1-1-2011

Improving community college faculty effectiveness through technology-based learning communities

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This is to certify that the doctoral dissertation by

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2014

Abstract

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MEd, Texas A&M University, 2002

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Dissertation Submitted in Partial Fulfillment

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Abstract

College faculty members are often inadequately prepared to use technology in their classrooms. They often learn technology without institutional support, and without understanding technology's impact on student learning. As a result of these shortcomings, the use of technology in the college classroom is often not systematic or focused on improving learning. This study used a conceptual framework based on Wenger's learning community or community of practice idea. This study examined a Midwestern university where faculty made only limited use of classroom technology and did not demonstrate contemporary approaches to student learning. The study set out to determine the impact of technology-based faculty learning communities on student engagement. Five university faculty members served as research participants; all agreed to form a learning community and participate in a series of interviews that examined the impact of technology integration and the role of learning communities on adopting technology. Interview data were analyzed using an emergent and exploratory approach where themes and trends were identified through direct observation and examination of interview transcripts. One of the emergent themes was that increased faculty technology use depends primarily on positive prior experiences with technology. Another theme was that students' self-reported technology competency does not accurately reflect classroom uses, which may have a significant impact on educational technology integration strategies. The study's findings provide guidelines for a best practice model of faculty professional development to improve and enhance classroom learning with educational technology.

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Dedication

This is dedicated to all faculty members who strive to make a difference in the lives of their students. Their passion, their commitment, and their wealth of knowledge are the riches that, when shared, improve the lives of all.

Acknowledgments

It is very important to me to acknowledge all of the individuals who have encouraged me on this journey. Without the encouragement, advice, reassurance and contact of Dr. Abbie Brown, my Chair and Mentor, this would have not been completed. A heartfelt thank you to you, Abbie.

To Dr. William Sugar, for your suggestions, questions, and thoughts as this dissertation developed, I am grateful.

To Dr. Maryfriend Shepard, for encouraging me from those first classes. It is done!

To the folks who kept asking, “Are you done?” I can finally say, “Yes!”

To Peggy, Joe, Richard, Mikela, Bonnie, Ariela, Anita, Abigail, Marissa, Richard and Vicki, thank you so much for your encouragement and your constant nudging. It’s over!

To Bob Slayton, you always kept me focused on the end, and said that the journey will be worth it. Thank you, my friend.

To all those who listened as I’d talk things through, you have all made a difference.

And last, but not least, to Mom and Dad, Kevin and Anita: This has been a long journey, with a lot of reading, writing, and missing family events. Your love and understanding have fueled my heart. “Thank you” is such a short phrase, but I say it from my heart.

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Chapter 1: Introduction to the Study

Introduction

Higher education faculty are often inadequately prepared to use and integrate technology in the classroom. The recent growth and availability of new classroom technologies has exceeded the need and increased the capacity for professional development opportunities. Wilson and Berne (1999) and Lawless and Pellegrino (2007) both indicate that there is a gap linking professional development to improvements in the classroom and this gap remains. The link between professional development and increased student learning has not been explored at the community college level (Murray, 2005). This dissertation addressed this gap by providing a model of best practices for faculty to improve teaching and learning through the use of technology.

The introduction to the study included a brief review of research literature. The research literature and research gap lead to the specific problem statement, research purpose and research questions. The conceptual framework was discussed and provided a rationale for the nature of the specific study. To understand the research study, operational definitions were provided along with assumptions, scope, delimitations, limitations and the significance of the study.

Background

University faculty members are often presented with choices concerning classroom technology. Some may find ways to use educational technology in their classroom, and some may not use technology at all. The successful uses of technology are often the result of positive and serendipitous experiences with technology. Faculty

members frequently struggle with technology and seek out assistance from others that may improve their personal technology skill set. With over a decade of experience in faculty development, it is easy to imagine the discussions between faculty members as they attempt to learn technology. Talking with faculty members has highlighted their desire to learn more about technology. Faculty members want to learn how to use technology to improve learning and to engage students in every aspect of their community college experience. Providing faculty members with a systematic program of professional development could reduce some frustration and anxiety of some technologically challenged users. This situation is more prevalent than expected. Faculty members will ultimately choose to misuse technology or not use technology at all. Several studies attest to the prevalence of this problem (Akroyd, Jaeger, Jackowski, & Jones, 2004; Mars & Ginter, 2007).

Professional development for community college faculty is often limited to an institutional overview of human relations policies or other nonteaching policies. Community college faculty are expected to support "the college's mandate" for teaching (Goto & Davis, 2009, p. 251). Professional development is not merely skill training (Amey, 2005), professional development focuses on "individual and group learning" (Amey, 2005, p. 701). More professional development is needed to "meet the needs of individual faculty" (Grant, 2005, p. 294) with relevant programs, designed to improve teaching skills and incorporate technology in teaching. Some faculty are "lacking in technological expertise" (Milliron & Prentice, 2005, p. 111) and professional development may provide them an incentive to enhance their technological skills. The

need for technological expertise goes beyond personal productivity skill development. Technological proficiency is both a needed personal skill and a professional work characteristic.

Community college faculty members have indicated the disconnect between technology training and teaching. The community college has long been known as a teaching institution (Wallin, 2007). The focus, for many community colleges, is "institutional mission … than on enhancement of faculty knowledge alone" (Grant, 2005, p. 293). The mission of the community college focuses on faculty improvement. Individually, faculty acquire skills to use technology becoming proficient users. Collectively, faculty improvements enhance the college mission. Eddy (2007) noted "the challenges of integrating technology into traditional classroom teaching" (p. 68) have provided the need for professional development.

Becoming proficient with technology in a college classroom requires much more than an introduction to technology. To develop technological skills in the classroom requires a developmental approach (Engstrom & Danielson, 2006) that builds on previously acquired skills. Technology skills must have a clear connection to teaching and learning. Without an integrated approach to both gain skills and explore best pedagogical practices, community college faculty is less likely to improve as teachers (Webster-Wright, 2009).

Traditionally, community colleges have focused on teaching exclusively and have not needed to focus on the professional development of faculty. Community college faculty members do not typically have "formal preparation for a teaching position"

(Twombly & Townsend, 2008, p. 15). The community college faculty members are often subject matter and content experts, coming from business and industry for example. Wallin and Smith (2005) noted that professional development opportunities can "have maximum impact in the classroom and [provide] meaningful growth and support to faculty" (p. 88). Professional development for faculty is effective in changing practice when it is "embedded in teachers' daily work" (Kelleher, 2003, p. 752). Professional development that is a part of teaching, and not separate from teaching, improves faculty members' teaching skills directly and student learning, indirectly (Kelleher, 2003).

Professional development offered at the research site for all faculty members, whether full-time, part-time, or adjunct, is intended to improve teaching skills, introduce appropriate uses of technology, model best practices and indirectly improve student learning. Faculty members and adjunct faculty members are encouraged to participate in professional development throughout the academic year. In addition to periodic professional development offered throughout the academic year, the research site also has professional development offered at midyear and at the end of year. Participation in professional development is desired, and may be used to document faculty growth. Professional development participation can also be included in a yearly performance evaluation as well as a part of any promotion and tenure documentation.

Observing others and directly participating in professional development opportunities for community college faculty members can improve overall teaching and learning. To improve and become a better teacher, faculty seek opportunities for developing and using technological skills (McCarthy, 2006). Faculty members look to

each other "when it comes to integrating technology into their instructional activities" (Mars & Ginter, 2007, p. 339).

Problem Statement

The college faculty members not familiar with using classroom technology regularly are not adequately prepared to successfully integrate technology in the classroom. This concern was an essential element for the institution used as the research site. The institution's strategic planning focus was "to support additional faculty professional development" (Vincennes University, 2006a, p. 12). For an institution to include professional development as a strategic planning goal clearly indicates the importance, and provides the rationale for a focused, institutionally based professional development program. Professional development, in the strategic plan, "strengthens the image of the University" (Vincennes University, 2006a, p. 12). The university is a "teaching institution," whose "major emphasis is teaching, rather than teaching research, and publication as in baccalaureate institution" (1997, p. H4).

The importance of professional development was identified in an institutional self-study report, where the University noted that professional development can "empower its employees to be leaders in the population of community colleges, which, in turn, promotes excellent service to students" (1995, p. 83). The importance of professional development for the research site continues to guide initiatives today. The link between professional development and student learning focused the institution to examine the mission. Providing professional development "must be a primary mission" for the University (Vincennes University, 1995, p. 83). The institution has focused on the

importance of professional development without integrating professional development as a systematic element of the university.

Even though the university characterizes teaching "by innovation and experimentation" and "a variety of teaching methods and by preparation of the faculty" (1997, p. H9), there is no clearly defined or institutionally articulated model of professional development. The problem here is the need for a systematic approach to faculty professional development. Faculty members will often discover or find ways to improve their teaching, without input from others or guidance. This approach may not yield the most effective and sustainable model for professional development at the research site. Faculty members are located at three main campus locations and multiple satellite locations within the state and beyond. The need for a systematic and institutionalized approach, as identified by Cohen and Brawer (2008), increases as new faculty join an institution. As the faculty retire from the research site, the newer, younger faculty are more likely to inquire about professional development. The greatest force for an institutional approach comes from new full-time and new adjunct or part-time faculty.

Grant (2005) noted that community college faculty are "more focused on institutional mission, that is, teaching and learning, than on enhancement of faculty knowledge" (p. 293). Cohen and Brawer (2008) also noted that faculty at the community college are more engaged as teachers, noting "their primary responsibility is to teach; they rarely conduct research or scholarly inquiry" (p. 84). The role of the community college faculty member is to focus on "teaching, program administration and professional service" (Goto & Davis, 2009, p. 254). Burnstad and Hoss (2010) identified teaching as

the primary role for community college faculty, coming to the institution as teachers, and being teachers throughout their career. Teaching as noted by both Grant (2005) and Cohen and Brawer (2008) focuses more on traditional classroom teaching than on using technology in the classroom. Professional development must link individual needs of faculty to institutional mission to improve teaching and learning. This would focus efforts at the community college to "enhance and improve" the institutional mission and individual competence (Grant, 2005, p. 296).

Engaging faculty in a community of practice or learning community (Wenger, 1998; Wenger, McDermott, & Snyder, 2002) approach will improve the current situation. The lack of technological skills for faculty, as noted by Borko (2004), can be improved by participation as a member of a learning community where teaching improvement is encouraged and supported. Community college faculty members need to continually improve their skills to be successful as teachers (Watts & Hammons, 2002). Murray noted "community colleges emphasized teaching" (Murray, 2005, p. 221). Improving as teachers can best be accomplished by a systematic and institutionally supported professional development program. A "comprehensive, sustained and intensive approach" (Hirsh, 2009, p. 12) is needed to address the issues of technological skills and professional development. Faculty have "almost no in-school time for professional learning or collegial work" (Darling-Hammond, 2005, p. 240). The changes and advances in technology provide even greater opportunities for focused professional development programs. A case study may reveal the methods community college faculty use technology to improve as teachers.

Purpose of the Study

The purpose of this research was to describe and discover the impact of educational technology-based, faculty learning communities that increase student engagement and learning. As more and more technology is introduced into the classroom faculty members will perceive the need to use the technology and use it in such a way that engages students and improves learning.

Research Questions

The critical questions guiding the study were focused on more than the integration or adoption of technology. The research questions sought to identify and determine if faculty communities of practice impact the integration and adoption of technology. For faculty members working in community, the impact and effect of integration and adoption greater than working individually.

- How do community college faculty communities of practice impact technology integration?
- How do community college faculty communities of practice impact technology adoption?

The study sub-questions were more topical, and provided a framework for the case analysis.

- How would the technology-based faculty learning communities be described?
- What impact do communities of practice have on student engagement? How do the communities of practice help in student retention?

- What impact do communities of practice have on improving student learning?

Conceptual Framework

This study used a conceptual framework based on the learning community or community of practice idea advanced by Wenger (1998) and Wenger et al. (2002). While much of the existing literature addresses the classroom technology usage issues in public schools (K-12), baccalaureate and graduate degree producing institutions, there is a noticeable gap in the literature concerning community colleges. This study was designed in part to extend Wenger's work to the community college environment and to thus provide a newer perspective for community college faculty professional development activities.

A community of practice because it is not a formal community, group or organization, is often difficult to identify. The standard definition of the community of practice was developed by Lave and Wenger (1991), Wenger (2000), Wenger and Snyder (2000), and Wenger et al (2002). Additional definitions of community of practice provide differing perspectives (Barab & Duffy, 2000; Dennen & Burner, 2007; Kerno & Mace, 2010; Mongahan, 2011) but can be traced to the standard definitions.

Defining a community of practice can prove to be difficult without the work of Lave and Wenger (1991) who noted that a "community of practice is a set of relations among persons … over time" (p. 98). Wenger and Snyder (2000) define a community of practice as "groups of people informally bound together by shared expertise and passion for joint enterprise" (p. 139). The informal nature of this group indicates a somewhat

temporal, or dynamic and fluid structure. There may be an informal leadership structure, but the focus is towards a common issue or problem that needs resolution. Without some clearly defined structure or formally agreed upon purpose the community of practice may not be clearly evident.

Wenger (2000) states that communities of practice "are the basic building blocks of a social learning system" (p. 229). The community of practice becomes an integral element of and for learning. Without the community of practice, the possibility of deeper learning is not possible. The community of practice is the foundation for all learning.

