terms of individuals being able to gain an understanding of using technological tools.

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APPENDIX A Chapter 3-Recruitment e-mail

Greetings,
My name is Shannon Wiley; I am a Ph. D student attending Virginia Tech in the department of Agricultural, Leadership, and Community Education under the advisement of Dr. Hannah Scherer. You are receiving this email as an invitation to participate in a research study that I am currently conducting involving Extension educators. Last year at Winter Conference, I conducted a research study that focused on the perceptions of e-learning demonstrated by current Extension educators. A few of those findings were as follows:

- **48.57% (*n=51*)** of respondents agreed that e-learning can be utilized as a tool to enhance job performance.
- When asked about the effectiveness of e-learning as an approach to learning in professional development, **61.9% (*n=65)*** agreed that it was an effective approach.
- **46.15% (*n=48)*** of respondents disagreed with the statement that e-learning is more effective than meeting face-to-face.
- **54.2% (n=57)** of respondents believe that it is more cost effective to participate in e-learning professional development opportunities rather than meeting face-to-face.

As a result of that study, interesting findings surfaced which led to this current research study which will investigate factors associated with Extension agents' willingness to use instructional technology for professional development in the workplace. Further more, these factors may provide useful information that could assist Extension Directors with planning future web-based opportunities for Extension employees.
In an effort to carry out this study, I would appreciate your participation in a 3-5-minute survey about your experience with the 2017 VCE Winter Web-conference. In the survey, you will also be asked about your willingness to participate in a follow-up phone interview. Your responses will be kept completely confidential.
Use this link to access the survey:
Thank you in advance for your participation in this study.

APPENDIX B Chapter 3-Recruitment e-mail for participants (invitation to schedule interview)

Good Morning,

My name is Shannon Wiley, I am a Ph.D. student in the department of Agricultural, Leadership, and Community Education at Virginia Tech. I am conducting a research study investigating factors associated with Extension agents' willingness to use instructional technology for professional development in the workplace. I would like to invite you to be a part of this research study by participating in an interview to gain insight regarding your experience with Web-Ex technology during the VCE winter conference. The interview is a follow-up to the survey you previously completed. Attached, you will find a consent form for your review. As you are reviewing the form or have additional questions regarding the study, please feel free to contact me via e-mail or phone at shann83@vt.edu or 336-340-3736. If you are willing to participate in this study, please confirm an interview date and time utilizing the attached Doodle Poll. The link is included below. The interview should last approximately 45 minutes. Thank you for your consideration.

APPENDIX C Chapter 3-Consent Form

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants
in Research Projects Involving Human Subjects

Title of Project: A Phenomenological Study Investigating Extension Agent Behavioral Intent in Relation to E-learning, technological Approaches (Web-Ex).

Investigator(s):
Shannon Wiley (Co-investigator) **shann83@vt.edu/336-340-3736**

Hannah Scherer (Principal Investigator) **hscherer@vt.edu/540-231-1759**

I. Purpose of this Research Project

Understanding learners' attitudes toward e-learning provides a critical foundation regarding how one can and should incorporate e-learning and its technological approaches for professional development. While individual perceptions of e-learning capture personal attitudes towards e-learning in general, this research study will investigate factors which may be associated with Extension agents' willingness to use instructional technology for professional development in the workplace, additionally focusing on how these factors will ultimately affect continued use. Furthermore, these factors may provide useful information that could assist Extension Directors with planning future web-based opportunities for Extension employees.

II. Procedures

Should you agree to participate, you will be invited to participate in a 30-60 minute audio recorded phone interview with the co-investigator of the the project in which you will have the opportunity to discuss your experiences with the 2017 VCE Web-conference. Recordings will be transcribed and analyzed for themes. Results of this analysis will be presented at professinal conferences as well as publications in journals.

III. Risks

There are no forseeable risk regarding this study.

IV. Benefits

An understanding of Extension educator' experiences utiizing the e-learning tool (Web-Ex) for professional development will be one of the main areas of focus for this research project. The findings from this research project will offer further research opportunities to assist with determining the intent to utilize e-learning tools for future professional

development opportunities. Data collected may also impact the quality of programs within Virginia Cooperative Extension.

