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Leadership Factors Influencing Transition and Implementation of a Learning Management System in a Rural Community College Context

Mitchell, Michelle Tammy

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Leadership Factors Influencing Transition and Implementation of a Learning Management
System in a Rural Community College Context

by

Michelle Tammy Mitchell

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Abstract

The purpose of this study was to examine the leadership practices involved in the transition to a new Learning Management System (LMS) at a rural community college in western Canada. This study was important to inform future studies on technology transition, particularly in the rural community college context.

The main research question explored in the study was how do leaders in a rural community college in western Canada understand practices of leadership when implementing LMSs? A qualitative case study was used that included data from questionnaires and a review of institutional documents. Thematic analysis was used to analyze the data. The data supported the concept that the leaders involved in a technology implementation decision making committee need to have understanding of leadership and technology adoption practices. The results highlighted the importance of professional learning for leaders who are involved in making decisions regarding educational technology. The data helped to inform a conceptual framework that supports leaders' understanding of the practices of leadership when implementing a LMS in a rural community college in western Canada.

Keywords: Learning Management System, technology implementation, leadership

DEDICATION

This work is dedicated to my parents, who taught me the value of hard work and persistence

My mother and father in-law, who showed me unconditional love and are incredibly missed

My husband, my best friend and biggest supporter, who makes me laugh every day

My two daughters, who are the centre of my universe

My God, who has once again granted the desire of my heart.

CHAPTER ONE: INTRODUCTION

Online education represents an area of great potential for post-secondary education to globally to meet the demands of students and employers (Nellis & Slattery, 2012), and has undoubtedly changed the landscape of post-secondary education. Due to the diversity of the student body in post-secondary education today, pressure is placed on academic institutions to implement new systems for “academic support and innovative approaches to quality” (Altbach et al., 2009, p. 10). Students enrolling in online programming demand a Learning Management System (LMS) that has the capabilities to be accessible, interactive, and engaging. Institutions of higher learning have entered into a period of significant cutbacks, and a time of crisis (Denman, 2005; Doyle & Delaney, 2010).

My study examined how leaders in a rural community college in western Canada understood the practices of leadership when implementing a LMS. From my review of the literature, research in the field of leadership in relation to educational technology transition is limited. The literature is primarily within the university context and includes very little research from the community college sector. The study explored the nature and type of leadership involved in the decision-making and implementation of a new LMS at a community college. Specifically, the study focused on various leaders and the leadership approaches used to investigate what worked well, what were the challenges, and factors that enabled and/or hindered the leadership process when engaged in the adoption of a technology. Although the study is limited to one rural community college, it may be useful for other similar institutions when transitioning to the adoption of a new LMS, as well as institutions making other educational technology transitions.

Statement of the Problem

The most influential leaders in post-secondary education are rarely educational technologists (Kowch, 2016; Nworie & McGriff, 2001). Educational technologists are rarely found in senior leadership, and seldom do senior leaders have educational technology backgrounds (Kowch, 2016). Organizational leaders may not understand the impact of educational technology on their organization (Kowch, 2016). Limited or lack of understanding with regards to educational technology may impact the effectiveness of the decision. In the context of the study at a community college, the Advisory Committee on Educational Technology (ACET) was comprised of middle managers who made recommendations to the Operations Committee, which was comprised of members of Senior Leadership. The senior leadership team made the final decision around technology adoption, in this case the selection of the LMS.

The community college in the study offered 90% of its courses online using a combination of the Learning Management System, Moodle™, and the synchronous platform, Collaborate Ultra™. While Moodle™ had been used for ten years, and faculty were comfortable with it, the transition to Collaborate Ultra™ occurred within the current academic year, and faculty had indicated it did not meet their instructional needs. At the time of the study, faculty members were not open to the adoption and transition to a new LMS.

Research Problem

The rise of technology is changing how faculty teach. Faculty must learn new technologies at a rapid rate, yet they remain reluctant to adopt these new technologies, citing lack of skills, resources, equipment, and time (Baldwin, 2018; Ruiz et al., 2006). The reluctance of faculty to adopt new technology is important as “the use of online resources as a primary source

of learning or in conjunction with traditional education methods has been shown to enhance student learning and encourage self-directed learning” (Kowalczyk & Copley, 2013, p. 28). A deeper understanding of the leadership necessary to successfully adopt and support the transition of a LMS in a rural community college in a climate where faculty were resistant to change was the research problem examined in the study.

Research Purpose

Faculty benefit from using a LMS as it offers flexibility, ease of access, and supports student engagement with course content (Bousbahi & Alrazgan, 2015). According to Delaney and D’Agostino (2015), “technology change can bring increased efficiency, improved quality, assist in bringing products to market quicker and expand the skill set of employees” (p. 3). While research on LMSs is vast, little is known about the leadership involved in the transition process to a LMS within the community college context. Therefore, the purpose of the study was to explore the relationship with leaders and LMS implementation.