Barab and Duffy (2000) noted that a "community is not simply bringing a lot of people together to work on a task" (p. 49). The community is a part of the larger society where the members have a role and membership in society, in addition to membership in the community. The community is not a means to accomplish or finalize a task, the community is the means to extend collaboration and foster a social function, creating and nurturing a larger group.

Wenger et al (2002) define communities of practice as "groups of people who share a concern, a set of problems, or passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (p. 4). This definition includes the activities of the community. These activities are intentional and reflective and may continue for an unknown period.

Dennen and Burner (2007) state that a community of practice is "a group of people – either formally or informally bound – who engage in and identify themselves with a common practice" (p. 428). The community of practice is not clearly identifiable,

and the members' degree of involvement is not clearly established. The community is not a physical community, but more of a connection between community members. Community college faculty will define their relationships between each other and share the commonalities of teaching.

Kerno and Mace (2010) noted that the community of practice focuses on "members engaging in joint activities and discussions to help one another and share information" (p. 80). The community of practice highlights the relationships between members of the community. This definition identifies the collaborative nature of the community of practice and does not identify the importance of individual contributions to the community.

Monaghan (2011) identified a community of practice that focuses "on the process of learning and building knowledge of all members at both the individual and community level" (p. 430). This definition of the community of practice addresses both individual and collective growth and development. The community grows as the individual members grow as well.

Community college faculty members are members of the informal community of practice. They are sharing teaching experiences with different students and different curriculum. These communities are "so informal and so pervasive that they rarely come into explicit focus" (Wenger, 1998, p. 7). The shape or structure of the community is less likely to be easily identified by those outside of the community. Community college faculty members are an informal grouping. The community members "deepen their knowledge … by interacting on an ongoing basis" (Wenger et al., 2002, p. 4). As

members of an informal community, they learn individually and collectively as members of a community of practice.

The conceptual framework for the study was the learning community or community of practice described by Lave and Wenger (1991), Wenger (1998) and Wenger et al., (2002). In this study, the learning community members determined meaning and value through interacting with other members. The shared meaning and value can help further explain the importance of the community in improving student learning.

The philosophical assumptions for the study are ontological, where "reality is subjective and multiple, as seen by participants in the study" (Creswell, 1998, p. 75).

The second philosophical assumption for the study is methodological, where the study "uses inductive logic, studies the topic within its context and uses an emerging design" (Creswell, 1998, p. 75).

The case study approach can be "exploratory, descriptive [or] explanatory" (Yin, 1981, p. 59). The case study approach attempts to understand the dynamics of the learning community whether the group process or the interpersonal communications. The research focused on a specific group of faculty at a specific institution. The research attempted to describe and explain the processes used by a faculty learning community to integrate technology. The case study approach focused on "process rather than outcomes" (Merriam, 1998, p. 19). The process of forming the learning community, and the role educational technology plays in the community are critical points for the research.

Nature of the Study

The research is a case study of a single faculty learning community composed of 10 faculty members representing a variety of academic disciplines. The faculty learning community was selected from current faculty members at the institution who responded to an email solicitation. The respondents were selected to provide a cross-disciplinary community of 10 participants. The community participated in at least two individual interviews and one group interview and at least two observations. The case research focuses on the actions of, a faculty learning community (Merriam, 1998).

Definitions

Professional development is hands-on, small group workshops focused on enhancing and improving classroom instruction (Guskey & Yoon, 2009), student engagement and offering instructional strategies grounded in contemporary pedagogical theory (Guskey, 1986).

Professional development is a "process that is (a) intentional, (b) ongoing, and (c) systemic" (Guskey, 2000, p. 16).

Professional development is a "comprehensive, sustained and intensive approach" (Hirsch, 2009, p. 12).

Professional development is "embedded in teachers' work" (Kelleher, 2003, p. 754).

Workshops are "research-based instructional practices … active-learning experiences [that provide] teachers opportunities to adapt the practices" (Guskey & Yoon, 2009, p. 496).

Participants will include faculty and adjunct faculty who are responsible for teaching.

Best practices are defined as “active, engaged [and] interactive” (Fogarty & Pete, 2009, p. 33).

A faculty learning community is “a cross-disciplinary faculty group of 8 to 14 members” (Cox, 2001, p. 71).

“Educational technology encompasses any means of communicating with learners other than through direct, face-to-face, or personal contact” (Bates & Poole, 2003, p. 5).

Technology integration is when “technology is successfully integrated into learning and instruction when the interest and focus are not on the technology but rather on that which the technology makes possible” (Kim, Lee, Merrill, Spector, & van Merrienboer, 2007, p. 811).

Assumptions

Some faculty members may seek opportunities for further professional development. Their desire will genuinely seek to improve teaching and learning. The desire for professional growth and development is necessary for participation in the research.

New faculty members, comfortable with using technology, will seek a broader exposure to technology. The varying degrees of technological exposure are necessary to explore different activities involving all members of the research.

Faculty members will be honest and open in their interviews. This sense of candor is necessary to promote faculty exploration of technology.

Delimitations and Limitations

Delimitations of the study (Creswell, 2003):

- This study confined itself to interviewing and observing faculty members participating in technological-based learning communities.
- This study confined itself to focusing on developing and enhancing technological skills.

Limitations of the study (Creswell, 2003):

- The findings of this study may not be generalized to other cases.
- The findings of this study may identify and describe characteristics of faculty learning communities who use technology to improve student learning.

Significance of the Study

The significance of this study impacted and shaped faculty professional development within the community colleges. Faculty development personnel and community college administrators will note the importance of this study (Creswell, 2003):

- The study contributed to a greater understanding of the impact of faculty learning communities on the use of technology in the classroom.
- The study identified practices for faculty learning community development at community colleges.
- The study improved methods for successful integration of technology in community college classrooms.
- The study identified practices for increasing student engagement and learning.

- The implications for positive social change included a better understanding of student engagement and the role of faculty learning communities to improve student learning.

Summary of Literature

Current research on the role of professional development (Wallin & Smith, 2005) focuses on the role of community members in professional development (McPhail, McKusick, & Starr, 2006). The early beginnings of organized professional development, for the community college, started in the 1970's and continues to evolve, and change as the mission of the community college changes as well (Watts & Hammons, 2002). Faculty "recognize the importance of using technology" but may not have sufficient opportunities for training to improve their skills (Wallin & Smith, 2005, p. 98). The focus of the community should emphasize the integration of technology into the classroom (Brown, Benson, & Uhde, 2004). By teaching faculty to use or integrate technology into the classroom, professional development "will be more likely to change their instructional practices" (Matzen & Edmunds, 2007, p. 418). Improving teaching and improving learning happens when technology is used to deliver instruction. The role of technology in teaching and learning requires a community of practice approach that shares best practices to improve teaching and student learning.

Creating professional development opportunities that focus on communities of practice extends the collaborative nature of learning and teaching (Lawless & Pellegrino, 2007). To this community structure, best practices of technology integration provide the context for improving student learning. Mars and Ginter (2007) noted that technological

skill development "was viewed as a vehicle for career advancement" (p. 334). Linking professional development to promotion, for example, required the organization of programs and other offerings (Watts & Hammons, 2002). This shift to an organized professional development program must occur to create an atmosphere of legitimacy. Organized and institutionally supported professional development demonstrates a commitment to growth as teachers and as an institution. Balancing individual faculty and university needs is one method to create professional development (Wallin & Smith, 2005).

Technology has been a part of the educational landscape. Including and integrating technology into the classroom works best when faculty have access to "colleagues for advice, modeling, mentoring and support" (Mars & Ginter, 2007, p. 339). One focus for the use of technology matches the use of technology to pedagogical practices (Matzen & Edmunds, 2007). As best practices are developed in the classroom, use of technology shifts and changes. To promote this shift requires all levels at a community college, from the president to provost to dean to the department to individual faculty to provide support and encouragement for professional development.

Gaps in Prior Research

Watts and Hammons (2002) found that professional development is essential for successful and sustained faculty development at the community college and that it needs to become "a permanent fixture in community colleges" (p. 10). Lawless and Pellegrino (2007) noted that further study of the impact of professional development on teaching was necessary to determine the ideal role of technology in professional development.

More study is needed to identify the impact of the use of technology on teaching practices and student learning (Lawless & Pellegrino, 2007). Webster-Wright (2009) noted that further study was necessary to determine the role of professional development on improving community development. Professional development should become so integrated in the community college that it is not the exception but an element of all jobs at the community college. A concern for those responsible for developing and delivering professional development is identifying current and emerging trends (Wallin & Smith, 2005). The newer topics, whether technological or pedagogical, should be a priority for all professional development.

Brown, Benson and Uhde (2004) stated "a risk-free atmosphere promotes the sharing of ideas" (p. 104). The safe environment of a community of practice should be developed for faculty development. Faculty should be comfortable to try new or unfamiliar technology without the fear of failure but with a supportive community to guide and assist them. Without this community of supportive practice, faculty has no alternative except feeling "challenged to keep up with their students and with technology trends" (Kim et al., 2007, p. 809).

Wallin and Smith (2005) noted that technology and technological trends "should be a high-priority professional development effort" (p. 101). Matzen and Edmunds (2007) noted that technological skills should be further examined to determine the impact of teaching strategies on technological skills. Twombly and Townsend (2008) noted "research on community college faculty members needs to be tied more to … teaching and learning" (p. 19). Current research does not address the impact of professional

development on teaching and learning. The lack of research identified by Twombly and Townsend (2008) provides a strong rationale to identify the impact of professional development on both community college faculty and students.

Contemporary research has provided limited insight into the role of professional development to improve teaching (Lawless & Pellegrino, 2007). The absence of the impact of professional development on teaching was noted by Wilson and Berne (1999) who stated "we know very little about what teachers learn" (p. 174). The lack of understanding, as identified by Lawless and Pellegrino (2007) found "we do not know what teachers learn from professional development or how it changes their pedagogies" (p. 580). The research limitations include connecting to teaching and learning. Research must lead to improving teaching and learning (Wallin & Smith, 2005). Research should be focused on providing opportunities for professional development that builds a community of practice in faculty members and improves teaching and learning (Wallin, 2007). Faculty are more likely to use technology "without any formal training to do so" (Bates & Poole, 2003, p. 22). The lack of formal training provides an introduction to technology and a context to learn from other faculty members. Faculty who participate in formal, or informal, technology training will focus on student learning (Kim et al., 2007).

Summary

Faculty professional development has focused on typical, traditional topics and not addressed teaching improvement in community colleges. Expanding and refocusing professional development to include technology integration and teaching improvement can address existing research concerns. The focus on professional development at the

university helped focus the strategic plan "to support additional faculty professional development" (2006a, p. 12). Community college faculty focus on teaching, and are not as likely to focus or participate in professional development (Milliron & Prentice, 2005). The shifting in focus to from merely teaching to professional development supporting teaching can improve the overall function of the community college (Watts & Hammons, 2002).

Current literature has focused on the importance of professional development (Wallin & Smith, 2005) to improve teaching and learning. The literature has focused on types of professional development (workshops, for example) but has not fully explored the role of technology in professional development (Mars & Ginter, 2007). There is a greater need to link professional development to improvements in teaching and learning (Twombly & Townsend, 2008).

The research focused on the role of professional development to improve teaching and learning in the community college. This research used a faculty learning community as a method of delivering professional development to faculty at the community college. The research focused on the impact and effect of technology-based faculty learning communities on student engagement and learning. A case study approach was used to identify technological based teaching methods faculty use and investigated preferences for one teaching method over another.

Chapter 2: Literature Review

Introduction

The literature review focused on two core areas of research: learning communities and professional development for faculty. The first perspective is defining learning community. The second is defining professional development. Both of these perspectives provide a context for this study.

Contemporary literature provides the definition of the learning community and the learning community members. Community goals, purposes, and unique structures are viewed to provide a framework for the research studies. The literature presents the concept of a learning community, defining the community and determining the role and impact of the community on technology integration. The need for research on faculty learning communities has been identified by Lenning and Ebbers (1999), who stated that "no literature discusses the specific topic of faculty learning communities" (p. 97). Although this observation was made over fifteen years ago, it still remains largely true today.

Literature Search Strategy

The first stage of the literature review was conducted using the electronic databases EBSCO Academic Search Premier and Professional Development Collection. Using the search terms "community college" and "faculty learning community" together yielded an initial group of articles for review. This initial group was used to derive a more extensive list of key terms and search synonyms that were used in subsequent searches using ProQuest database.

Additional searches were conducted in Education: A SAGE Full-text Database. Using the search terms, 65 articles were found for "communities of practice or learning communities" in all fields and "community colleges" in all fields and "faculty" in all fields and "technology" in all fields, from Jan 1847 through Dec 2012 in SAGE journals. Searches were also conducted in Education Research Complete, yielding 52 articles. The search terms used were "communities of practice or learning communities" in all fields and "faculty" in all fields and "technology" in all fields and "research" in all fields.

Conceptual Framework

A learning community or community of practice described by Lave and Wenger (1991), Wenger (1998), Wenger, McDermott and Snyder (2002) provided the conceptual framework for the study. These descriptions provided a structure for the community of practice as well as some of the key activities for the community. Identifying the unique characteristics of a learning community or community of practice (Cox, 2005) is used to define the faculty learning community (Cox, 2001). Cox extends the community of practice to the university setting as the faculty learning community.