No promise or guarantee of benefits has been made to encourage you to participate.

V. Extent of Anonymity and Confidentiality

Your participation with this study will be kept confidential, no identifiable information will be released for publication/presentation purposes.

The Virginia Tech (VT) Institutional Review Board (IRB) may view the study's data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

Note: in some situations, it may be necessary for an investigator to break confidentiality. If a researcher has reason to suspect that a child is abused or neglected, or that a person poses a threat of harm to others or him/herself, the researcher is required by Virginia State law to notify the appropriate authorities. If applicable to this study, the conditions under which the investigator must break confidentiality must be described.

VI. Compensation

There is no compensation for participating in this study.

VII. Freedom to Withdraw

It is important for you to know that you are free to withdraw from this study at any time without penalty. You are free not to answer any questions that you choose or respond to what is being asked of you without penalty.

Please note that there may be circumstances under which the investigator may determine that a subject should not continue as a subject.

Should you withdraw or otherwise discontinue participation, you will be compensated for the portion of the project completed in accordance with the Compensation section of this document.

VIII. Questions or Concerns

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document.

Should you have any questions or concerns about the study's conduct or your rights as

a research subject, or need to report a research-related injury or event, you may contact the VT IRB Chair, Dr. David M. Moore at moored@vt.edu or (540) 231-4991.

(Note: each subject must be provided a copy of this form. In addition, the IRB office may stamp its approval on the consent document(s) you submit and return the stamped version to you for use in consenting subjects; therefore, ensure each consent document you submit is ready to be read and signed by subjects.)

APPENDIX D Chapter 3-Verbal Consent

Hi,

My name is Shannon Wiley, I am a Ph.D. student in the Department of Agricultural, Leadership, and Community Education at Virginia Tech. I am conducting research investigating factors associated with Extension agents' willingness to use instructional technology for professional development in the workplace. You are being contacted because you have indicated that you are willing to participate in a phone interview regarding this matter. I would like to ask you questions about your experiences regarding utilizing Web-Ex technologies during the VCE winter conference. This will take the form of a qualitative interview that should take no longer than 45 minutes. Your identity is confidential and your participation in this interview is completely voluntary. Do you have any questions about the research project? **(Wait for answer.)** I will be documenting your consent to participate. May I begin the interview?

APPENDIX E Chapter 3-Interview Questions

1. Please speak about your face-to-face professional development experience vs. WebEx?

2.Think of and describe a session you participated in. What was it like to engage with other colleagues virtually? What was it like to engage with your instructor?

3. Describe the benefits of using Web-Ex technology for the VCE conference?

4. Describe the limitations of using Web-Ex technology for the VCE conference?

5. From your perspective, what needs to be considered when utilizing Web-Ex technology as a platform for professional development?

6. Can you briefly describe your preferred method (e-learning vs. face-to-face) of participating in professional development and why?

   a. Describe how identified professional and personal factors affect your experience in participating in Web-Ex e-learning professional development opportunities? (What are those factors)
   b. Describe the role professional and personal factors have on your willingness to participate in additional Web-Ex e-learning opportunities?
   c. If you had to design a professional development workshop in an e-learning setting, how would you design that workshop to be most effective?

7. From your perspective, how has participating in this professional development opportunity via WebEx affected your overall willingness to participate in additional virtual opportunities in the future?

8. Describe how you felt while you were participating in this Web-Ex e-learning opportunity?

9. Have you used WebEx with your clientele? If yes, in what way? If no, why not? Do you plan to in the future?

APPENDIX F Chapter 3-Screening Survey

1. Age
    a. 35 or less
    b. 36-45
    c. 46-55
    d. 55+

2. VCE Program Area
    a. 4-H
    b. Agriculture & Natural Resources
    c. Family & Consumer Sciences
    d. SNAP-ED
    e. Horticulture

3. Describe your experience utilizing the Web-Ex technology during the VCE Winter Conference.

4. Would you be willing to participate in a 45-minute follow-up phone interview within the next few weeks? If so, please include your name, email, and phone number below. This information will be kept completely confidential and not shared.