For the purposes of my study, the college leaders were middle managers, who were individuals in positions of formal leadership, such as program deans and chairs, as well as coordinators and instructional designers who were considered to be in positions of informal leadership within the institution being studied.

Research Questions

The following question guided my inquiry:

- How do leaders in a rural community college in western Canada understand practices of leadership when implementing LMSs?

To help inform the question, the following sub-questions were used in the research:

- What conditions support and/or hinder the decision-making process for the selection and implementation of a Learning Management System in a community college?
- What role did leadership play in supporting technology skill development as part of LMS implementation?
- What communication strategies were used to support faculty with the LMS implementation plan?

Context of the Study

The purpose of the study was to explore the type of leadership involved in the adoption and implementation of a LMS within the community college sector in a rural context in western Canada. Located in 19 northern communities, the institution's 23 campuses serve a population of approximately 45,000 people, covering 192,000 square kilometers or twenty-five percent of the landmass of the province. The college offers online programming in basic education levels I to III (equivalent to grades 4 to 9), post-secondary certificate and diploma programs, undergraduate programming, trades and resource programming, and continuing education and corporate training.

The demographic of the institution is quite diverse and differs from many other post-secondary institutions in the province. Ninety percent of programming is offered online, using Moodle™ as the LMS for the past ten years. The college's mission includes a focus on providing community-based education in remote Indigenous reserves and Metis settlements. While most post-secondary institutions are established in larger urban centres where students come to a campus in pursuit of post-secondary education, students who attend this rural community college are able to remain within their home communities to pursue post-secondary education. The

institution being studied in my research believes that students who live and study in the north will remain in the north. Studying in their northern context will improve the wellbeing of families and positively impact Indigenous communities in the region.

Seventy percent of all students attend classes from one of the 23 campuses. These students log into their online classes with the support of campus staff and join with many of their peers who are at alternate campuses, or homebased within the region or elsewhere in the province. As the level of education is expansive, ranging from a grade four equivalent to second-year university, it is necessary that the LMS be robust, yet user friendly to ensure all students within the College are able to interact within the environment.

Instructors are located in campuses throughout the service region. However, some instructors are home-based throughout the province, and there is a small percentage who work outside the province. As the remote campuses generally have a staff of two to three faculty who are in more remote locations report feeling isolated. It is increasingly difficult to recruit and retain qualified faculty in the more remote locations, and there tends to be a large turnover of faculty particularly in departments such as health and trades. Because faculty in these departments typically do not come from teaching backgrounds, it is imperative that the College implement strategies to support teaching excellence across the institution, and particularly to those faculty working in physical isolation. Faculty working in remote campuses do not have physical access to support from the Centre for Teaching and Learning, having to connect to supports remotely. Therefore, faculty must be able to make the adoption of educational technology fairly quickly and easily, and it must function well so faculty will not need to access supports regularly.

In the college, the Advisory Committee on Educational Technologies (ACET) meets monthly to discuss the use of educational technologies within the institution, and makes recommendations to senior leadership regarding technology implementation and innovation. It includes members from across all departments, including academics, the Centre for Teaching and Learning, and Information Technology. Committee members are expected to represent their departments, acting as a liaison between ACET and their respective teams. The committee reports directly to the Vice President Academic.

Rationale for the Study

The study explored the type of leadership involved in the decision-making process around the selection and implementation of a LMS in one community college. There were three important reasons for the study. First, historically, faculty report having little influence over the technology decision-making and implementation process, yet they are the primary users. By raising awareness around the connection between leadership and technology selection and implementation, this study may assist this community college and other similar institutions with future change management initiatives as it relates to technology implementation.

Second, Kerfoot (2006) explained people aspire to leaders who speak to their hearts and inspire them to do more and to be more. Leading faculty “involves the use of power, interpersonal influence and direction setting in an effort to influence people to follow, join forces and work towards organizational goals” (de Boer & Goedegebuure, 2009; Smith, 1997). Most graduates of educational technology programs are employed in positions directly related to the role, such as instructional designers and technical support specialists, and are often not in positions of formal leadership (Kowch, 2016; Nworie & McGriff, 2001). As this study explored the leadership factors involved in technology transition and implementation, insight was

provided into the specific leadership factors required to inspire faculty in future technology initiatives within this particular community college context. As much of the research (Bousbahi & Alrazgan, 2015; de Boer & Goedegeburre, 2009; Inman, 2009) on leadership in relation to educational technology is from the university context, the study increased understanding of the relationship with college leaders and LMS implementation in the community college sector.

Third, leadership development programs are offered under the assumption that if people are shown what good leadership is, they will be able to do it. However, there is a discrepancy between what leaders know in theory, and what they are able to do in practice (Inman, 2009; Petrie, 2014). Research by Kowch (2016) indicated a knowledge gap between educational technology and educational leadership. Therefore, many educational technologists do not understand how to be good leaders, and vice versa. There is a need for educational technology leaders to work closely with faculty to support innovation, and lead technology change in post-secondary education (Nworie & McGriff, 2001). As the study highlighted the type of leadership necessary for technology adoption and implementation, educational technologists in the community college sector may aspire to leadership positions and engage in leadership education. As my study was limited to a specific community college context, and may not be generalizable to the larger college context or the broader post-secondary sector, other educational technology leaders may be inspired to research this topic within their institutions adding to the knowledge base surrounding leadership and technology implementation.