Framing the Literature

The learning community must first be identified by standard literature to provide a structure and a context for examination. The focus for the literature review is framed by Senge (1990) and the notion of the learning community; Lave and Wenger (1991) stated the idea of the community of practice; Wenger (1998) and Wenger, McDermott and Snyder (2002) extended and refined the concept of the community of practice.

Professional development, as noted by Birman, Desimone, Porter and Garet (2000), focuses on improving both individual and collective skills. By definition, a learning community is designed to promote learning (Lenning & Ebbers, 1999). A learning community is a "developed community that will promote and maximize learning" (Lenning & Ebbers, 1999, p. 8). The community is formal and not assembled by chance. The community also focuses on learning and not some other element. A learning community is deliberately and intentionally structured to first promote faculty learning directly, then to improve teaching indirectly, and finally to engage students in the act and process of learning.

The Learning Community and Professional Development

The learning community, or learning organization, provides the motive for faculty development because "deep down, we are all learners" (Senge, 1990, p. 4). Faculty are members of the community. Whether a faculty learning community or a student learning community, members of the community all share a similar interest that is they all are learners. This community develops "a set of relations among persons, activity, and world" (Lave & Wenger, 1991, p. 98), and continues to develop skills in teaching, learning, service and research.

The learning community becomes a professional development opportunity. Fayne and Ortquist-Ahrens (2006) found that the learning improved professional practice. As the learning community grows, the depth of professional development grows as well. Members of learning communities view participating in these communities as professional development activities (Fayne & Ortquist-Ahrens, 2006).

The Role of the Community

The community is more than a collection of individuals, it is a group focused on a shared goal (Senge, Roberts, Ross, Smith, & Kleiner, 1994). A community is "formed or joined" around a common sense or belonging or purpose (Brown & Duguid, 1991). The natural formation of a community provides identity for the members. Within the academic environment, the community focuses efforts, energies and resources on acquiring knowledge and using that knowledge to transform the individual members and the community at large (Senge, 1990; Senge et al., 1994). The community is "an integral part of our daily lives" (Wenger, 1998, p. 7). As such, they are "a natural part of organizational life" (Wenger et al., 2002, p. 12). The learning community focuses on "collaborating, sharing, and reflecting" (Kilbane, 2009, p. 186). The role of the community is more than individual growth it highlights collective growth and improvement. Through a community, the professional growth of faculty and their teaching abilities can be supported.

Learning Communities as Professional Development

The structure of the faculty learning community in community colleges provides opportunities for growth and development as teachers. Lenning and Ebbers (1999) noted "learning communities constitute a valuable activity for faculty development" (p. 57). The very nature and structure of the learning community focuses effort on improving faculty by collaborative, collegial and comprehensive opportunities (Murray, 2002). Faculty learning community members "value opportunities to work together, reflect on their practices, exchange ideas, and share strategies" (Guskey, 2003, p. 749). Learning

communities are “key agents in shaping teachers’ norms and knowledge and in sustaining change” (Darling-Hammond & McLaughlin, 1999, p. 381). The faculty learning community is a change agent.

Learning communities provide faculty members opportunities to connect with others “regardless of discipline and academic rank” (Glowacki-Dudka & Brown, 2007, p. 30). The connection in the faculty learning community was valuable for members “fostering collegial relationships, developing personal friendships, and seeking peer input” (Glowacki-Dudka & Brown, 2007, p. 38). Faculty learning communities (FLCs) frequently become venues for talking with peers about teaching, sharing concerns and successes and seeking insight from others. The sharing and collaboration within the FLC encourages faculty to improve and learn from each other (Darling-Hammond, 1998). The community becomes a place of continued learning where the members learn from and with each other. Through the level of engagement and involvement as members of the FLC, faculty members are exposed to other perspectives of teaching, diverse methods of integrating technology and are able to grow personally and professionally (Caffarella & Zinn, 1999).

To grow and become a more effective faculty member, one must seek out professional development opportunities that compliment existing teaching strengths. The key factors that create effective professional development, from the public school perspective, focuses on inter and intra personal relationships, institutional mandates, confidence and competence as an instructor (Caffarella & Zinn, 1999). The impact of

these factors on community college faculty professional development has not been fully explored in the literature.

Characteristics of Researched Learning Communities

Allan and Lewis (2006) identified learning communities that were created to improve teaching skills and learning skills. These communities focused on a virtual community, where the development of the community was facilitated through technology. Members of a learning community will continually grow as their participation in the community continues (Allan & Lewis, 2006). The community members grew both personally and professionally interacting with other members.

The virtual or online community differs slightly from the physical community according to Hara, Shachaf and Stoerger (2009). The online community has a greater reliance on technology to address geographic dispersion of the members. While the reliance on technology may improve communication between members there was no provision for the potential wide range of technological skills or competencies.

Scaffolded or supported communities provided additional support to members when they need or require additional support (Engle, 2006). The structured activities are created by noncommunity members who are familiar with the content, but not with the community structure or the community members. The activities promoted "building trust, encouraging collaboration" (Stevenson, Duran, Barrett, & Colarulli, 2005, p. 32).

The learning organization, similar to the learning community, focused on "creating, acquiring, sharing, and applying knowledge, and embracing change and innovation" (Chinowsky & Carrillo, 2007, p. 124). While this process focused on

transformation, the learning organization is structurally more formal than a learning community. This structure provided a greater sense of focus for the acquisition and sharing of knowledge. Structure, whether formal or informal, promoted a greater sense of collaboration between members and between communities (Erklenz-Watts, Westbay & Lynd-Balta, 2006).

A community of practice, like the learning organization, is composed of people "who have a common interest and are engaged in a shared enterprise" (Johnson, 2007, p. 277). The shared purpose provided structure for the immediate task at hand but was not focused on prolonged connection to the community. Wubbels (2007) noted that communities of practice cannot be designed, but are created to fulfill a purpose or address a concern.

The learning network is an extension of the learning community, with some of the structure of the learning organization in place (O'Brien, Burton, Campbell, Qualter, & Varga-Atkins, 2006). The network extends connections between communities and members of the community. The learning network becomes a model for continuous learning (DuFour, DuFour, Eaker & Many, 2006).

The community can focus on improvement of attitudes towards teaching and learning through engagement of the members (Ash, Brown, Kluger-Bell, & Hunter, 2009). These communities create an environment where "multiple levels of expertise" (Ash et al., 2009, p. 68) engage the members. The structure of the community in this sense is focused less on the network but more on the growth, development and maturation of the members. Focused on changing attitudes towards teaching and learning,

this community relied on the interactions between mentors and mentees in the community. This focus provided a personalized and focused community development, where both mentor and mentee improved their attitudes towards teaching and learning. Community members take the collaborative interactions from their community and use them to sustain their own professional development (Kilbane, 2009).

Role of Professional Development

Professional development activities have long been viewed as either integrated into the institution, or external to the institution (Wayne, Yoon, Zhu, Cronen, & Garet, 2008). Professional development activities that are both conducted by the institution and physically located in the institution "have a positive impact on student achievement" (Wayne et al., 2008, p. 469). Promoting and participating in professional development is dependent upon institutions providing "ways for instructors to work with colleagues across disciplines" (Goto & Davis, 2009, p. 258). Whatever the structure or nature of professional development in the past, Darling-Hammond and Richardson (2009) noted that current professional development must be more effective and targeted to improving teaching.

The primary goal of all forms of professional development is to make "improvements in student learning" (Guskey, 2003, p. 750). Regardless of the specific focus of professional development the impact of professional development is a positive impact on learning, on measurable achievement, on enriching and empowering learning. Targeted professional development must enhance teaching rather than provide "a forum for teachers to talk" (Darling-Hammond & Richardson, 2009, p. 47).

Cafarella and Zinn (1999) noted that professional development may be unpredictable and erratic at times, but multiple forms of professional development may impact teaching effectiveness and ultimately student learning. Whether self directed or formal in nature, the effect and impact of professional development is ultimately changing teaching to improve learning. The structure of professional development activities should "complement the subject matter they are teaching" (Nugent, Reardon, Smith, Rhodes, Zander, & Carter, 2008, p. 52). Professional development focused on improved teaching strategies, technology used in teaching, and improving basic study skills can have the widest impact among faculty regardless of subject-matter expertise (Burnstad & Hoss, 2010). Any organized faculty development must reflect both the diversity of students and the diversity of the faculty (Burnstad & Hoss, 2010). A learning community can provide the diversity of perspectives and activities that will improve teaching.

One focus of contemporary professional development is the learning community. The learning community "can change practice and transform student learning" (Darling-Hammond & Richardson, 2009, p. 52). Through collaborative experiences, faculty are able to explore new pedagogical approaches, share best practices with peers and do so in an environment that promotes and encourages improvements in teaching and learning (Darling-Hammond & Richardson, 2009). Lenning and Ebbers (1999) found that learning communities allow "faculty to work together more closely and effectively" (p. 56) promoting collaboration. By participation in a learning community faculty see the impact

on “the amount and quality of students’ learning [and] students’ enjoyment of learning” (Lenning & Ebbers, 1999, p. 57).

Effective professional development, whether the learning community model or another model, is “intensive, ongoing, and connected to practice” (Darling-Hammond, Wei, Andree, Richardson & Orphanos, 2009, p. 5). The connection from professional development to the classroom must be developed to improve teaching (American Educational Research Association, 2005). There must be a direct link between the professional development activities and teaching. Professional development must focus on improving teaching directly, and learning indirectly. The learning community provides the duration, connections with faculty and practice, and embedded in best practices for improving teaching and ultimately student learning.

Role of Technology in Researched Community Activities

The degree of access to technology has an impact on community activities and community development. Akroyd et al., (2004) in a national study, concluded “not having access to the internet may be one factor that accounts for less utilization” (Akroyd et al., 2004, p. 47). While this conclusion may appear to be somewhat trivial, it underscored the lack of access and availability to technology, and the effect on student learning and teaching. Removing the digital barrier for faculty is important. Faculty and part-time faculty are not integrated into decisions about institutional and instructional technology. These faculty need to have access to technology in order to improve teaching and learning.

Technology used to connect community members was ideally suited to promoting career improvement and teaching improvement (Allan and Lewis, 2006). This technology was used for synchronous and asynchronous communication between community members. Faculty at all levels need to find ways to use technology to connect with their students.

Educational technology provided connectivity between communities, and between community members. This use of technology allowed a greater sense of intercommunity communication (O'Brien et al., 2006). Knowledge transfer between communities and community members is fostered by the use of technology. This use of technology focused on the exploration of knowledge and sharing of found knowledge (Engle, 2006).

The role or importance of technology to the community is, in part, determined by the nature of development. Wallin and Smith (2005) identified technology used to communicate with students critical to improving teaching and learning: "Faculty recognize the importance of using technology to organize and manipulate student information" (Wallin & Smith, 2005, p. 98). The role of technology may be limited, but is capable of expanding to improve teaching and learning.

Kanaya, Light and Culp (2005) found that technology skills were increased through a mentorship program. Technology in a community setting encouraged other community members to develop personalized technological skills and abilities (Stevenson et al., 2005). One community member encouraged other members to use and integrate technology. Community members learned technology in an informal setting

from another community member. Brinkerhoff (2006) found that individual technological skills increased more in group settings.

Zhu and Baylen (2005) explored the role of technology in learning communities. Technology was an asset to learners and promoted a seamless connection to other community members. Concluding that technology "is insufficient to promote meaningful and quality interaction" (Zhu & Baylen, 2005, p. 266) the researchers provided no clear method to improve or address their concerns.

The Relationship of Technology and Professional Development

The presence of technology as identified by Mars and Ginter (2007) was closely linked to structured professional development. As faculty participated in professional development, their competency and confidence with more technology increased. Darling-Hammond and McLaughlin (1999) found "along with skills developed through expert guidance in clinical settings, are all important elements of teaching effectiveness" (p. 377). Professional development contributes to effective teaching, and ultimately student learning. Faculty will turn to faculty first for professional development on new or unfamiliar technology. Introducing a centralized professional development program allowed faculty to efficiently explore new technology and implement the new technology in their classroom (Mars & Ginter, 2007).

The use of technology, within a community, focused equally on communication and knowledge building. Thomson (2007) indicated "ultimately someone needs to be the person who leads the group" (Thomson, 2007, p. 35). There are limitations of and for

technology in the community. Eventually, technology must be supplemented or controlled to help accomplish the community goals.

Improved technological skills were linked both to formal and informal professional development. Technology skills developed as part of a professional development activity contributed to improved teaching (Brinkerhoff, 2006). Matzen and Edmunds (2007) found that technology skills that improved teaching and learning were developed and maintained as a part of a professional development activity.

The University and Professional Development

The faculty at the university were identified as "dedicated, innovative, and flexible" (1986, p. 50). Professional development activities at this university have been closely tied to the university mission of "leadership in innovation and delivery of successful educational experiences" (2006b, p. 1). The range of professional development activities has provided instructional strategies, classroom technology strategies, and classroom assessment techniques. The leadership is part of a "community fully dedicated to the enhancement of student learning" (2006b, p. 2).

Leadership and innovation in professional development were included as part of the strategic plan "to support additional faculty professional development" (2006a, p. 12). Determining innovative practices in professional development has been episodic and is not integrated into all classrooms in the university. The importance of professional development was noted as a "continuing priority of the university" (1986, p. 65). Professional development helped faculty "maintain their status as vigorous teachers" (1995, pp. 20-21). The absence of a systematic approach to faculty development was

noted when “faculty members are insufficiently prepared” to use technology (1998, p. 122).