APPENDIX G Chapter 3-Interview Guide-VCE Winter Conference WebEx Perceptions

Hello, thank you for agreeing to participate in this phone interview regarding your experience with WebEx instructional technology during the Virginia Cooperative Extension Winter Conference. Before we start the interview, do you have any questions about this process? (Pause) I would like to start by having you focus on your participation in the conference and the role of which technology played.

1. Please speak about your face-to-face professional development experience vs. WebEx?

<table>
<tr><td colspan="2">Response:</td></tr>
<tr><td rowspan="3">Follow-up:</td><td>Tier 1 Characteristics:</td></tr>
<tr><td>Tier 2 Characteristics:</td></tr>
<tr><td>Tier 3 Characteristics:</td></tr>
<tr><td colspan="2">Interviewer Concluding Notes:</td></tr>
</table>

2. Think of and describe a session you participated in. What was it like to engage with other colleagues virtually? What was it like to engage with your instructor? **RQ1**

<table>
<tr><td colspan="2">Response:</td></tr>
<tr><td rowspan="3">Follow-up:</td><td>Tier 1 Characteristics:</td></tr>
<tr><td>Tier 2 Characteristics:</td></tr>
<tr><td>Tier 3 Characteristics:</td></tr>
<tr><td colspan="2">Interviewer Concluding Notes:</td></tr>
</table>

3. Describe the benefits of using Web-Ex technology for the VCE conference? **RQ1**

<table>
<tr><td colspan="2">Response:</td></tr>
<tr><td rowspan="3">Follow-up:</td><td>Tier 1 Characteristics:</td></tr>
<tr><td>Tier 2 Characteristics:</td></tr>
<tr><td>Tier 3 Characteristics:</td></tr>
<tr><td colspan="2">Interviewer Concluding Notes:</td></tr>
</table>

4. Describe the limitations of using Web-Ex technology for the VCE conference? **RQ1**

<table>
<tr><td colspan="2">Response:</td></tr>
<tr><td rowspan="3">Follow-up:</td><td>Tier 1 Characteristics:</td></tr>
<tr><td>Tier 2 Characteristics:</td></tr>
<tr><td>Tier 3 Characteristics:</td></tr>
<tr><td colspan="2">Interviewer Concluding Notes:</td></tr>
</table>

5. From your perspective, what needs to be considered when utilizing Web-Ex technology as a platform for professional development? **RQ3**

<table>
<tr><td colspan="2">Response:</td></tr>
<tr><td rowspan="3">Follow-up:</td><td>Tier 1 Characteristics:</td></tr>
<tr><td>Tier 2 Characteristics:</td></tr>
<tr><td>Tier 3 Characteristics:</td></tr>
<tr><td colspan="2">Interviewer Concluding Notes:</td></tr>
</table>

6. Can you briefly describe your <u>preferred method</u> (e-learning vs. face-to-face) of participating in professional development and why? **RQ1**

Response:	
Follow-up:	**Tier 1 Characteristics:**
	Tier 2 Characteristics:
	Tier 3 Characteristics:
Interviewer Concluding Notes:	

   a. Describe how identified professional and personal factors affect your experience in participating in Web-Ex e-learning professional development opportunities? (What are those factors) **RQ1, RQ2**
   b. Describe the role professional and personal factors have on your willingness to participate in additional Web-Ex e-learning opportunities? **RQ1, RQ2, RQ3**
   c. If you had to design a professional development workshop in an e-learning setting, how would you design that workshop to be most effective? **RQ3**
7. From your perspective, how has participating in this professional development opportunity via WebEx affected your overall willingness to participate in additional virtual opportunities in the future? **RQ2**

<table>
<tr><td colspan="2">Response:</td></tr>
<tr><td rowspan="3">Follow-up:</td><td>Tier 1 Characteristics:</td></tr>
<tr><td>Tier 2 Characteristics:</td></tr>
<tr><td>Tier 3 Characteristics:</td></tr>
<tr><td colspan="2">Interviewer Concluding Notes:</td></tr>
</table>