Significance of the Study

My study explored the leadership qualities for successful technology implementation in a rural post-secondary institution. Online education has been accepted by community colleges to meet the needs of a diverse population and is expected to grow in the coming years as faculty

and students alike become more accepting of it (Perry & Pilati, 2011). The online classroom differs from the traditional classroom in that it requires specific and measurable strategies and techniques to support student success in order to avoid isolation, more challenges, and higher attrition rates (Portugal, 2018). Students enrolling in online programs at the college are 26 years old on average, and enroll as a means to access education in their home communities, while negotiating employment and family commitments. In the case of this particular college, students throughout the 192,000 square kilometers service region are able to attend classes online, while benefiting from the support of a community campus or from within their home environments. Thus, a user-friendly, intuitive design, and good technological support must be considered to support student success (Pollack & Wilson, 2002). A robust LMS is needed to support the nature and quality of online learning within the context of the institution in the study. Holmes and Prieto-Rodriguez (2018) discovered an effective LMS supports active engagement, enhances the learning process, rather than simply stores and transfers information, and is viewed positively by both staff and students when used effectively. Therefore, leadership that supports faculty involvement in the process is beneficial to successful LMS implementation.

Definitions of Key Terms

Advisory Committee on Educational Technology (ACET) refers to a committee, comprised of leaders that makes recommendations to Senior Leadership around technology innovation.

Asynchronous teaching is the delivery of online instruction using a Learning Management System such that the student meets the course outcomes on their own schedule. It allows for collaborative learning experiences, critical discourse, and reflective space (Garrison, 2003).

Blended Learning refers to a combination of face to face and web-based instruction, that includes a mix of “theories, methods and technologies to optimize learning in a given context” (Cronje, 2020).

Community College is an institution that provides programs such as Academic Upgrading, certificate, and diploma programs. Community Colleges may also offer undergraduate programs in collaboration with a university, as well as trades or technical programs.

Distance Education refers to an educational situation where there are no classes held on campus, and all instruction is conducted by distance (Canadian Digital Learning Research Association, 2018).

Educational Technology is defined as “the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources” (Januszewski & Molenda, 2007, p. 1).

Formal Leaders are individuals in positions of supervisory authority within post-secondary education, for example, senior leaders, such as Vice President Academics and Deans, as well as middle levels of management, such as program chairs.

Informal Leaders are “opinion” leaders, or those individuals who assist formal leaders in decision-making processes, but who have no supervisory authority within the organization, such as instructional faculty and instructional designers (Ng’ambi & Bozalek, 2013, p. 941).

Leadership refers to “the use of power, interpersonal influence and direction setting in an effort to influence people to follow, join forces and work towards organizational goals” (de Boer & Goedegebuure, 2009).

Learning Management Systems (LMSs) are “web-based platforms used for enhancing and supporting classroom teaching or delivering online instruction” (Sonmez & Koc, 2018, p. 101),

that enables communication, the dissemination of resources, and the implementation of learning activities...to a group of learners...accessible by any type of technological device connected to the Internet” (Stockless, 2018, p. 1106).

Online Learning or eLearning is teaching and learning that occurs in a technology mediated environment, using electronic communication (Ansong et al., 2017).

Post-Secondary Education is education enrolled in after high school in a college or university setting.

Quality Assurance refers to the importance of providing faculty and student support mechanisms, regular evaluation processes, and interaction with stakeholders to ensure ongoing improvement in online course delivery (Vlachopoulos, 2016).

Synchronous Technology refers to technology platforms that enables real time engagement in a virtual environment.

Chapter Summary

The study explored the types of leadership involved in a technology transition to a new LMS in a rural community college in western Canada. A review of relevant literature established a foundation for the study, as well as identified the current gaps that were addressed in the conceptual framework that guided my study are in chapter two. The third chapter of this dissertation includes a careful examination of the research design that outlined how research was conducted in my quest to seek answers to my research questions. This included an explanation of the chosen methodology based on the problem, purpose, and context of the study, as well as the sampling, data collection and analysis methods used to position my study. Chapter four presents the analysis of the findings of the data. The fifth chapter discusses the findings of my study, along with my assumptions in relation to the research, and presents a revised conceptual

framework that better represents the LMS decision making process as captured by the data. The final chapter of the dissertation provides a summary of my study on the leadership factors influencing LMS transition and implementation in a rural community college context, and provides a description of the successes and challenges I experienced while conducting the study. The chapter concludes with implications for practice and directions for future research.