Literature Gaps

The gaps in the literature focus on several components: first, the literature highlighted skill development, but not skill integration in the classroom; second, the literature addressed the role of the individual, and not the community. Additionally, the literature did not address the role of technology in improving student learning.

Caffarella and Zinn (1999) identified a conceptual framework for professional development. While their framework provides a context for delivering professional development, it does not fully address the impact of community-based professional development on improvements in teaching and learning.

Birman, Desimone, Porter and Garet (2000) identified characteristics of effective professional development. Their research addressed pedagogical approaches to improving learning, but did not focus on building communities of practice or using technology to improve learning.

Akroyd, Jaeger, Jackowski and Jones (2004) included both faculty and adjunct faculty in their research but focused on access to technology, the roles of technology, and institutional support systems. Their research did not address the process of skill development and collaborative learning and the role of technology in improving teaching and learning.

Allan and Lewis (2006) address the roles of membership in a virtual learning community but do not address membership in physical learning communities. The

identity of community members, in the virtual environment, does not focus on developing skills, but merely attributes in the virtual community.

Brinkerhoff (2006) noted that participation in a structured professional development activity could improve individual technology skills and beliefs. This research focused the impact of a professional development activity over time, and did not address the impact of technology on learning, but merely on teaching.

The uses of technology for the virtual community acknowledges the potential for a wide range of technological skills and the variety of technology available (Dubé, Bourhis and Jacob, 2006). The research did not address methods to provide technical support in formal or even informal structures.

Glowacki-Dudka and Brown (2007) identified the roles of both university supported and independent learning communities. Their research focused on faculty reasons for participating in the learning communities.

Nugent, Reardon, Smith, Rhodes, Zander and Carter (2008) identified the role of faculty learning communities in improving teaching and learning. Their research focused on the learning community at a large urban research university with an initial institutional launch of faculty learning communities. The initial impact was perceived as positive.

Ash, Brown, Kluger-Bell and Hunter (2009) focused on the role of inquiry to develop learning communities. While their research identified the process of learning community development, this research focused on improving teaching without using technology. The process of community development was based in part on the mentor member and growth for the apprentice member of the community.

Darling-Hammond (2009) identified a process to measure teaching effectiveness. Linking teacher effectiveness to professional development strengthens the role of professional development, however, the form and structure of professional development was not defined to include learning community activities.

To create effective learning communities, Herbers, Antelo, Ettling and Buck (2011) noted that creating time and opportunities for connecting between members should be a focus for all communities. Providing opportunities for activities that promote connections is a part of identifying strengths and weaknesses both for the community and the community members.

This study extends the current research to identify the impact of technology on improving student learning. The role of a faculty learning community on integrating technology in the classroom is also a focus of the proposed research. Additionally, the integration of technology skills will focus on group or community growth rather than individual growth.

Summary and Conclusions

The research focused on the impact of professional development activities for faculty. Much of the existing research focused on personal skill development, but did not focus on the use or integration of these skills in teaching. Personal skill development may improve personal performance and efficiency, but the link to improved teaching has not been addressed in depth in the literature reviewed. Professional development activities must “enable good practice on the part of teachers” (Darling-Hammond, 2009, p. 3). The professional development activities were integrated into the learning communities of

Senge (1990), Lave and Wenger (1991), Wenger (1998), and Wenger, McDermott and Snyder (2002). Through participating in learning communities faculty learned new skills and found examples of participatory professional development (Fayne & Ortquist-Ahrens, 2006).

Learning communities, or in this case faculty learning communities, provided opportunities for collaboration across academic disciplines (Murray, 2002). The opportunities for collaboration, reflection and growth are more likely to be present in faculty learning communities (Guskey, 2003) than unstructured groupings. Guskey (2003) noted the importance of sharing best practices in creating an effective professional development program. Minkler (2002) noted that learning communities can improve student learning, retention and academic success. As participation in community activities increased and became more relevant to teaching and learning, faculty participating found greater opportunities for growth as professionals.

The learning community provides a sense of belonging to it's members and promotes professional development through shared growth (Wenger, 1998). Through the activities of the learning community and the promotion of learning the members of the community increased their worth both individually and collectively as members of the community. The professional development is a part of the community activities (Senge, 1990).

Technology becomes the means to professionally develop the faculty learning community members. Using common educational technology, faculty learning community members connect with other community members (Allan & Lewis, 2006). A

learning community can help members "develop confidence and expertise" (Allan & Lewis, 2006, p. 851). Participating in the learning community creates a shared body of knowledge and a community of experts. Technology also becomes the means for community development. Through the use of technology and integration of technology, faculty members quickly gained proficiency with the technology, but lacked the ability to share best practices with others (Mars & Ginter, 2007). Through technology, faculty learned skills that were shared with others through community and quickly became noticed as professional development.

The literature reviewed indicates several gaps that this research would address. First, the literature did not address the role of the community on improving the integration of technology in the classroom. Second, the literature did not explore the role of technological skills in improving teaching. Finally, the literature did not identify the role of technology in improving student learning. This research provided faculty members the opportunity to learn, as members of a faculty learning community, and become better prepared to integrate technology in the classroom and improve student learning.

Chapter 3: Research Method

Introduction

The purpose of this research was to describe and identify the impact and effect of technology-based faculty learning communities on student engagement and learning. The research identified best practices of faculty learning communities through interviews and observations of a faculty learning community formed as part of this study. The research focused on the faculty learning communities and activities that contribute to increased student learning.

Research Design and Rationale

The main questions guiding the research were:

- How do community college faculty communities of practice impact technology integration?
- How do community college faculty communities of practice impact technology adoption?

The study sub-questions were more topical, and provided a framework for the case analysis.

- How would the technology-based faculty learning communities be described?
- What impact do communities of practice have on student engagement? How do the communities of practice help in student retention?
- What impact do communities of practice have on improving student learning?

The research described the impact and effect of technology based faculty learning communities on student engagement and learning. The research questions looked for factors that indicate or explain a cause-effect relationship (Stake, 1995) between participation as a member of the learning community and student engagement and learning. The research lead to an evaluative question (Stake, 1995) that determined the impact of the learning community on student engagement and learning.

The research site used for the case study was a university located in the Midwest region of the United States. The research subjects consisted of first- and second-year faculty tenure-track members. This faculty subpopulation was chosen because its members were beginning to prepare for their promotion and tenure reviews, and as such were more motivated to develop teaching skills and integrate new technologies into their teaching. There were seventeen second-year faculty and nineteen first-year faculty that were invited to participate in the research. Out of the total of thirty-six, fourteen self-reported their unavailability to participate and eighteen did not respond to email solicitations.

Research Tradition

The case is "an institution, a program, a responsibility, a collection or a population" (Stake, 1978, p. 7). This research was bounded by a specific place (Merriam, 1998) at the campus for the public university, more specifically a community college, ideally new faculty with less than five years of teaching experience from multiple departments and colleges. In this situation, the case was more than a particular individual; this case study method focused on the faculty learning community. The group provided a

unique opportunity to examine identity and group dynamics. The identity of the group, in this case a faculty learning community, provided opportunities to observe group processes and group dynamics.

The research population was composed of three second-year faculty members and one first-year faculty member. The faculty members represented four different academic areas. They also represented recent teaching experience as well as business experience with limited teaching experience.

Case study methods provided opportunities to describe and interpret events and "develop a typology, a continuum, or categories that conceptualize" differences (Merriam, 1998, p. 38). Fetterman (1988) noted that the qualitative approach may provide "a wealth of useful, practical alternatives" (p. 17). These theories can be used to evaluate other cases. Theories can be derived from observation of group processes, individual actions and responses within the group and individual interactions to the group. The case study became an "exploration for those who search for explanatory laws" (Stake, 1978, p. 7).

Research Description

Community college faculty involved in professional development activities were observed and interviewed. The study focused on "understanding the dynamics present" (Eisenhardt, 1989, p. 534). These dynamics ranged from traditional lecture teaching to more contemporary teaching strategies and methods to learning strategies and methods to group processes. Observation and interview data were collated into a case from which hypotheses and theories were built that pointed to more generalizable knowledge.

Community members were interviewed to share their feelings and reactions to the community activities. The interviews provided personal insight into the community. Personal insights helped clarify the "spontaneous, rich, descriptions" (Kvale, 1996, p. 133). It was important to identify community members' personal insights into the community activities because the insights provided a rationale and explanation for their actions. The rich descriptions they provided help identify trends and deepen the interview responses. It was important that the interview provide an accurate description or narrative from the community members' perspectives. Personal interviews provided an opportunity to identify personal concerns and issues. Community members personal concerns and issues were important to help understand their technological abilities, for instance, as well as their teaching values and how technology changed or altered these values. The personal concerns provided depth to the case study narrative. The interviews focused on the role of technology in activities to improve student learning. Observing community members as they interact with one another and technology provided context for the interview results. Observing the physical space as well as the nonverbal interactions between members provided a rich description for analysis.

Role of the Researcher

With previous experience as a faculty development specialist at other institutions, I was familiar with the range of learning community issues. I assumed the role as faculty learning community facilitator. As facilitator, I observed the interactions of the faculty (Cox, 2004). Observations included recording and describing non-verbal communications between faculty learning community members. These observations provide one form of

data triangulation (Onwuegbuzie, Leech, & Collins, 2010). Within a faculty learning community, the facilitator or researcher serves multiple roles from the recorder of actions and activities to resource. I observed and interviewed the faculty learning communities. The interviews were conducted within the faculty learning community structure. I assumed multiple roles (Stake, 1995). The faculty learning community met to discuss the role and focus of the community. Additional meetings were determined by me to conduct interviews as needed.

I was a participant observer. I would "guide the process, organize resources [and promote] reflection/critiquing" (Rock & Wilson, 2005, p. 89). In this capacity, I probed community members' perceptions with open-ended questions. Participating as facilitator of the learning community would allow me to observe and record the interactions of the faculty members. I became "the primary instrument for data collection and analysis" (Merriam, 1998, p. 7). As the facilitator of the FLC, I would "provide training and resources" for the FLC members (Nugent et al., 2008, p. 53) on topics as needed or determined by the members of the faculty learning community.

As a participant in the research, I questioned participants, observed their interactions and facilitated discussions, workshops, seminars and gatherings of the activities of the learning community (Johnson & Brescia, 2006). The community members and I, all share in the activities and grow professionally from each other (Wenger et al., 2002).

Methodology

Participant Selection

The general research population included classroom teaching faculty and adjunct faculty at all physical University community college campus locations. As a researcher, I do not supervise or evaluate any of the participants directly or indirectly. The teaching load and administrative oversight are determined by a faculty member's respective academic department chair. Using available faculty and adjunct faculty listings, a sample was drawn to ensure proportional representation from all academic disciplines, campus locations, and faculty types. The sample was composed of first and second-year faculty. Ideally the faculty learning community will be a "cross-disciplinary faculty group of 8 to 14 members" (Cox, 2001, p. 71). Faculty learning communities are designed "for professional development, for personal connections with peers, and for opportunities to interact" with others engaged in teaching (Glowacki-Dudka & Brown, 2007, p. 29).

Participants for the faculty learning community were invited to participate, through an email message sent to the faculty and adjunct faculty employee groups. Emails were sent to 36 individuals that were either first- or second-year faculty members. There were responses from nineteen for a response rate of 52.7%. Of the nineteen respondents, fourteen withdrew themselves from participation, due to scheduling issues. The email invitation described the focus of the research and a tentative meeting schedule for the faculty learning community. Informed consent was obtained prior to participation.

From the email solicitation, participants were be selected to create a single cross-disciplinary learning community of 10 participants, with representation across the

instructional divisions (1) humanities, (2) health occupations and human performance, (3) mathematics and science, (4) technology, (5) business and public service, and (6) social sciences and performing arts.

Participants were also selected based on a self-reported level of technological competence (infrequent use, periodic use and frequent use). The participants who self-report a periodic and frequent level of technological competence possessed a certain level of skills that have been associated with greater success as members of the learning community.

Using an email solicitation and invitation for participation, faculty and adjunct faculty at this university were invited to apply. The solicitation must be responded to within two weeks. Those who indicated their desire and availability to participate were notified. This group was further narrowed to ensure a cross-disciplinary mix from the instructional divisions. Ideally, a final group of no less than 8 and no more than 14 would have been selected and notified of their selection. After the initial solicitation and invitation was submitted and follow-up solicitations and invitations sent, there were five informed consent forms signed and returned. These five represented five different academic units across the institution. Since the number of participants was smaller than originally anticipated, I consulted with the dissertation committee members, who agreed that a group of five faculty members representing the various disciplines was considered an acceptable learning community for this study.

Observation Protocol

Faculty learning community activities provided opportunities for observing individual as well as group interactions. Observations were conducted at each learning community activity. The observation protocol was both descriptive and reflective, as suggested by Bogdan & Biklen (2007). The purpose and intent of the descriptive observation was to accurately describe the "pieces of evidence" (Bogdan & Biklen, 2007, p. 122). The descriptive field notes strove to:

- Provide a description of the dialogue between and among community members. This description included key ideas and concepts from the observation (Bogdan & Biklen, 2007).
- Describe the physical setting and configuration of the setting. This description may provide insight into the effect or impact of the physical setting on group dynamics and interactions. The physical setting may influence group interactions. Introducing technology into the physical setting may also promote or encourage community members to use the technology.
- Describe the activities of the group including one-to-one activities between members of the learning community.
- Describe the role of the researcher during the observation.