8. Describe how you felt while you were participating in this Web-Ex e-learning opportunity? (**General**)

Response:	
Follow-up:	**Tier 1 Characteristics:**
	Tier 2 Characteristics:
	Tier 3 Characteristics:
Interviewer Concluding Notes:	

9. Have you used WebEx with your clientele? If yes, in what way? If no, why not? Do you plan to in the future?

<table>
<tr><td colspan="2">Response:</td></tr>
<tr><td rowspan="3">Follow-up:</td><td>Tier 1 Characteristics:</td></tr>
<tr><td>Tier 2 Characteristics:</td></tr>
<tr><td>Tier 3 Characteristics:</td></tr>
<tr><td colspan="2">Interviewer Concluding Notes:</td></tr>
</table>

APPENDIX H Chapter 4 A priori table

Proposition	Supporting Literature	Research Question
While participants are working together they are essentially learning. The team environment encourages social participation and interaction allowing participants to collaborate.	Wenger (1998) discusses how social interaction defines the process of learning. As adults learn, they are socially engaged with their colleagues and other individuals which shape their opportunities for learning	**RQ1: In what ways do participants experience social learning within their Program Team?**
As participants are collaborating within these teams, there is an opportunity for learning to happen in this social environment. As learning is happening, there are outcomes that can be achieved such as building and sharing knowledge & enhancing skills and abilities and making meaning of knowledge. Learning also contributes to the process of practice which contributes to the construction of knowledge.	Wenger (1998) discusses how social interaction defines the process of learning. As adults are learn, they are socially engaged with their colleagues and other individuals which shape their opportunities for learning	**RQ2: What types of learning outcomes do participants associate with their Program Team?**
The technological tools utilized can enhance the collaborative space for participants to work together.	By clearly understanding how these technological tools can guide learning for Extension professionals, the Extension organization as a whole will conceptually be able to increase and enhance program and community outreach outcomes, constructively develop additional online professional learning opportunities and strengthen the global relationship among Extension professionals both near and far.	**RQ3: In what ways do technological tools guide and facilitate learning and outcomes for participants within their Program Team?**

1) The technological tools could present barriers that may hinder collaboration. 2) There are current barriers associated with technological tools that hinder collaboration.	Although the addition of technological tools may increase the connectivity of ideas shared and resource development for Extension professionals and their clientele; there are foreseen barriers associated with the use of technology that may cause some underlying issues for participants. These barriers ultimately affect the social participation of participants which could alter adult learner willingness to fully adopt technology-enhanced learning opportunities as a learning approach towards professional development.	**RQ4: In what ways do the technological tools inhibit learning and outcomes for participants within their Program Team?**

APPENDIX I Chapter 4 Code Book

RQ	Theme	Focused Codes	Definition	Open Codes
RQ1. In what ways do participants experience social learning within their Program Team? ***IDENTITY & COMMUNITY- Building upon and sharing Knowledge (Becoming the expert) Building upon knowledge and reflecting as well as building trust*** ***ACTION PLANS- PRACTICE/DOING & EXPERIENCE/MEANING- Members work together to design action plans based on their own nature of work/content expertise and extension agents buy-in to the plan. Team members seek to evaluate the progress of programming initiatives. Members collaborate to***	**Learning through Collaboration** ***Sub-Themes*** Team members collaborate with each other.	Collaboration & Communication with team members	Team members work together within their own team to work through idea sharing and thinking to accomplish a goal.	Connection, collaboration, group interaction, increased communication, communication-challenge, enhanced collaboration, enhanced coordination
	Team members collaborate with other teams to identify communication gaps and share resources.	Collaborating with other Program Teams	Team members work together with other teams to recognize programming gaps and share knowledge to accomplish a goal.	Collaborating (with other extension professionals), learning from others, gaps, programming gaps,
	Team Leaders provide structure and momentum for participants to collaborate.	Program Team Leadership	Providing guidance, structure, direction & leadership to the program team.	Function, team operation, facilitator, guidance, structure, stability, engagement of members, momentum, leadership pattern, learning from others, transition
	Evaluation as a Central Practice	Evaluation Needs	The need to evaluate programming impacts and	Need for survey instruments, evaluation tools-qualtrics, needs