CHAPTER TWO: LITERATURE REVIEW

The literature review helped to position my study in online education and leadership as it pertained to my research question. The chapter contains six sections. First, the literature review outlined the trends in post-secondary education that provided context in relation to my study on the leadership factors that influence Learning Management System (LMS) transition and implementation. Second, the literature review explored the changing student demographic in post-secondary education. Third, LMS use in post-secondary education was examined in relation to my study. Fourth, leading educational change and technology adaptation was explored. Fifth, leading change management was discussed. Sixth, leadership as part of change management was described. This section also concludes with the positioning of my study within the literature, and includes the conceptual framework that guided the study.

Trends in Post-Secondary Education

With rising tuition costs and student debt, and employers questioning the readiness of graduates for employment, institutions of post-secondary education are under increased pressure to meet the needs of today's learner (Bailey et al., 2018). For the past couple of decades, it is believed online education will make higher education possible for those "whose geographical constraints, financial limitations, and work and family obligations make it difficult for them to participate in brick and mortar classrooms" (Protopsaltis & Baum, 2019, p. 1). Change is a word used with increasing frequency to describe the state of post-secondary education today and is "as inevitable as the passage of time" (Altbach et al., 2009, p. 165). As cuts to post-secondary education occur, institutions of higher learning must seek ways to be innovative in how they deliver education, with a shift in the duties of post-secondary education leaders to become entrepreneurs. Post-secondary institutions have to respond to rapid change due to government

pressures to raise their economic profile and to be more politically accountable (Denman, 2005; Khan, 2017). During times of economic prosperity, adequate funding is provided to post-secondary education. However, when there is economic downturn, post-secondary education is often targeted for larger budget cuts (Doyle & Delaney, 2010). Colleges and universities can no longer rely on government as a primary source of funding, but rather must become entrepreneurial and seek alternative means of financial sustainability. Due to government funding cuts to post-secondary education, there is an increase in financial burden for students, thereby posing a barrier for students in terms of affordability, resulting in high amounts of debt for those who pursue post-secondary education (Dixon & Scott, 2003).

Since the inception of the LMS Blackboard in 1998, designed to meet the needs of a homogenous group of online students ages 18-24, there has been a significant shift in student demographics, with one-third of today's online students being over the age of 25 (Bailey et al., 2018). Globally, there is a decrease in students in the 18-24 age group as compared to the 25-50 group (Nellis & Slattery, 2012). This means institutions of higher learning will be in competition with each other to attract the reducing number of younger qualified students. According to Henderson et al. (2015), "Digital technology is now woven deeply into the fabric of university teaching and learning" (p. 308). The integration of laptops did not generate the anticipated higher order learning, but it increased student engagement as students used it to do homework, for note taking and to complete assignments (Sung et al., 2016). No longer will students log onto a LMS from a desktop computer. Today's students appreciate immediate access to an online learning platform, requiring mobile technology solutions that promote innovative teaching methods, such as cooperative learning not only "support traditional lecture-style teaching, but through

convenient information gathering and sharing, it can also promote innovative teaching methods such as cooperative and exploratory learning” (Sung et al., 2016).

The Impact of Globalization

According to Havlicek and Pelikan (2013), ongoing social changes on an international scale have resulted in the need for institutions of post-secondary education to offer new programs, modify existing programs, and change research focus. Ateyat and Gasaymeh (2015) indicated globalization has brought challenges to post-secondary education all over the world and has led colleges and universities in the western world to establish initiatives that improve and market their post-secondary education. One study by Youssef (2014) discovered an increased demand for education and an inability for governments to provide educational alternatives has led to a transformation of the post-secondary education scene towards internationalization and globalization. While the world is divided in terms of politics, economics, culture, and religion, there exists a common interest in the investment and development of education (Pang, 2013). According to Pang (2013), the impact of globalization is far reaching because it is concerned with the transfer of knowledge and innovation across borders, which has led to a paradigm shift in educational policy and administration.

Burnett and Huisman (2010) stated, “the idea that globalization in one way or another affects post-secondary education is generally accepted” (p. 117). The main benefits of globalization are: 1) Students have increased access to degree programs, 2) Institutions of post-secondary education have opportunities to exchange skills, expertise, and knowledge, and 3) Graduates, professions, and human resources are able to move across borders (Youssef, 2014). However, the connectedness of post-secondary education has also led to consequences, such as students having access to more information on where to study, which may lead to students

choosing to study internationally (Burnett & Huisman, 2010). Additionally, faculty have access to colleagues and resources around the world, leading to competition for post-secondary educational institutions from local or regional to international (Burnett & Huisman, 2010).

Coates (2008) posited the role of post-secondary education has expanded over the last several decades resulting in a need for government, university leaders, business, students, and the public to be more focused on whether students have the “capabilities required to engage productively in the global knowledge economy” (p. 2). Therefore, it is imperative that leaders within the post-secondary context ensure students receive a quality education to form a solid foundation such that graduates are able to compete internationally.