The reflective field notes were used to:

- Reflect on the method used and evaluate the impact of the method on the data or description (Bogdan & Biklen, 2007).

- Provide indications of the data analysis, themes emerging, and initial conclusions from the observation (Bogdan & Biklen, 2007).
- Provide clarification for descriptive observations.

The observation protocol, with both descriptive and reflective notes, were used for both data interpretation and data analysis. Data interpretation included "developing ideas" from the observation (Bogdan and Biklen, 2007, p. 159). Data analysis included organizing data around trends and themes and synthesizing the trends and themes (Bogdan & Biklen, 2007). This analysis informed the implications and conclusions of the research.

Interview Protocol

The interview protocol included both structured questions and unstructured questions (Lincoln and Guba, 1985). Structured questions will seek to answer the research questions; unstructured questions will clarify and explain perceptions and actions of the participants. Both structured and unstructured questions may provide insight for me (LeCompte & Goetz 1982). The unstructured interview questions probed for responses and perceptions about the roles of technology in teaching. The personal feelings and insights of the participants was important to help identify the role and use of technology in teaching and improving student learning.

The interview protocol provided a semistructured format. The semistructured format allowed me to follow "the leads of informants and proving into areas that arise during interview interactions" (Hatch, 2002, p. 94). Structured interviews included specific questions that were asked of all members. The answers provided a baseline for

identifying trends, key concepts and terms. Some questions focused on a "highly structured section" (Merriam, 1998, p. 74). The structured section focused on demographic information that provided insight into technological skills and teaching preferences. Specific questions were used to structure the interview. Open ended, and exploratory questions were used to provide opportunities for personal expression. Main interview questions attempted to answer the research questions (Rubin and Rubin, 2005). The specific structured questions provided others topics to be explored in the interview. Main interview questions included:

- How does your participation in the faculty learning community change your teaching? (Caffarella & Zinn, 1999).
- How does your participation in the faculty learning community change your perceptions about technology? (Kopcha, 2010).
- How does your participation in the faculty learning community change your perception of student learning? (Grant, 2005).
- What instructional technology do you regularly use? (Brinkerhoff, 2006).
- How is the use of instructional technology supported by the institution? (Mars & Ginter, 2007).

Follow up questions refined and sought clarification (Rubin & Rubin, 2005). The follow up questions were meant to allow "the researcher to respond to the situation at hand … and to new ideas on the topic" (Merriam, 1998, p. 74). Follow up questions include:

- How do you improve your teaching?

- How does technology improve teaching and learning?

Data Collection Procedures

- Data collection included both observation and interviews. Faculty learning community activities were observed using the observation protocol. The observations of activities provided a rich description of the group, group members, and the interactions of the group while participating in activities. The observations provided a real-time view of activities as well as context, and "insight into interpersonal behavior and motives" (Yin, 2009, pg. 102).
- Interview protocols were used to enrich the descriptions from observations. The interviews provided additional insight for further interview questions. The initial interview may lead to probing questions. Personal interviews with faculty learning community members were conducted. The observations and interviews were summarized to identify themes (Miles, 1979). The faculty learning community met for eight sessions over a twelve week period. The interviews and observations were scheduled during weeks eight through twelve. This provided me with multiple opportunities to observe the community. Individual interview sessions were scheduled at different times before or after the learning community sessions. Multiple forms of data, including interviews and observations, provided increased reliability for the research.

- Faculty discussions and one-to-one interactions with other learning community members are events and activities that should be observed to determine subtle nuances, for example, of technological uses by faculty members. The observations were conducted to provide descriptions of the activities and interactions of the learning community (Stake, 1995). The observation notes included both "descriptive and reflective notes" (Creswell, 1998, p. 125). The observation protocol included both descriptive and reflective field notes (Merriam, 1998). Descriptive notes included dialogue notes, activities, and participant demographic information (Bogdan & Biklen, 2007). Reflective notes included inferences made by me, perceptions, comments and personal interpretation of events observed (Bogdan & Biklen, 2007).
- Interview questions represented the continuum of "highly structured, questionnaire-driven interviews [to] unstructured, open-ended, conversational" (p. 74) included open-ended questions used to identify trends and topics from responses (Merriam, 1998). The interview questions focused on the perceived role of technology in teaching. Faculty members' perceptions of the value and role of technology in improving student learning may be shared during the interviews. Observing faculty members when using and learning technology provided additional insight into the skills that are developed. Interview questions were linked to the

descriptive and reflective notes. Reflective notes were added to the interview questions and answers.

- Follow-up sessions for the interviews were scheduled to encourage member-checking of the interviews (Merriam, 1998). These sessions were conducted with individuals or with the larger group or subset of the group to determine the validity of the interview data.

Data Analysis and Interpretation Plan

Interview data and notes were analyzed to identify key words and phrases. Observation notes were analyzed to describe patterns from interacting one-on-one or with the group at large. The data analysis resulted in a narrative describing the impact and effect of educational technology used with a faculty learning community to improve student learning and engagement. The narrative included "quotation, illustration, and even allusion and metaphor" (Stake, 1978, p. 7).

Data was analyzed "to understand behavior, issues, and contexts with regard to our particular case" (Stake, 1995, p. 78). Emergent patterns characterized the data, and provided an explanation to the research question. Data analysis began with simple categorization of topics and themes identified through the interviews. The emergent patterns were identified through both a typological analysis and enumeration (Goetz & LeCompte, 1984). The data patterns were identified through a process of inductive coding, where the interview transcripts and notes were closely read to identify categories and themes. The categories and themes were used to identify patterns (Thomas, 2006).

These patterns provided a structure for the descriptive report and analysis and description of the activities of the learning community.

Discrepant cases were reviewed carefully to determine if they will be included, or excluded, from the overall analysis (Miles & Huberman, 1984). The discrepant or negative case may help determine the outer limits of interview questions and answers. The identification of the discrepant cases, as "additional data" (Stake, 1970, p. 202) helped determine the breadth and depth of the interview narrative. These cases were used to determine the scope of the learning community.

Issues of Trustworthiness

Internal validity will be established through triangulation, member checks and long term observation (Merriam, 1998). Research data will be triangulated with multiple data sources from at least two individual interviews and one group interview and at least two observations. Member checking during interviews will determine the plausibility of the data. Debriefing individual participants will provide additional data to improve and address validity issues (Oliver-Hoyo & Allen, 2006).

Ethical Considerations

Privacy and confidentiality of the research participants is critical (Christians, 2005). My observation notes were not identified by name of participant, but by pseudonym. The observation notes were taken digitally and password protected. These notes are additionally stored off-site, in a secure location, on a flash-drive. Interview transcripts are also be identified by a pseudonym. Interviews were recorded digitally and password protected and stored off-site, in a secure location.

Research Site

The research site of the bounded case was a Midwestern university. The university is a public, state-supported institution. The university is a residential campus, offering associate degrees, certificates and selected bachelor's degrees. The faculty focus primarily on teaching. The faculty teach typically fifteen credit hours each semester. The nature of community college faculty focuses on teaching and not research or publication.

The Center for Teaching and Learning was established to provide faculty and adjunct faculty members of this university professional development opportunities through workshops and individual consultations. Many of the faculty members have used the services provided and continue to seek additional professional development.

Participant Protection and Informed Consent

Participants must complete and return an informed consent form prior to participation. The study will comply with ethical standards and guidelines from the Institutional Review Board (IRB) of Walden University. IRB approval 04-16-13-0106756 was granted on April 16, 2013 and expired on April 15, 2014. Transcripts from observations and interviews are secured and locked off site, and identifying names were replaced to ensure confidentiality of the research participants.

Research Participants

The research participants formed the faculty learning community of ten participants. They represented a cross-disciplinary group of faculty from business and public service, social sciences and performing arts, technology, health sciences and health occupations and the humanities, who have been teaching at this institution. The

participants represented a wide range of experience teaching, ranging from the first-year to second-year instructor. This group of participants were diverse not only in discipline, but experience as well.

The faculty learning community uses technology to improve teaching directly and improve learning indirectly. Bringing faculty members from a variety of disciplines together promoted an interdisciplinary and collegial approach that some faculty members may not have experienced in the past. This faculty learning community focused on identifying best practices for technology, sharing these practices among the members, determining the impact of technology on their specific discipline and evaluating the role of technology in their specific classrooms. The learning community was led, or facilitated, by a member of the community. The facilitator worked to "establish a climate conductive to genuine inquiry, risk-taking, learning, and productivity" (Ortquist-Aherns & Torosyan, 2008, p. 4). The facilitator is not the topic expert, but one that understands the topic and can work with other members to improve or increase their understanding. The faculty learning community facilitator will be selected from the community members (Sandell, Wigley, & Kovalchick, 2004).

Members of the faculty learning community participated in activities that improve student learning through improved teaching (Burnstad & Hoss, 2010). The faculty learning community is one form of professional development (Caffarella & Zinn, 1999). A faculty learning community "promote[s] collaborative teaching, break[s] down … isolation" and serves to inspire faculty members to teach better (Minkler, 2002, p. 56). The learning community activities will be a part of a long-term professional development

plan. Specific learning community activities included (a) investigate, implement and evaluate technology that improves teaching and learning, (b) identify and determine effective uses of technology for improving teaching and learning and (c) assess the effectiveness of technology used in teaching on improving student learning.

Learning Community Activities

The learning community met to improve teaching and learning as well as become a community of learners. The activities were scheduled to accommodate maximum participation.

Faculty learning community activities for this research focused on:

- Seminars and discussions on teaching and learning (Cox, 2001). These seminars and discussions will provide opportunities for idea exchange and sharing of best practices.
- Teaching projects (Cox, 2001). The focus of the learning community is to improve teaching. Community members will integrate ideas and topics from the community into the classroom.
- Technology integration (Cox, 2003a). Learning community members will be exposed to educational technology, learn how to use the technology and explore methods to integrate technology into teaching and learning.
- Personal reflection (Cox, 2003b). Community members will reflect on their growth and evaluate their personal growth as teachers.

- Collaboration (Cox, 2004). Through the shared experiences of the learning community, members will develop a greater appreciation for collaboration and shared practices.

The faculty learning community activities were shaped to include technology applications and methods to integrate technology into teaching and learning. Activities included skill building as well as discussion.

Research Plan

- First, solicit participation in the faculty learning community. Using email, contact all faculty members, inviting their participation. Provide faculty members with an overview of the research and expectations for participation.
- Using positive responses for participation, select members for the faculty learning community. Maintain academic division balance with representative members from each academic division.
- Using email, notify faculty learning community members of their selection.
- Provide faculty learning community members with tentative meeting schedule and locations.
- Schedule the first meeting for the faculty learning community after 4 weeks of meeting informally.
- At the first meeting identify roles of learning community members.
- Provide timeline for interview schedules.

- Conduct individual interviews with learning community members.
- Transcribe and analyze interviews.
- Create learning community topic listing for discussion at subsequent meetings.
- Conduct subsequent interviews with remaining learning community members.
- Transcribe and analyze interviews.

Report Format

The report was structured to describe the impact of the faculty learning community on student learning. Using the results from the typological analysis, trends to describe best practices were identified. The interview questions provided a rich description from the individual participants. The responses from the interview questions were used to further describe the role of the faculty learning community on teacher improvement and technology integration in the classroom. Data was organized around recurring themes. The interview categories identified from the inductive data analysis of the transcripts were used as headings for the report (Thomas, 2006). The report also identified and developed a list of best practices on the role of technology in developing community college faculty learning communities to improving student learning.

Summary

The research is a case study. A case study approach focused on the processes used within the group. This singular, faculty learning community, deliberately formed for observation purposes, provided a unique case for study as identified by Yin (2009).

The research population was drawn from faculty members and adjunct faculty members at a Midwestern university. From the population, a sample was selected to make up the faculty learning community. The sample was "a cross-disciplinary faculty group of 8 to 14 members" (Cox, 2001, p. 71). The faculty learning community explored the impact of the community as a professional development activity. The professional development activity explored the role of technology to promote both community development and professional development.

I facilitated the faculty learning community activities (Cox, 2004). This participatory role provided the ability to observe group activities and document group processes. As a participant observer in the faculty learning community, I was able to "elicit from subjects their definitions of reality" (LeCompte & Goetz, 1982, p. 390). As facilitator I was immersed into the process of group decisions and has insight into the learning community. As a member of the university I sought to identify and richly describe the role of the faculty learning community and the members (Guba & Lincoln, 1981). Becoming aware of my relationship to the learning community increased the need for richer data. My role was to observe the interactions, "to understand, to explain, and to describe" (Guba & Lincoln, 1981, p. 133) and create an environment that fostered deeper and richer interactions. Stake (2005) noted "researchers are guests in the private spaces" (p. 459) and the role of the facilitator should respect the invitation into the private space. The case study approach required a descriptive narrative, and to provide the narrative it was important that I "observe what we can, ask others for their observations, and gather artifacts" (Stake, 2005, p. 452). Lincoln and Guba (1985) noted four criteria to establish

trustworthiness: credibility, transferability, dependability, and confirmability, and each criterion will be addressed. Interviews, notes, and field journals provided a rich narrative documenting the evolving professional development found in the learning communities.