design action plans			outcomes utilizing an evaluation tool.	assessment, impact, mapping inputs, program goals-long term, short term; pathway model, collaboration with specialist
	Practice through system processes		Comprising the action plan and sharing that plan with others.	System, learn together, learning from others, sub-group, learning from other teams, build connections, team value, team tasks, skills and abilities, train the trainer, resource sharing, team roles-leading initiatives, sharing responsibilities, identify needs of gaps, closing gaps, collaboration-extension professionals; networking, teamwork, programming, community, idea sharing, needs assessment, professional development-facilitate, participate
RQ2. What types of learning outcomes do participants associate with	**Professional Outcomes**	Leadership skills, growth professionally, mentorship, skill building-technology,	Results of professional learning that has occurred while participating	skills, professional growth, learning outcomes, prior knowledge, previous

their Program Team? ***IDENTITY & MEANING-participants identify outcomes that they attribute to their participation on the program team. They are reflecting on their experience and making meaning of that experience.***		prior knowledge contributing to experience	on the program team.	knowledge, participant experience, participant expectation, leader, leadership, leadership training, mentorship, skill building-technology
RQ3. In what ways do technological tools guide and facilitate learning and outcomes for participants within their Program Team? ***COMMUNITY & PRACTICE-The tools are helping to facilitate the learning that is happening during the online meetings. The tools enhance collaboration and allow participants to share resources and knowledge.***	**Technological tools allow participants to collaborate at a Distance** ***Sub-Themes*** Technological tools allow participants to collaborate while operating at a distance. Technological tools assist Program Teams with reducing travel expenses.	Use of technological tools, meeting online-organized, generational-age; recorded sessions, Program Team Operation, scheduling meetings, hosting meetings, event management; Connection regardless of distance, enhanced collaboration, enabled interaction, storing of info, resource sharing, teaching aides, communication with others, conducive to	An explanation of how technological tools are utilized to facilitate learning for participants within their program team.	Implementation of technology, tools, zoom, doodle, google drive, documentation, meeting online-organized, generational-age; recorded sessions, tools for PT operation-scheduling meetings, hosting meetings, event management; Fast, Connection regardless of distance, enhanced collaboration, enabled interaction, storing of info, resource sharing, teaching aides, communication with others, conducive to

		small audiences, reduced expense, meeting alternative, documentation purposes		small audiences, reduced expense, meeting alternative, documentation purposes,
RQ4. In what ways do the technological tools inhibit learning and outcomes for participants within their Program Team? ***MEANING & IDENTITY & COMMUNITY & PRACTICE-The tools hinder or inhibit the construction of knowledge and resource* sharing. *Participants are not engaged in the tech tools which could inhibit community networking and learning.*** ***Face to Face enables this interaction for some***		Program structure Accomplishing tasks	An individual who mediates participants through the process of collaborating in virtual learning spaces by providing structure and guidance.	Agenda, structure, guide, difficulty in a group, tasks, getting things done,
	Limiting the opportunity for full participation ***Sub-Themes*** Technological tools inhibit communication and participation in virtual learning opportunities.	Connection issues, communication online, in office distractions-video chatting, visitors; access-wifi, training tools, technical issues, large audiences-technology is a distraction with large audiences, emails-members not checking email	Distractions that may inhibit the opportunity for learning for participants within their program team.	Connection, communication online, in office distractions-video chatting, visitors; access-wifi, training tools, technical issues, large audiences-technology is a distraction with large audiences, emails-members not checking email, online tools, participation, lack of participation, effectiveness, value
	Participants level of comfort of technological tools inhibits	level of comfort-ease of use,	How easy or difficult the technology is to utilize for	comfort, ease of use when utilizing technology

	opportunities for collaboration.		virtual learning opportunities within the program team.	
	Lack of Non-verbal engagement limits the opportunity to participate in learning.	Interaction, engagement, interactive, body language (engaged), facial expression	Messages or signals other than words that are used in interaction.	body language (engaged), facial expression, emotion

APPENDIX J Chapter 4 Consent Form

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent Information for Participants
in Research Projects Involving Human Subjects