Online and Blended Learning

Post-secondary institutions that have transitioned to online learning “need to be on the forefront of the cutting edge technological and educational advances in order to remain competitive and innovative” (Raspovic et al., 2016). Leadership in post-secondary education has been increasingly scrutinized due to the increase of student numbers, changes to funding allocations, competition between institutions, and the impact of globalization (Black, 2015). As a result, colleges and universities need to find innovative ways to keep themselves relevant and competitive. One of the strategies to do this has been to adopt online learning and blended learning models, allowing institutions to take the core business of teaching and learning, and extend it beyond the traditional brick and mortar. Online and blended learning provides greater access to students, and allows for more flexible learning options. Students who are unable to leave their homes to obtain post-secondary education in urban centres have the opportunity to access degree opportunities.

Sun and Chen (2016) believed education to be transformative when information is synthesized “across subjects and experiences, critically weigh(ing) different perspectives” (p. 157). Such new approaches have been implemented in the rapid creation of online courses throughout the world (Sun & Chen, 2016). Reductions in funding to post-secondary institutions have led to rapid interest in online education, creating flexible pathways for students to access post-secondary education (Bousbahi & Alrazgan, 2015; Sun & Chen, 2016). Kanuka and Anderson (1999) claimed competition between post-secondary institutions in collaboration with increasing student expectations “is pressuring many post-secondary educational institutions to improve access by removing time, place, and situational barriers in ways that are cost effective” (p. 1). Online and blended learning occurs in many forms and is facilitated with tools that allow synchronous and asynchronous communication and collaboration (Perry & Pilati, 2011; Sonmez & Koc, 2018; Stockless, 2018). Online and blended education has been accepted by community colleges “that seek to provide educational opportunities for an extremely diverse student population” (Perry & Pilati, 2011, p. 97). The invention of the World Wide Web made online education accessible and presented a shift from traditional distance education to what we know to be online education (Harasim, 2000). In the mid-1970s, university courses were being supplemented by email and computer conferencing, and in 1984, the first online undergraduate course was offered, followed by the offering of the first graduate level course the next year (Harasim, 2000). With the rise of online educational technologies, institutions of post-secondary education promote online courses to “increase communication with students, to establish new revenue sources, and to reduce the location dependency and time constraints that are associated with traditional education” (Coskuncay & Ozkan, 2013, p. 13).

Education has evolved from a small number of students taking online courses to a large number of both undergraduate and graduate students enrolling in online programs (Bailey et al., 2018). According to the Canadian Digital Learning Research Association, in the 2016-17 academic year, seventeen percent of Canadian post-secondary students were taking at least one online course for credit, and of all credit course enrolments, about eight percent were fully online, for a total of 1.36 million online course registrations. Additionally, the average course load for students enrolled in online courses was three to four courses a year. However, course loads ranged from seven to eight courses in universities and about ten courses a year in the college setting. In a 2018 survey, the Canadian Digital Learning Research Association also discovered the number of blended courses to total more than ten percent of all course offerings in twenty two percent of all post-secondary institutions in Canada, and over eighty percent of post-secondary institutions outside of Quebec to have blended course offerings. The survey also indicated a number of institutions to be incorporating quality assurance models to support their faculty in preparing to teach blended courses.

Quality Assurance

Online education is growing rapidly and is gaining in popularity which highlights issues relevant to the quality of online higher education in comparison to traditional face to face environments (Markova, Glazkova, & Zaborova, 2016). Protopsaltis and Baum (2019) indicated stakeholders, such as faculty, academic leaders, employers and the general public believe online education to be inferior to face-to-face instruction. However, post-secondary institutions rely on technology solutions, such as Learning Management Systems and Student Information Systems, to improve the experience for students across the institution from prospective to alumni, and therefore remain competitive (Grajek et al., 2018). Institutions of higher education are

challenged with expectations from students and employers to incorporate technology skill development as part of the educational experience (Abrahams, 2010). Emerging technologies offer new ways of delivering education and are changing the way learners think and build knowledge, with technology quickly becoming integral to the teaching and learning process (Abrahams, 2010; Stodel et al., 2006). Barone (2018) asserted, “students have daily encounters with technology and innovation in many areas of their lives; in fact, their social interactions may be organized around instant messaging, blogs, and other technology-based modes of communication” (p. 3). However, many instructors lean towards traditional perspectives in that they teach how they were taught, and “plan their courses and teaching methods accordingly” (Barone, 2018, p. 3). Therefore, instructors may attempt to implement traditional teaching approaches into their online classrooms which may not lend itself well to quality online learning experiences for students.

Post-secondary education has undergone massive change over the past few decades, which has led to the establishment of new forms of regulatory control (Brennan, 2018; Misiunas & Stravinskiene, 2010). While institutions of post-secondary education have retained some of the more traditional values of autonomy and academic freedom, there now lies great external controls to ensure institutions of post-secondary education are meeting the needs of society in terms of economic and cultural benefits (Brennan, 2018). Given the expectations placed on colleges and universities, quality matters more than ever, leading to the establishment of organizations to oversee the quality of education (Brennan, 2018), which means institutions must be able to demonstrate quality (Misiunas & Stravinskiene, 2010).