Chapter 4: Results

Introduction

The purpose of this research was to describe and identify the impact and effect of technology-based faculty learning communities on student engagement and learning. This research focused on the faculty learning communities and activities that contributed to increase student learning. The research questions addressed in this study were: how do community college faculty communities of practice impact technology integration, and how do community college faculty communities of practice impact technology adoption.

The research found that within the faculty learning community individual faculty members found value through collaborative activities. These activities provided opportunities for discussion and sharing of best practices that could be used in individual classrooms. Through these activities the active technology users were more likely to adopt new or different technology into their classrooms.

The chapter presents a discussion of the research setting and participant demographic information. Data collection and analysis are discussed, and the evidence for trustworthiness and summarize the results. The chapter concludes with a summary focused on the initial research questions.

Research Setting

The research site for the case study is a Midwestern university. The university, hereafter referred to as ABC College, is a residential campus that offers selected bachelors' degrees, associate degrees, and certificates of study. With around 10,000 part-time students and 6,000 full-time students the university continues to provide graduates

in response to the changing economic and business needs of the state and region. As the educational landscape continues to change in terms of assessment, accountability and accreditation, the 250 full-time faculty members are also undergoing a change and shift in their roles and primary functions. Greater accountability and a focused emphasis on assessment of student learning both in the classroom and outside of the classroom are now placing faculty in a much broader role than that of classroom instruction only. Committee work, institutional requirements, accreditation requirements, degree advisory committees and marketing academic programs to potential students are all requiring more and more time.

The research site is currently in the midst of major curricular revisions to meet the requirements from the State Commission of Higher Education limiting credit hours for certificates, associate degrees and bachelor's degrees. As such, faculty members are facing degree restructuring, curricular reorganization and credit hour reductions for the degrees. Not only is the requirement causing a re-examination of the degree structure, it is also requiring a re-examination of the course structure. The focus on curriculum and restructuring degree programs has required time and effort to determine the relevance of each credit hour and in some cases the relevance of entire courses to the degree program. Faculty are revising course curriculum and program curricula to meet these new requirements. These environmental forces have been the source of many discussions throughout the research site.

Additionally, faculty members are also working through issues connected to the teaching loads of full-time faculty and adjunct faculty as well. As the curriculum changes

numbers of required hours for a degree, the teaching loads of faculty are adjusted to accommodate decreased degree hours. These unexpected shifts in the normal teaching activities have, for some faculty members, required more time and attention to address these issues. Participation in other activities that may make a significant impact in teaching and student learning has lessened in response to other activities and requirements. Faculty members who may have had the time to participate in this research are now involved in curriculum committees, articulation visits, accreditation visits, program assessment as well as marketing their academic programs to prospective students. As the number of adjunct and part-time faculty is reduced, the other duties of committee participation and marketing have remained with full-time faculty, who now have a greater teaching load each semester, and less time available for professional development activities.

Demographics

Thirty-seven faculty members met the research eligibility criteria: 17 second-year faculty members and 19 first-year faculty members. Using a list of first and second-year faculty members, 17 who were in their second year of teaching and 19 who were in their first year of teaching, I sent out the IRB approved "Invitation to Participate" along with the approved consent form to 36 individuals on September 3, 2013. I received two signed consent forms. Three days later, I had learned that one individual was no longer employed by the university, three declined to participate, four were simply unavailable due to classroom scheduling, and two had no instructional duties. This reduced my potential participant list down to 26.

On September 9, 2013, I sent out a reminder email with the invitation to participate and the consent form to 26 potential participants. I received notice that one more was unable to participate due to scheduling conflicts and available time. On September 18, 2013, I sent out a third reminder email, invitation to participate and consent form to the 25 potential participants. With this email, I learned that one more participant was no longer employed by the university, and two more had declined to participate. My potential participant pool was now at 22. On September 26, 2013 I sent out another reminder, and received three signed consent forms.

On October 2, 2013, I had five consent forms signed and returned. These forms corresponded to four participants in their second year (33% of the second-year faculty), and only one participant in their first year (10% of the first-year faculty). The research group of four participants represents 10% of the first-year and second-year faculty members. While the number was less than the desired size for a faculty learning community, the participants were actively engaged in the activities and in consultation with the dissertation committee it was agreed that the smaller size would not significantly impact the research results.

The research participants' ranks, years of experience, and affiliations are listed in Table 1. One participant, who returned the signed consent form, did not participate in any of the observations, and was excluded as a result. The four participants provided a wide range of technological expertise. Attempts were made to contact the non-participants, but were unanswered.

Table 1

Research Participants

Academic Department	Rank	Years Teaching Full-Time
Paralegal	Instructor	1.5
Culinary Arts	Instructor	1.5
Accounting	Assistant Professor	1.5
Mathematics	Assistant Professor	0.5

I scheduled discussion sessions, technology exploration sessions, collaborative sessions, and interviews with each of the participants. The room used for the sessions is a typical smart classroom. Responding to increasing use of classroom technology, the university has deployed the smart classroom technology in over 150 classrooms across campus. This provides a common technology for classroom instruction. At the front of the room is the instructor's podium with high-end computer, graphics tablet, and digital presenter. The projector is ceiling-mounted to project on a screen in the front and center of the room. Ceiling mounted speakers complete the media rich classroom experience. There are three oversized tables with seating for six comfortably at each table. The lights are dimmable to accommodate visibility.

The sessions were scheduled at the university's common hour (11:00 am to 12:00 pm) or later in the afternoon (between 2:00 pm and 4:00 pm) to allow maximum participation from the research participants. These sessions lasted approximately one and did not interfere with teaching or other requirements either before or after the scheduled

sessions. I was sensitive and aware of the participants' needs to quickly return to their duties and worked to ensure the sessions did not last longer than the agreed upon hour in length. As the participants arrived to the sessions, I greeted and welcomed them. The participants were cheerful and pleasant. I believe that they viewed their participation as an opportunity to learn and grow professionally, and they were always engaged in the activities. At this Midwestern university, class sizes are typically small and opportunities for faculty to know faculty and staff is common. The participants had started their employment within one or two academic years of each other and had developed a collegial relationship with each other.

The discussion sessions, technology exploration sessions, collaborative sessions and interviews were each conducted with four participants. I observed the four during the observation sessions noting their discussions, technology explorations and collaborations as well as conducting the interview sessions. The discussions focused on exploring and sharing best practices between participants: what worked in their respective classroom, what didn't work as well, and exploring reasons for their successes. The collaboration, or sharing of best practices, occurred during discussion sessions. Even though technology was available and operational for participants to explore, they chose to participate in discussions rather than explore technology. I observed that their interests were more focused on finding ways to use technology more efficiently that learning how to use technology.

The interviews used the structured questions to learn the participants perceptions about the role, relevance and importance of collaboration on teaching, student learning

and technology. The structured questions, and their answers often provided areas for follow-up questions. The interview protocol in Appendix B was used to record my notes on responses as well as follow-up questions. The four participants have been active in the discussion sessions and the interview sessions have been extremely insightful and reflective for both the myself and the participants. Participant 11 indicated that "if we never step back and take a look at what we are dong … I don't think we can improve, and I think we become antiquated." The participants became more aware of their practices in the classroom and sought opportunities to share with others and learn from others.

Summarizing the sessions is necessary to provide a point of comparison between the sessions. While there were no predetermined goals or measurable outcomes the descriptive and reflective notes from the Observation Protocol helped frame the session overview and identify the self-determined goals for each session as well as the outcomes. Table 2 provides a descriptive overview of the sessions by type, date, number of participants, overview, goals and outcomes. After analyzing the observation protocols and notes, the overview for each session become evident and the goals were identified. Near the end of each session as the discussion was concluding, the participants identified their personal outcomes. While the outcomes were general, they reflect the personal and professional improvement for the participants.

The outcome identified as discuss visuals used to improve individual learning (see Table 2) reflected the participant's experience in the classroom. Aware that students are media-centric, the participant wanted to find visuals that would engage students and provide a way to connect with and, in some way, entertain the student.

The outcome identified as discuss role of digital citizenship and the impact on teaching and learning both within departments and across departments (see Table 2) focused on the participant's approach to a democratic and ethical classroom. The participant is keenly aware of the potential for plagiarism and wonders how digital citizenship is taught. Also, the participant wondered how digital citizenship within their academic department as well as \across academic departments.

The outcome identified as discuss shifting teaching to accommodate technology and integrate technology into the classroom (see Table 2) reflected the participant's expectations to use the most appropriate technology, rather than merely use technology just because it is available. The participant wondered how teaching was and should change based on the available technology for the teacher as well as the student.

The outcome identified as discuss the role of change in adapting or adopting instruction to available technology (see Table 2) reflected the participant's desire to ensure that all instruction with and without technology is producing learning. Differing slightly but significantly from the previous outcome, this participant wanted to identify the roles of technology and specifically how technology can be used in different teaching roles and settings.

Table 2

Descriptive Session Overview

Primary Session type	Secondary Session type	Session date	Number of participants	Overview	Goals	Outcome
Discussion	Technology exploration	10/04/2013	1	Discussion of student technology skills, inadequate soft skills and little organizational skills	Identify ways to improve problem solving with technology, improve soft skills and organizational skills	Discussion of visuals used to improve individual learning
Discussion	Collaborative	10/08/2013	1	Discussion of student focused technology uses in class, staying on task with technology	Identify levels of competency for students and faculty with technology	Discussion of role of digital citizenship and impact on teaching and learning within department and across departments
Discussion	Technology exploration	10/11/2013	1	Discussion of change issues for faculty and students when using technology	Identify technological literacy for students and faculty	Discussion on shifting teaching to accommodate technology, integrating technology into classroom
Discussion	Technology exploration	10/25/2013	1	Discussion of technology uses in classroom by faculty and students	Identify ways to evaluate impact of technology on teaching and learning	Discussion on role of change in adopting or adapting instruction to available technology

Data Collection

Scheduling activities, observations, and interviews was somewhat more controllable. Given the teaching schedules, required office hours and university holidays, times were agreed upon and scheduled. Teaching loads for the faculty participants range from 15-21 credit hours, a heavy load by any comparison. The weekly schedule of the university is fairly set, and thankfully there were not any early or mid-semester weather delays. Participants also requested that, understandably, the sessions occur during the normal hours of the university, between 8:00 am and 4:30 pm. With these considerations, I scheduled observations and interviews accordingly. Three of the four participants, as indicated in Table 3, participated in observations and interviews. Participant 10 was unable to schedule an interview.

Table 3

Interview and Observation per Participant

Participant	Observation	Interview
10	10/25/13	
11	10/08/13	12/05/13
	12/05/13	
15	10/04/13	11/12/13
	11/12/13	
34	10/11/13	11/12/13
	11/12/13	

I scheduled dates and times that were mutually agreed upon for the learning community activities: discussions, classroom teaching practice, opportunities to explore technology and collaborative activities. As each meeting started, the faculty participants entered the room, engaged in typical small talk, and then sat in a chair. They were interested more in discussing things than in using the technologies. I was able to observe body language, gestures, and nonverbal communications. These subtle, nuanced conversations were much richer than the actual discussions themselves. I was able to observe the nonverbal communications paired with the discussions, and was able to identify trends and themes much easier. I observed the discussion sessions.

The discussion sessions, or observations, were approximately an hour in length and were conducted on October 4, 2013, October 8, 2013, October 11, 2013 and October 25, 2013. The activities for the learning community were best described as discussions on

teaching and learning where ideas were shared and evaluated, reflections on personal and professional growth, and discussions focused on the uses, the intentional uses, of technology that improve student learning or at least engage students in the learning process.

The technology of the SMART classroom was always available and turned on for each activity and observation, but the participants wanted to set and discuss, and have a meaningful conversation. The participants wanted to take advantage of the "time and opportunity for interaction and talk about ideas, one's work" (Rice, Sorcinelli, & Austin, 2000, p. 13). As the first observation session started, it became evident to me that the greatest thing the participant could contribute was conversation. The conversations were engaging, and deep, focused on the wide range of uses of technology to improve teaching and finding ways to engage students throughout the learning process. The most valuable thing I could do was pay close attention and ask questions to clarify the participant's ideas and promote a greater sense of reflection.

As the observations were conducted, I recorded descriptive data using the Appendix A Observation Protocol. Descriptive notes were added as the observation was occurring and after the observation had occurred. I spent time after each observation reading the descriptive notes and adding even more reflective notes, which gave me time to reflect on the descriptive notes.

Scheduling observations and interviews was accomplished using email. Four additional observations were scheduled, but were not attended due to last minute unscheduled and unavoidable participant schedule changes. The schedules were

mutually agreed upon by the participants, taking into account institutional schedules, college schedules, and department schedules.

I recorded the interviews using Dragon Recorder on an Apple iPhone 4 and 5s. The size of the iPhone made it somewhat unnoticed during the interview and allowed the participant to focus more on the question than the technology being used. InterviewScribe was used to transcribe the interview audio files. It is a computer application that resides on a computer's hard drive, and is not a web-based application. The interviews were exported to a computer, where InterviewScribe was used to play phrases of the interview. These phrases were literally transcribed by me and saved as a text file. The time required to transcribe the interviews was longer than initially imagined due to my desire to capture the words as accurately as possible. I would listen to the interview audio file, transcribe, then listen again to ensure my transcription was as accurate as possible.