Title of Project: <u>An Empirical Study: Technological Tools Contributing to Professional Learning Experiences in the Workplace.</u>

Investigator(s):

Hannah Scherer (Principal Investigator) hscherer@vt.edu/540-231-1759

Shannon Wiley (sub-investigator) shann83@vt.edu/336-340-3736

Kim Niewolny (sub-investigator) niewolny@vt.edu/540-231-5784

James Anderson (sub-investigator) jcanderson@uga.edu/706-542-0515

Antoine Alston (sub-investigator) alstona@ncat.edu/336-285-4818

I. Purpose of this Research Project

The purposes of this study are to ***describe opportunities for learning*** and to understand ***to what extent technological tools guide learning*** within the Virginia Cooperative Extension organization. This proposed study will utilize Wenger's Social Theory of Learning that discusses how social interaction defines the process of learning. Because this specific learning theory emphasizes collaboration, I have selected to work with the program teams as they have already been identified as a community of learners within the VCE organization. While formal, face-to-face approaches assist with building capacity, creating social networks that enhance leadership, and result in positive actions that strengthen the organization, technological tools can assist with providing these skills to Extension professionals expanding their knowledge and continuing to benefit not only the organization but also their clientele. By clearly understanding how these technological tools can guide learning for Extension professionals, the Extension organization as a whole will be able to increase and enhance program and community outreach outcomes, constructively develop additional online professional learning opportunities and strengthen the global relationship among Extension professionals both near and far.

II. Procedures

Should you agree to participate, you will be invited to participate in a 60-minute audio recorded phone interview with the co-investigator of this research study where you will have the opportunity to discuss your insight regarding learning opportunities within program teams and how technological tools assist with facilitating learning within your program team. Recordings will be transcribed and analyzed for themes. Results of this analysis will be presented in the dissertation, during the academic presentations, and published in a reviewed journal.

III. Risks

There are no forseeable risk regarding this study.

IV. Benefits

Understanding how technological tools contribute to learning and outcomes and assist with building capacity for extension professionals will allow VCE Extension Administrators the opportunity to more efficiently design and implement additional virtual professional opportunities for adults. Data collected may also impact the quality of programs within other Extension organizations.

No promise or guarantee of benefits has been made to encourage you to participate.

V. Extent of Anonymity and Confidentiality

Your participation with this study will be kept confidential, no identifiable information will be released for publication/presentation purposes.

The Virginia Tech (VT) Institutional Review Board (IRB) may view the study's data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

Note: in some situations, it may be necessary for an investigator to break confidentiality. If a researcher has reason to suspect that a child is abused or neglected, or that a person poses a threat of harm to others or him/herself, the researcher is required by Virginia State law to notify the appropriate authorities. If applicable to this study, the conditions under which the investigator must break confidentiality must be described.

VI. Compensation

There is no compensation for participating in this study.

VII. Freedom to Withdraw

It is important for you to know that you are free to withdraw from this study at any time without penalty. You are free not to answer any questions that you choose or respond to what is being asked of you without penalty.

Please note that there may be circumstances under which the investigator may determine that a subject should not continue as a subject.

Should you withdraw or otherwise discontinue participation, you will be compensated for the portion of the project completed in accordance with the Compensation section of this document.

VIII. Questions or Concerns

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document.

Should you have any questions or concerns about the study's conduct or your rights as a research participant, or need to report a research-related injury or event, you may contact the Virginia Tech Institutional Review Board at irb@vt.edu or (540) 231-3732.

(Note: each subject must be provided a copy of this form. In addition, the IRB office may stamp its approval on the consent document(s) you submit and return the stamped version to you for use in consenting subjects; therefore, ensure each consent document you submit is ready to be read and signed by subjects.)

APPENDIX K Chapter 4 Interview Questions

1. What is the overall purpose of your program team?
    a. What is your role on your program team?
    b. In what ways do you collaborate with your team members to work towards that overall purpose?
2. Think of a time where you had to develop a new process or method for your program team. Describe that experience?
3. How has participating on this program team contributed to your professional growth?
4. What have you learned as a member of this program team?
5. Think back to before you joined the program team. How do you now see your role in the VCE organization?
6. In what ways does your program team utilize technology?
7. How does technology help your team function?
8. What experiences have you encountered where technology has hindered the function of your program team?