While there are many different ways to teach, according to Ramsden and Martin (1996), good teachers tend to display similar characteristics. These characteristics included being

interested and knowledgeable about the subject and students, and referred to the teacher as role modelling scholarly values, committing to lifelong learning, professional and personal growth, and practicing ethical behavior. Furthermore, teaching effectiveness may be defined as how well an instructor can facilitate and support students to meet academic goals (Gorsky & Blau, 2009).

Hughes and Mighty (2010) asserted, “the effectiveness of teaching inevitably depends on its purpose and a host of interacting influences” and that too much time is spent on finding “the best method”, claiming that one approach would never meet the needs of “all topics, all subjects, all students, and for all purposes” (p.16). Blackmore (2009) presented a differing definition of quality assurance as demanding a “paper trail” so that the process of teaching is transparent and measurable, and that quality assurance is “just one policy initiative that has sought to ‘manage’ academic professionals” (p. 860). Research suggested audits of courses encroach on academic freedom and professional autonomy in an effort to manage faculty (Blackmore, 2009; Scott & Dixon, 2008). While consensus regarding a definition of quality is lacking, quality initiatives tend to be based on the premise that university teaching overall is lacking, and that external pressure is needed to bring about improvement (Crebbin, 1997). From these perspectives, quality assurance is not about ensuring students receive the optimum level of education, but rather it is a means of holding faculty accountable to those in power.

Stes et al., (2009) maintained a teacher’s approach is “determined by a teacher’s conception of teaching” (p.188), and Biggs (2001) proposed teacher perceptions change at various stages of their careers. Those teachers who adopt a teacher centered philosophy and perceive learning in terms of organizing course content and teaching methodologies, believing students learn best when content is presented, tend to design assessments that encourage students to memorize information for recall (Bousbahi & Alrazgan, 2015; Zerihun et al., 2011). In

contrast, those who adopt a ‘student centered’ orientation use a variety of assessment tools to support deeper understanding, and are referred to by students as facilitators of learning (Bousbahi & Alrazgan, 2015; Hughes & Mighty, 2010; Zerihun et al., 2011).

Student definitions of quality vary from that of teachers, and students’ perception of learning influences how they approach the learning process (Zerihun et al., 2011). Students who prefer a teacher-focused environment will appreciate an instructor who has the same philosophy, whereas learners who are engaged prefer to be in environments where they can actively participate in the learning environment. Stes et al. (2009) explained that teaching and learning in post-secondary education is perceived differently by students in different fields, and that “perceptions on studying as well as on teaching are defined by the nature of the discipline” (p. 189). Teachers belonging to the ‘hard’ disciplines, such as chemistry or medicine, tend to be less student focused in their teaching approaches than teachers belonging to the ‘soft’ disciplines such as history or education (p. 189). While outcomes from both disciplines are very similar, students in courses that are student focused report overall better experiences and higher levels of satisfaction than those in teacher centered classrooms (Hughes & Mighty, 2010). Furthermore, there is a higher level of student and instructor satisfaction in courses where student and instructor expectations align. The alignment of student and teacher experiences and understanding, along with course design, teaching methods, and assessment, lead to similar student and teacher perceptions of context, teacher approaches to teaching, ultimately leading to students meeting intended outcomes (Trigwell et al., 1999). Zerihun et al. (2011) found fifty-two percent of students define teaching as transmitting knowledge, followed by the remaining forty-eight percent defining it as facilitating learning. Students mentioned the necessity for the teacher to be punctual as being more important than knowledge of subject matter, along with “being

social and friendly, well-organised and expressive”, being a good communicator, being student focused, and providing appropriate course materials. Student focused approaches are considered good teaching and are positively associated with deep and higher order learning (Dinc, 2019; Hughes & Mighty, 2010).

A review of the literature finds the definition of quality to be complex and that there is no single accepted definition (Voss et al., 2007), as it is a concept that is largely based on intuition (Vlachopoulos, 2016). One of the challenges facing government is how to define educational quality (Weir, 2009). Monitoring quality is challenging as there are a variety of stakeholders involved (Harvey & Green, 1993; Macheridis & Paulsson, 2016). Each stakeholder has their own view on what quality education means to them. For example, academics may perceive large numbers of highly intelligent graduates as to be an indicator of quality, whereas an employer may define quality as producing a graduate that is able to adapt to the job quickly (Douglas & Douglas, 2006). On the other hand, students have an entirely different perception of quality, and may have “unrealistic expectations of the university experience” (Voss et al., 2007, p. 949). Blackmore (2009) stated, “there is an assumption that all students receive the same knowledge. Indeed, many students are resistant to particular ideas with which they feel ‘discomfort’, and vent their anger in evaluations” and “what counts as quality also differs according to cultural perceptions” (p.867). The varying definitions and perspectives on a definition of quality make it difficult to find “valid and reliable ways of measuring” educational quality (Lodge & Bosanquet, 2014, p. 4).