Data Analysis

After reviewing the completed observation protocols, for all sessions, it was insightful to see the top 25 terms. NVivo 10 was used to quickly sort through the observation protocols and provided a table showing the top 25 terms and similar terms. The insight from this review demonstrated, to me, that there was a great deal of importance attached to technology even though it was not used during any of the sessions. The focus was on discussing the uses, or more specifically, the range of uses for technology. Table 4 summarizes the top 25 terms from all of the observation sessions.

Table 4

Word Frequency From Observations, Top 25 Terms

Word	Count	Weighted percentage (%)	Similar words
technology	17	14.29	technological, technology
uses	13	10.92	use, uses, using
skills	8	6.72	skill, skills
identified	4	3.36	identified, identify
improve	3	3.36	improve
included	3	2.52	included
learning	3	2.52	learning
observations	3	2.52	observations
soft	3	2.52	soft
terms	3	2.52	terms
trends	3	2.52	trends
development	2	1.68	development
faculty	2	1.68	faculty
personal	2	1.68	personal, personalized
professional	2	1.68	professional
students	2	1.68	students
task	2	1.68	task
teaching	2	1.68	teaching
time	2	1.68	time
acceptable	1	0.84	acceptable
adequate	1	0.84	adequate
availability	1	0.84	availability
balance	1	0.84	balance
barrier	1	0.84	barrier
benefits	1	0.84	benefits

The terms from the observations gave me some potential insight for trends and terms that should emerge through the interviews. These terms indicated that the focus is not on technology alone, but that the use of technology, the role technology plays in both teaching and learning is pivotal in the experiences of the participants.

Using the observation word frequency table, the interview transcripts, once analyzed also with NVivo, indicated a similar word vocabulary had emerged. Table 4 indicates the top 25 terms from the interview transcripts. The interviews showed the role of active learning and teaching as more frequent than technology alone. These participants were focused on improving and positively impacting student learning through careful, critical reflection (Fulton & Licklider, 1998).

To listen to the participants voice their frustrations with student's technology uses, reinforced the need to explore or at least discuss different ways to use technology. It was not the technology specifically that participants were struggling with, but the uses, or the variety of uses for technology that improve and engage students. There were stories of how students use or misuse technology partially because of their lack of experience and exposure to using technology to improve learning.

Table 5

Word Frequency From Interviews, Top 25 Terms

Word	Length	Count	Weighted Percentage (%)
get	3	159	2.28
just	4	76	1.49
think	5	64	1.36
use	3	60	1.34
need	4	76	1.29
know	4	52	1.12
going	5	89	0.96
look	4	63	0.93
technology	10	35	0.91
class	5	46	0.87
students	8	32	0.83
way	3	39	0.78
still	5	35	0.75
understand	10	38	0.72
like	4	35	0.71
make	4	72	0.71
put	3	30	0.63
time	4	24	0.62
skills	6	36	0.61
math	4	22	0.57
take	4	60	0.56
things	6	23	0.56
much	4	27	0.55
got	3	20	0.52
one	3	20	0.51

Reflective notes from the observations provided insight into themes for further analysis. The reflective notes were further analyzed to determine trends or emerging themes. As I was observing the participants in the course of a discussion, I would make my descriptive notes capturing the scene, the concepts discussed and my personal

observations as the discussion transpired. The observation protocols were completed in the process of the observation, adding descriptive notes. The descriptive notes were then transcribed to Appendix A Observation Protocol for each specific observation session. The descriptive notes were then reviewed to identify and create the reflective notes, which would be used to identify themes and trends. The reflective notes captured my feelings and perceptions, and were used to help me identify important and recurring themes from the observation sessions. These terms were identified and used to group the remaining terms.

Soft skill terms and trends identified from the observations included: problem-solving skills, critical thinking skills, time management skills, quality, inadequate soft skills, adequate soft skills, organizational skills, stay on task, self-reflection, task focused, improve interactivity, deliberate uses of technology, intentional uses of technology.

Uses of impact of technology terms and trends identified from the observations included: constant training, using technology to identify skills and strengths, continual professional development, just-in-time professional development, finding balance, teaching and learning with and without technology, technology as hindrance for students and faculty, technology as barrier for students and faculty, improve technological literacy, convenience of technology.

Pedagogical uses of technology terms and trends identified from the observations included: improve individual learning, efficient uses of technology, effective uses of technology, media centric teaching and learning, personal uses of technology,

personalized uses of technology, responsible use, acceptable use, reluctance to use technology, benefits of using technology, availability of technology.

Soft skills were a key element for each observation. Participants commented on the role of technology to develop and enhance problem solving skills, critical thinking skills, time management skills and organizational skills. These soft skills may have, as indicated by the reflective notes from the observations, the ability to be enhanced or developed through the use of technology.

There was some variety when reviewing reflective notes that focused on the uses or impact of technology. The focus for this theme addressed the need for professional development, balanced uses of technology, and technology as a hindrance or barrier. The observations indicated the perception that there should be standard technology, conveniently located and available, and the need for a process to select, use and evaluate classroom technology.

Because the discussion observations and interviews were so textually rich., I used NVivo 10 to conduct textual analysis. The query function within NVivo was used to identify key word frequency as recorded in the descriptive notes from the observations, reflective notes from the observations, and the interview transcripts. Word frequency, from both observations and interviews, indicated key terms used in both descriptive and reflective notes and transcribed interviews. Noting technology, uses and skills as the top three terms indicated the trends for subsequent interviews and observations.

The last key theme that emerged from the reflective notes focused more on the pedagogical uses of technology. This theme included discussions on acceptable uses of

technology, responsible uses of technology and digital citizenship. There was a sub theme that addressed the role of technology to improve learning, the need for a media-centric teaching and learning environment, and identifying the benefits of technology.

While the word frequency table presented a different listing, the terms technology, class, students, and skills were part of the top 25 word listing. These terms, compared with the descriptive and reflective notes from the observation, confirm the importance and relevance of key trends and themes.

Interviews conducted with participants would confirm that faculty are seeking improvement, whether individually, or with others. Participant 15: "Well, I'm always searching for a technique to improve. What's going to make it stick? Is it, again, is it digital format, is it mandatory note taking? I'm open to any suggestion from any colleague in this school to help me with that riddle." Participant 34: "Well, I think always sharing ideas with one another. What are you doing? Maybe apply that to our area, maybe you can't, but listening to the ideas of others is not going to hurt." These participants reinforce the idea that collaboration can be a key to improvement.

Opportunities for collaboration help individual faculty members improve their instruction, and help improve student learning. Participant 11: "Just to have some allotted time to reflect and make myself more aware of what I am doing with technology" is important as well. Working with others, and having time for personal reflection are both parts to improve and change teaching.

Evidence of Trustworthiness

Internal validity was established through triangulation with individual interviews, observations, and debriefing participants. Overall trustworthiness was affirmed through reviewing descriptive and reflective observation notes, reviewing transcripts, and reviewing interview transcripts and notes. Participants reviewed the transcribed interviews for accuracy.

Trends and themes, identified through descriptive and reflective observation notes, were identified in interviews as well. These themes, as noted in word frequency tables, were evident as well in interviews.

Research Results

After conducting the observations reviewing the descriptive and reflective notes for all observations provided insight into trends and themes. While the individual observations provided and captured that moment in time, collectively it was more evident of the trends. Unintentional finds from the observations came from the my observing, recording and seeking clarification. While the observations were conducted in a smart classroom complete with multimedia computer, document camera, interactive graphics tablet, projector and multiple white erase boards, participants chose to discuss their perceptions of technology. Setting at a table, the discussions revealed the degree of interest in technology, the search for the right technology, methods to use technology, and discussions on learning styles, the lack of soft skills, and competing technologies in the classroom.

Research Themes and Trends

The observation protocols revealed three general themes: soft skills, the uses and impact of technology, and pedagogical focus for technology. Using soft skills mentioned in each of the observations, participants identified the need for problem solving skills, critical thinking skills, time management skills, and organizational skills. These terms from both the descriptive and reflective notes were used to identify and validate or confirm key words from the interview transcripts. Participant 15, commenting on the soft skills indicated that "They [students] don't go back and review that or put it [notes] in an organized format where they can find it again." Participant 15 later indicated that "While they [students] can record information quickly [via smart phones] they have no skill to organize it, categorize it, so that they can refer back to it."

The uses of technology included discussions focused on a balanced use of technology, concerns that technology could be a hindrance for some, and discussions on learning from each other. Participant 34: "Yeah, you can't use the technology as a crutch. It's got to be something that helps you get to the next level, not hold you up so you can do the basic stuff." The adoption and integration of technology must be carefully and intentionally planned to improve student learning and teaching. Participant 15: "Have I really discovered the best way to deliver the message? I'm still searching for the best way to deliver the message to get the most attention back from the student."

The role of technology based on Participant 15 and 34 would be to improve learning and engage students. Whatever technology does not improve learning should not be used to teach. Whatever technology does not engage students will be distracting and

may hinder learning. Technology should complement teaching, not be in conflict with teaching and learning. Participant 11 noted: "[I need to make] sure the student is able to focus on the task at hand, and not be distracted by all of the other things that could be going on with the technology simultaneously." Using technology, or more specifically choosing to use technology should be a choice that is made to positively impact teaching and learning. I believe that the participants would use technology, but the specific methods, length, and variety of use would be based non the curricular moment, and the instructional needs at that particular moment. Participant 10 echoed the sentiment "I think it's important to use technology from the very first class these students have here. I think they become accustomed to [technology]. They start to expect things." If technology is to be used, even within a limited context, it needs to be used to support the instructor and help the student learn. Technology should be used with some deliberate plan, and not just in a happenstance method.

Participant 11 took a more reflective stance and commented about the need to improve existing technology. Participant 11: "I went back to the classroom and started thinking about the different tools that may be out there that I can use for the students and how the existing tools that I have could be improved." Participant 15: "There's a certain point where it [technology] helps and there's a certain point where it's a hindrance." Contextual uses of technology are also important, whether it is the use or non-use, improvement or acceptance of existing technology.

Themes and Trends Refined

The insight provided by the observations reflects the practices, problems and perceptions of the participants when faced with technology integration and technology adoption issues and concerns. After the observation notes were reviewed, broad themes emerged: namely soft skills, use and impact of technology, and a pedagogical focus for technology uses.

The interviews confirmed the themes and trends identified through the observations. As each interview was conducted and transcribed the themes and trends from the observations were presented through rich descriptive dialogue. The participants spoke of their aspirations, their frustrations and their realities when confronted with technology in the classroom.

The results indicated that faculty do value the use of technology in the classroom. Their personal uses of technology are based in part on the technological level and competency of their students. While their uses of technology are varied, they agree that there is a role for technology in the classroom. The role of collaboration and sharing between participants is important to learn from each other.

Summary

A learning community is, for some, a term that has little or no meaning. These individuals that participated in the research have not sought professional development in pedagogical aspects of teaching and learning. They have not sought professional development on improving teaching practices directly, they participate in discussions that can be used to improve teaching indirectly. Through sharing of best practices, discussing

what happens in their classroom, they become better teachers collectively and individually. They may have participated in discipline specific opportunities, but not many opportunities to broaden teaching abilities. They have experience in their discipline and can share that experience with students.

I felt that Participant 11 identified the real need for professional development. Participant 11 nicely stated the role of the learning community:

> We are so busy day to day that often we don't step back and take a look at what we are doing in order to facilitate student success. This gives me the opportunity. It's very rare that I have a full hour to just sit, discuss, think and be creative and assess what I'm doing in the classroom. I think that's the greatest benefit. Having allotted time to reflect and make myself more aware of what I am doing with technology in the classroom.

The participants enjoyed the opportunity presented to them for personal and professional growth. Although the observation and interview sessions were schedule for an hour in length, the conversation and dialogue determined the true length. Finding time where they could discuss and learn from one another was, as I believe, priceless.

Reviewing the first research question, "How do community college faculty communities of practice impact technology integration?" participants provided a wide range of responses that address the question. The research participants agreed that working together, in a collaborative environment, provides a wider range of opportunities to learn from each other, identify best practices, and discuss pedagogical uses for technology in their respective discipline. Being able to simply share and discuss what

works and what doesn't work was a theme focused on the role of the community of practice. The participants also indicated that there is a wide range of soft skills that are not, at present, adequately addressed by any form of classroom or instructional technology.

Participant responses to the second research question "How do community college faculty communities of practice impact technology adoption?" proved to be tied to the personal perceptions of the role of technology. Participants who were active technology users were more likely to adopt new or different technologies in their classrooms. One theme that was evident was the role of technology adoption to focus on soft skills, such as problem solving, critical thinking, and even time management.

The results indicate the need for successful technology integration that both improves soft skills and improves teaching and learning efficiencies. While the direct result of technology, as noted by the participants, focuses more on teaching efficiencies, it is only through direct and intentional uses of technology that learning can be improved.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this research was to describe and discover the impact and effect of technology-based faculty learning communities on student engagement and learning. This inquiry was crafted as a case study of a single faculty learning community composed of four faculty members representing a variety of academic disciplines. The faculty learning community was selected from first and second-year faculty members at the institution who responded to an email solicitation. The participants were selected to provide a cross-disciplinary community of 4 participants.

The critical questions that guided the study are:

Critical question 1: How do community college faculty communities of practice impact technology integration?