APPENDIX L Chapter 4 Verbal Consent Form

Hi,

This is Shannon Wiley. I am calling because you have indicated that you are willing to participate in a phone interview regarding your experiences as a member of a VCE program team. This will take the form of a qualitative interview that should take no longer than 1-hour. Is now still a good time?

Should you agree to participate, your identity will remain confidential and your participation in this audio-recorded interview is completely voluntary. You may end the interview at any time. Do you have any questions about the research? **(Wait for answer.)** I will be documenting your consent to participate. May I begin the interview?

APPENDIX M Chapter 4 Recruitment Email:

Dear VCE Program Team Member,

My name is Shannon Wiley. I am a Ph. D candidate attending Virginia Tech in the department of Agricultural, Leadership, and Community Education under the advisement of Dr. Hannah Scherer. You are receiving this email as an invitation to participate in my Dissertation research involving Extension educators who are currently serving on a VCE Program Team.
The purposes of this study are to ***describe opportunities for learning*** and to understand ***to what extent technological tools guide learning*** within the Virginia Cooperative Extension organization. Specifically, in this study I am seeking to interview Program Team members to gain their perspectives regarding opportunities for learning and the extent to which technological tools facilitate learning and program outcomes while building capacity for the extension organization.

As a Ph.D candidate, I have welcomed the opportunity to conduct research in an Extension setting due to my previous role as an Extension professional. I've conducted previous Extension research that has resulted in interesting findings leading me to my current Dissertation study. As a result of this study, I hope to provide insight that may provide useful information assisting Extension Administrators & Directors with planning future opportunities for Extension employees.

I would appreciate the opportunity to interview you as part of this study to gain your insight regarding the overall objective. If you are interested and agree to participate I will provide you with the informed consent information to review before the interview. I anticipate that the audio-recorded interview will take approximately an hour to complete.

If you are willing to be interviewed as part of this study, please reply to this email. When I receive your response, I will send a follow-up email to arrange a time for the interview that is convenient for you and include the document mentioned above.

Thank you for considering my request.

APPENDIX N Chapter 4 Follow-Up Email

Dear VCE Program Team Member,

Thank you so much for your willingness to participate in an interview contributing to this research study!

Attached to this email you should find the informed consent information. If, after reviewing the information, you have any questions, please feel free to contact me.

At the beginning of the interview I will also review the consent information and welcome any questions.

If you are willing to participate in this study, please confirm an interview date and time utilizing the attached Doodle Poll. The link is included below.

I am looking forward to our discussion,

APPENDIX O Chapter 4 Program Team Leader Recruitment Email:

Dear VCE Program Team Leader,
My name is Shannon Wiley. I am a Ph. D candidate attending Virginia Tech in the department of Agricultural, Leadership, and Community Education under the advisement of Dr. Hannah Scherer. You are receiving this email as an invitation to participate in my Dissertation research involving Extension educators who are currently participating on a VCE Program Team. The purposes of this study are to ***describe opportunities for learning*** and to understand ***to what extent technological tools guide learning*** within the Virginia Cooperative Extension organization. This proposed study will utilize Wenger's Social Theory of Learning that discusses how social interaction defines the process of learning. Because this specific learning theory emphasizes collaboration, I have selected to work with the program teams as they have already been identified as a community of learners within the VCE organization.

Specifically, in this study I am seeking to interview VCE Program Team members to understand their perspectives. I am also seeking to review your Program Team's Action Plan as a part of my analysis.

As a Ph.D student, I have welcomed the opportunity to conduct research in an Extension setting due to my previous role as an Extension professional. I've conducted previous Extension research that has resulted in interesting findings being surfaced leading me to my current Dissertation study. As a result of this study, I hope to provide insight that may provide useful information that could assist Extension Administrators & Directors with planning future opportunities for Extension employees.

I would be very excited to gain your approval allowing me to proceed with inviting your Program Team members (including you) to participate in the study and to analyze your team's Action Plans. If you are willing, I will provide you with an invitation email to send directly to your program team members. I appreciate your consideration and I look forward to hearing back from you.