As the popularity of online education rises, post-secondary institutions are interested in how they can best deliver online course content to learners (Dumford & Miller, 2018). In the evaluation of quality, online education differs from traditional face to face education, thus

quality models created for more traditional forms of education cannot be applied (Marciniak, 2018), or may need to be modified.

Learning Management System Use in Post-Secondary Education

In the past few decades, teaching tools have evolved from chalk boards and overhead projectors, to Learning Management Systems (Holmes & Prieto-Rodriguez, 2018). Learning Management System (LMS) is defined as “an online learning system that enables communication, the dissemination of resources, and the implementation of learning activities with the use of educational features included in the LMS...to a group of learners...accessible by any type of technological device connected to the Internet” (Stockless, 2018, p. 1106). Raspopovic et al. (2016) described the LMS as the “front face... of the entire system and what users are able to see and interact with” (p. 125). The LMS has become a critical tool for institutions of learning (Coskuncay & Ozkan, 2013), and an impetus in online learning (Rhode et al., 2017, p. 68), incorporating tools such as blogs, wikis, chat, discussion tools to foster a constructivist approach to teaching and learning, where there is interaction between students, teachers, and content in a virtual environment (Emelyanova & Voronina, 2014; Holmes & Prieto-Rodriguez, 2018).

According to Sonmez and Koc (2018) courses delivered through the use of a LMS can increase course quality and effectiveness. The use of a LMS has become critical in the delivery of online education (Malm & DeFranco, 2021; Rhode et al., 2017), and has “become one of the most important innovations for delivering education” (Coskuncay & Ozkan, 2013, p. 13). According to Educause Centre for Analysis and Research in 2014, 99% of post-secondary educational institutions use a LMS, and the LMS is used by 85% of faculty and 83% of students. The LMS has evolved from the 1960’s with the first computer assisted instructional system,

PLATO, and with the creation of the Internet, to the LMS platforms available today (Rhode et al., 2017). The LMS has been credited to extending learning beyond the physical classroom space, to enable online collaboration between faculty and students, including the delivery of content and assessment (Mtebe, 2015; Rhode et al., 2017).

Leading Educational Change: Technology Adoption

The LMS has become an integral part of post-secondary education for over a decade with 85 percent of faculty confirming its use (Mtebe, 2015), and 81 percent of chief information officers reporting an LMS to be the most important technology to online learning (Legon & Garrett, 2017). Therefore, it is important for educational technology leaders to make informed decisions regarding LMS transition and implementation. According to Scott et al. (2008) failed change in post-secondary education has economic, strategic, social, and psychological costs. Faculty and leaders who fail at change find themselves with a lack of confidence in their ability to engage in change initiatives in the future. Change in post-secondary education is inevitable and continuous. Therefore, a different mindset to continual change is necessary, that is one where change is seen as cyclical, with an ebb and flow of ideas, where the search is not to find a solution to a problem, but rather to seek new possibilities (Doyle & Brady, 2018). The change leader is committed and immersed in the interactions at play, with the role of the leader being co-created and based on the leader's capacity to guide the change process (Doyle & Brady, 2018). Academic leadership in post-secondary education are facing new challenges that call for a reconsideration of traditional leadership practices (Temple & Ylitalo, 2009). Traditional leadership skills are seen as no longer effective, and the leader of today needs to develop additional skills to meet the new challenges they now face (Hempsall, 2014).

Fullan (2008) introduced six steps, or “secrets”, for change leadership. First, he called on leaders to love their employees, to invest in employees in the right way, to enable them to learn continually, to find meaning in their work, and to build positive relationships with coworkers. Second, he called for leaders to connect peers with purpose, to create a culture where peers interact and love their peers. Third, Fullan asked leaders to increase capacity to build individual and collaborative efficacy. Fourth, he encouraged leaders to establish a culture of learning, where learning is the work. Fifth, transparency must be displayed, in order to create “positive pressure”, or pressure that is solution focused (p. 14). Finally, Fullan said people learn on a continual basis when they are stimulated.

Buller (2015) introduced three models of change management: Kubler-Ross Model of Change Management where individuals go through a five-step process similar to those who learn they have a terminal illness, which includes denial, anger, bargaining, depression, and acceptance. The Kruger Model of Change Management considers factors such as cost, time, input and output metrics, and quality, where change managers ensure the human element is considered in their desire to get cost, time, and quality right (p. 6). Finally, Kotter’s Model of Change Management outlines an eight-step process to change management: establishing a sense of urgency, creating a guiding coalition, developing a change vision, communicating the vision for buy in, empowering broad-based action, generating short-term wins, never letting up, and incorporating changes into culture (p. 8). In Kotter’s model, the occurrence of each step is vital in order to make change permanent. Buller (2015) asserted all three of these change management approaches provide significant insights for college leaders.