In this case, the community college faculty communities of practice shared best practices. The community members were seeking different ways to integrate technology into their classroom. They focused more on describing classroom situations and identifying different technologies that would have a greater impact on student learning. Participant 34 stated that “Yeah, you can’t use the technology as a crutch. It’s got to be something that helps you get to the next level, not hold you up so you can do the basic stuff.” Through the discussion sessions, community members noted that they were seeking how to use technology, specifically visuals, to improve teaching and learning. They were also seeking ways to increase technology literacy for their students. Participant 34 further stated that “I feel like there’s an attitude that the technology that we

are using so frequently is almost getting in the way." Community members should use technology to compliment both teaching and different learning styles.

Technology has to be integrated cautiously so that it compliments student learning, rather than competes with learning. Participant 10 stated that "I think it's important to use technology from the very first class these students have here." There is an expectation from both students and faculty that technology is a natural part of the classroom, and should be used in the classroom. As students bring more technology to the classroom, faculty are faced with the choice of integrating the technology into teaching or severely limiting technology use. Students expect to see technology used in the classroom and expect to see contemporary technology used. Faculty will seek ways to integrate technology that engages students and makes learning enjoyable for the student.

Participant 11 stated, "Educators need to quickly try to catch up because as most people understand, technology is constantly changing and if our educators don't make a concerted effort to try to keep up … soon the student will greatly surpass the educator in terms of technology." It becomes more important to stay abreast of current technologies for the faculty member. Students are much more comfortable with a wider range of technologies and it is the responsibility of the faculty member to be as technologically current as possible.

Critical question 2: How do community college faculty communities of practice impact technology adoption?

Through the interviews, it became evident that there is a need for some standard classroom technology available for faculty members to use. Standard classroom

technology would, according to the community members, be more likely to be used by more faculty than would a specialized classroom technology package. For many of the community members, there must be methods to adopt and adapt instruction to available technology. Participant 15 remarked "Have I really discovered the best way to deliver the message? I'm still searching for the best way to deliver the message to get the most attention back from the student." They identified the need for a standard technological package for instruction, and felt that it was essential to use technology to teach. Ideally each room should have similar technology available for instructional use.

Participant 15 stated that "I've just decided to go with the flow and get more tech savvy and see where that takes me. And so far the results have been better going with the technology as opposed to fighting it." Finding ways to adopt technology to the classroom can provide the greatest impact on learning.

The study sub-questions are more topical, and provided a framework for the case analysis.

Subquestion 1: How would the technology-based faculty learning communities be described?

Generally speaking, a technology-based faculty learning community is a group of faculty, cross-disciplinary, who are familiar with and have some degree of competency and proficiency using classroom technology. The community members are all seeking best practices to use technology that (1) engages students, (2) retains students, and (3) enriches learning. In this research, the technology-based faculty learning community was first and second-year faculty members, representing four different academic programs or

departments. The members sought ways to identify and share best practices for using technology that (1) helped students learn, (2) engaged students in the classroom, and (3) improved teaching variety and efficiency.

Subquestion 2: What impact do communities of practice have on student engagement? How do the communities of practice help in student retention?

As the community members shared best practices and had opportunities to discuss their practices their focus was engaging students. Learning from one another gave them opportunities to strengthen their teaching practices and engage students, and through successful experiences in the classroom retain students through to graduation.

Subquestion 3: What impact do communities of practice have on improving student learning?

The perception of the community members indicated that their student's learning has increased, or at least improved due to the increased use and availability of technology for both student and faculty member. Without examining grades both in the course, and over the course of several semesters or courses, it is difficult to determine the significance of the impact of learning communities on student learning. Anecdotally, faculty members indicate that their teaching had improved and that improvement would improve student learning.

The results indicated that faculty do value the use of technology in the classroom. Their personal uses of technology are based in part on the technological level and competency of their students. While their uses of technology are varied, they agree that

there is a role for technology in the classroom. The role of collaboration and sharing between participants is important to learn from each other.

Interpretation of the Findings

Findings indicate that the informal faculty learning community identified several key themes: first, that students' self perception about their soft skills may be influenced by their relative ease of using technology; second, that the uses of technology in a classroom are highly influenced by the past experience and present comfort with technology on the part of the faculty member; and third, as the focus to use more technology in the classroom increases, faculty must find ways to use technology with a pedagogical focus.

The first finding was that student's self-perception of their soft skills is influenced by their particular use of technology. Participant 15 noted "While they [students] can record information quickly [via smart phones] they have no skill to organize it, categorize it, so they can refer back to it." The perceived level of competency indicates that the students are able and capable of using technology. However, they are not able to use the technology in an efficient manner to improve their learning.

Secondly, that faculty will use technology if they have had a positive experience in using technology. Participant 10 stated that "I think it's important to use technology from the very first class … they [students] have become accustomed to [technology]." With the increased expectations to use technology more and more faculty are finding ways to integrate technology into their teaching and student learning.

Finally, it is even more important to use technology within the pedagogical structure of teaching. Participant 34 stated that "Yeah, you can't use the technology as a crutch. It's got to be something that helps you get to the next level, not hold you up." It is important to find ways to use technology that improve teaching and improve learning. If technology is used just for the sake of expediency, the impact on improved teaching and learning will not be positive.

These findings are consistent with Mars and Ginter's (2007) notion that individual proficiency can be improved, but the ability to share and collaborate does not exist outside of a learning community. Participant 15 noted that "Well, I'm always searching for a technique to improve …. I'm open to any suggestion from any colleague in this school to help me with that riddle." By participating as a member of a learning community as noted by Murray (2002), the research participants were provided opportunities for collaboration. Some opportunities were a part of the research. It is unknown whether or not the participants collaborated outside of the research. The research participants were able to, as noted by Allan and Lewis (2006), become more confident in their teaching. There was no data collected that would determine the level of confidence. Anecdotally, the participants self-reported their confidence in teaching abilities increased. Participant 11 shared that "I went back to the classroom and started thinking about the different tools that may be out there that I can use for the students."

The findings also support the conceptual framework of the community of practice as identified by Wenger, McDermott and Snyder (2002). The research participants shared a concern about student learning that spanned the academic disciplines. Students,

regardless of their academic major of choice, exhibit shared perceptions about their technological proficiency. Faculty, in this instance, research participants, were able to find and identify shared concerns about students, technology and methods to use technology that positively improve student learning.

Limitations of the Study

Limitations of the study (Creswell, 2003):

- Since this is a unique case, the findings of this study may not be generalized to other cases.
- The ideal size for the learning community was identified at 10 members. There were 4 participants. Similar to the limitation of a unique case, the small number of participants limits the potential for generalizing to a larger population.
- Curriculum revisions to meet state requirements may have limited participaton.

As the influence of outside factors continues, it is difficult to determine the impact that curriculum reforms had on faculty participants and their levels of participation in this research. As community colleges are aware, being able to find true peer institutions for benchmarking purposes poses yet another limitation.

Recommendations

The findings from this study can be used to answer the research question: How do community college faculty communities of practice impact technology integration? Faculty members will identify pedagogical uses of technology that improve teaching and

learning. Through observation of students and collaborating with the community of practice faculty members will be presented with alternative ways to integrate technology. Faculty members should be provided opportunities to participate in learning communities. Collaborating with other faculty members provides each with different perspectives on teaching and learning. Through the collaboration, technology integration becomes focused on improving teaching and learning.

Conducting similar research at peer level institutions could provide insight into issues and concerns that extend far beyond the boundaries of one single institution. While the perspectives and findings from a single institution provide an initial snapshot of research, extending this geographically could help identify larger and regional or national trends. Replicating the research will provide a greater range of best practices for both technology integration and technology adoption.

Conducting this research for a longer period of time would reinforce the findings, or provide a new direction for future research. While this research provided a glimpse into faculty perceptions about technology, a longer period of time would strengthen these findings. The findings can and should be used to identify best practices and these practices should be incorporated into existing classroom practices.

The findings from this research also identify best practices for successful technology integration. First, the community of practice provides opportunities to discuss technology and student responses to the specific technology. Second, the community of practice provides opportunities for positive experiences with technology either through

direct use or indirect discussion. Finally, the structure of the community of practice can promote and encourage individual as well as collective professional development.

Implications

The implications for this study are contributions to positive social change by providing a model of best practices to improve and enhance learning in community college settings. The best practices provide faculty guidelines for selecting, integrating and using technology in the classroom. Participant 11 stated that "Just to have some allotted time to reflect and make myself more aware of what I am doing with technology." It is the time and opportunity to take time that will help faculty identify best practices. Faculty members and academic departments could integrate these best practices into orientation sessions for new faculty members.

Classroom practices can be improved through intentional and deliberate uses of technology. Identifying the most appropriate technology is best accomplished by the classroom faculty member and their peers. Participant 34 stated "Well, I think always sharing ideas with one another. What are you doing? Maybe apply that to our area, maybe you can't, but listening to the ideas of others is not going to hurt." Understanding and being aware of the wide range of both classroom technology, personal technology and social media may improve faculty technological competence directly, and student learning indirectly.

Conclusion

The strengths of the research are evident in the responses to the research questions. The participants were sincere in their perceived uses of technology and how

the technology could impact student engagement and student learning. The responses indicate the need for further inquiry to determine how technology impacts and influences soft skills. The research demonstrated that faculty will often identify methods to improve some aspect of teaching. Professionally, the faculty members will seek out counsel from their peers within the department, colleagues from the institution, and individuals or mentors. I believe that a learning community can provide the greatest positive impact on improving student learning and teaching.

Learning from others and learning with others helps build a broad base of best practices. A faculty learning community provides the setting and the purpose for faculty to learn and share what works, and what doesn't work as well. Adding technology into faculty learning communities provides opportunities for improving student learning.

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Appendix A: Observation Protocol

	Descriptive Notes	Reflective Notes
Describe the physical setting and configuration of the setting.		
Describe the activities of the group including one-to-one activities between members of the learning community		
Describe the role of the researcher during the observation.		

Appendix B: Interview Protocol

	Response	Follow up questions
How does your participation in the faculty learning community improve or change your teaching? (Caffarella and Zinn, 1999).		
How does your participation in the faculty learning community change your perceptions about technology? (Kopcha, 2010).		
How does your participation in the faculty learning community change your perception of student learning? (Grant, 2005).		

What instructional technology do you regularly use? (Brinkerhoff, 2006).		
How is the use of instructional technology supported by the institution? (Mars & Ginter, 2007).		

Curriculum Vitae

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Education:

Doctor of Philosophy – Educational Technology — Expected 2014
Walden University, Minneapolis, Minnesota

Master of Education – Educational Technology — 2002
Texas A & M University, College Station, Texas

Bachelor of Arts – English — 1982
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Relevant Professional Experience:

Dean of Learning Resources and Technology — 2011-Present
Vincennes University, Vincennes, Indiana

Provide overall supervision for approximately twenty full-time and six part-time staff who comprise the Shake Learning Resources Center, the Shake Library, the Lewis Historical Library and Archives, Media Services, Web support Services, the Assessment Center and the Center for Teaching and Learning. Provide strategic guidance for Blackboard. Develop and administer the LRC budget of more than $2,000,000.00. Coordinates strategic planning and assessment planning for the LRC. Works with the Provost, Instructional Deans, Chief Information Officer to provide leadership for the development, implementation, and support for classroom and educational technology. Chair of University Professional Development Planning Committee, Co-chair for Strategic Planning Technology Committee, Member and Treasurer for State Academic Libraries Consortium.

Director of the Center for Teaching and Learning — 2006-2011
Vincennes University, Vincennes, Indiana

Provided general direction to the activities of the Center for Teaching and Learning. Created a supportive and engaging environment for consulting faculty. Conducted the

Teaching Transformation Academy, an intensive semester-long professional development opportunity for faculty. Provided leadership for the development, maintenance and use of advanced instructional technology. Served on the institutional AQIP Committee, Institutional Technology Committee and Institutional Assessment Committee.

Instructional Design Specialist 2002-2006
Indiana State University, Terre Haute, Indiana

Provided expert advise and instructional design services and consultation to faculty. Assisted in the development of distance education delivered courses. Coordinated service requests between technology support and faculty. Facilitated and modeled appropriate and effective uses of technology in teaching and learning.

Instructional Design Specialist 1999-2002
Texas Engineering Extension Service, College Station, Texas

Developed training modules for classroom and distance delivery modes. Developed learner appropriate interactivities and assessments. Worked with clients to ensure end product met requirements. Maintained and developed CEU related documentation.

Teaching Experience:

English Composition I, ENGL 101-033 Fall Semester 2013

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Publications:

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Professional Presentations and Papers:

Peter, D. (2013). *Strategic assessment, academic libraries, and you: Linking assessment to results to planning*. An invited paper presentation at the Indiana Library Federation 2013 Annual Conference, Indianapolis, Indiana. October 2013.

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Peter, D. (2011*). Professional development: Innovation and engagement using the iPhone and iPad*. A paper presentation at the 2011 STEMTech Conference, League for Innovation in the Community College, Indianapolis, Indiana. October 2011.

Peter, D. (2009). *To tweet or teach, or tweet and teach*. A paper presentation at the Conference on Information Technology 2009, League for Innovation in the Community College, Detroit, Michigan. October 2009.

Slayton, R., & Peter, D. (2009). *Don't tell me how to teach, turn on the computer*. A paper presentation at the Conference on Information Technology 2009, League for Innovation in the Community College, Detroit, Michigan. October 2009.

Peter, D. (2008). *Frontline faculty development technology tools*. A paper presentation at the Conference on Information Technology 2008, League for Innovation in the Community College, Salt Lake City, Utah. October 2008.

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