Thanks,

APPENDIX P Chapter 4 IRB Approval

May 29, 2018

Hannah Scherer, BA, PhD
Virginia Tech
175 West Campus Drive
214 Litton Reaves Hall (0343)
Blacksburg, Virginia 20461

Dear Dr. Scherer:

SUBJECT: IRB EXEMPTION—REGULATORY OPINION
Protocol Title: An Empirical Study: Technological Tools Contributing to Professional Learning Experiences in the Workplace
Investigator: Hannah Scherer, BA, PhD

This letter is in response to your request to Western Institutional Review Board (WIRB) for an exemption determination for the above-referenced study. WIRB's IRB Affairs Department reviewed the exemption criteria under 45 CFR §46.101(b)(1):

> (b) Unless otherwise required by department or agency heads, research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt from this policy:
>
> > (1) Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

We believe that this project fits the above exemption criteria because the purpose of the project is to evaluate and describe the extent technological tools guide learning experiences in the workplace (Virginia Cooperative Extension organization). This will be done using participants in the Virginia Cooperative Extension organization.

This exemption determination can apply to multiple sites, but it does not apply to any institution that has an institutional policy of requiring an entity other than WIRB (such as an internal IRB) to make exemption determinations. WIRB cannot provide an exemption that overrides the jurisdiction of a local IRB or other institutional mechanism for determining exemptions. You are responsible for ensuring that each site to which this exemption applies can and will accept WIRB's exemption decision.

Please note that any future changes to the project may affect its exempt status, and you may want to contact WIRB about the effect these changes may have on the exemption status before

implementing them. WIRB does not impose an expiration date on its IRB exemption determinations.

If you have any questions, or if we can be of further assistance, please contact Jeff Markham, JD, at 360-252-2865, or e-mail RegulatoryAffairs@wirb.com.

JM:tb
B1-Exemption-Scherer-Update (05-29-2018)
cc: Jennifer Farmer, Virginia Tech
WIRB VA Tech, Virginia Tech
WIRB Accounting
WIRB Work Order # 1-1081305-1

APPENDIX Q Chapter 4 Interview Guide

Hello, thank you for agreeing to participate in this phone interview regarding your experience with your VCE Program Team. The purposes of this study are to *describe opportunities for learning* and to understand *to what extent technological tools guide learning* within the Virginia Cooperative Extension organization. This proposed study will utilize Wenger's Social Theory of Learning that discusses how social interaction defines the process of learning. As we go through this interview, please keep in mind that I am concerned with understanding how things are happening within your Program Team. Gaining a sense of how your team functions will provide the researcher with a clearer understanding of learning opportunities that occur in situated learning environments. Before we start the interview, do you have any questions about this process? (Pause) I would like to start by having you focus on your experience with the program team.

1. What are some things you all are working on as a program team?

Response:
Follow-up: a. How do you contribute to that work? b. In what ways do you collaborate with your team members to get those things done?

Interviewer Notes:	**Connection to the Framework & RQ:**

2. Think of a time where you had to develop a new process or method for your program team. Describe that experience?

Response:	
Follow-up:	
Interviewer Notes:	**Connection to the Framework & RQ:**

3. How has participating on this program team contributed to your professional growth?

Response:	
Follow-up:	
Interviewer Notes:	**Connection to the Framework & RQ:**

4. Think back to before you joined the program team. How do you now see your role in the VCE organization?

Response:	
Follow-up:	
Interviewer Notes:	**Connection to the Framework & RQ:**

5. Is there anything else you have learned as a member of this program team?

Response:	
Follow-up:	
Interviewer Notes:	**Connection to the Framework & RQ:**

6. In what ways does your program team utilize technology?

Response:	
Follow-up:	
Interviewer Notes:	**Connection to the Framework & RQ:**

7. How does technology help your team work together?

Response:	
Follow-up:	
Interviewer Notes:	**Connection to the Framework & RQ:**

8. What experiences have you encountered where technology has hindered your ability to work together as a team?

Response:	
Follow-up:	
Interviewer Notes:	**Connection to the Framework & RQ:**