Technology Adoption or Transition

It is important for post-secondary institutions to manage change even in order to maintain stability (Misiunas & Stravinskiene, 2010). Organizational change can be broken into different categories, for example, planned and unplanned, revolutionary and evolutionary, rational and chaotic, or continuous or episodic (Misiunas & Stravinskiene, 2010). Brown (2014) suggested there is a need to fully engage colleagues in the implementation of new technology, making projects more participatory and collaborative. Effective, sustainable change requires new policies and procedures, new technological systems, and a change in the culture of the organization (Brown, 2014; Gruba & Nguyen, 2019). If the approach to technology implementation is top heavy, and faculty are not fully engaged in the process, the result is likely to lack real change (Brown, 2014). McGriff (2001) asserted, “technology, as an innovation, consistently creates changes in the way people and organizations function, access information, and communicate” (p. 308).

Effective management of educational technologies will most likely lead to improvement in teaching and student learning (Nworie & McGriff, 2001). There is a need for educational technology leaders to guide faculty and work collaboratively with faculty and administration to bring about technological change in institutions of post-secondary education (Nworie & McGriff, 2001). There is also a need for leaders to assess how and why technological innovations are necessary (Strawser et al., 2018). As institutions increase the number of courses offered online, faculty will need to learn to teach using a LMS, and will need to understand how it is relevant to instruction (Gautreau, 2011).

Leading a Learning Management System Transition

LMSs are becoming as common as the Internet or email, and play a major role in today's post-secondary education (Bousbahi & Alrazgan, 2015; Georgouli et al., 2008). One study has demonstrated that online learning has led to a change in teaching and learning from teacher-centered to student-centered (Bousbahi & Alrazgan, 2015). Successful implementation of educational technology depends on platform availability and faculty attitudes (Bousbahi & Alrazgan, 2015; Sanga, 2016). Faculty whose teaching methods are traditional are often reluctant to change, yet it is likely technology implementation will be unsuccessful unless faculty are willing to adapt to a different teaching style more conducive to online delivery (Georgouli et al., 2008). According to Ward et al. (2010), some faculty members may be reluctant to offer online courses because of concerns related to instruction quality, learning, and student engagement.

Samarawickrema and Stacey (2007) noted how LMS implementation tends to occur so quickly that it may lead to system wide challenges, including misinformed faculty. According to Strawser et al. (2018), faculty reported being dissatisfied with the initial adoption and use of a LMS because they may not have experience in using a LMS, or they are unhappy with moving from one platform to another. Time is considered to be the most important commodity in technology transition as it should allow for "technology implementers to learn, adapt, integrate, and reflect" (Jakovljevic, 2019; Strawser et al., 2018). When faced with LMS transition, faculty are concerned with increased workloads, and with the time it will take to make a successful transition (Ryan et al., 2012). Change is considered to be one of the top 10 information technology issues (Allison et al., 2008), and change management is one of the top information technology concerns in post-secondary education (Fullan, 2002). Technology innovation initiatives will be unsuccessful without a change management process in place (Ryan, et al.,

2012). Therefore, a transition plan should be developed and carried out so that all stakeholders make the transition with minimal disruption (Beatty & Ulasewicz, 2006).

Leadership as Part of Change Management

Abbas (2018) determined leaders to hold a position of authority which places them in a position where they are respected, and therefore followed by employees. Leadership is important as it “enhances personal, organisational, and national socio-economic growth and development” (Jomah, 2017). Smith (1997) defined a leader as a person that leads, directs, commands, or guides a group, and a follower as a person who follows someone’s directions or commands. This power dynamic plays a pivotal role in leading technological change in that there is a correlation between leaders’ behavior and the behavior of followers (Mawhinney, 2006). To mitigate this impact, Smith (1997) provided four strategies:

- 1) The leader should ask questions instead of offering opinions or solutions.
- 2) Provide opportunities for others to lead.
- 3) Delegate group tasks, and
- 4) Help team members to find resources by collaborating with other team members rather than going to the leader for approval.

Two styles of leadership that empower followers to actively engage in the change management process are authentic leadership and servant leadership.

Authentic Leadership

According to Avolio and Gardner (2005) positions of leadership can be challenging and stressful, which leads to the necessity of a renewed definition of genuine leadership. Authentic leaders are defined as “persons who have achieved high levels of authenticity in that they know

who they are, what they believe and value, and they act upon those values and beliefs while transparently interacting with others” (Avolio et al., 2004, p. 802). Leroy et al. (2015) reflected on the notion of authenticity stating, “the operation of one’s true self can take many forms such as telling the truth (relational orientation), admitting personal mistakes (unbiased processing), being aware of what demotivates oneself (self-awareness), and staying true to personal values through behavior (authentic behavior)” (p. 1679).

The authentic leader displays confidence, optimism, hope and resiliency (Avolio & Gardner, 2005). Additionally, the authentic leader has a strong moral compass, is able to make ethical decisions, and is transparent in the decision-making process. The authentic leader is also self-aware and recognizes their own strengths, talents, purpose, values and beliefs, and has the ability to self-regulate to ensure values and actions are aligned (Avolio & Gardner, 2005).

Leroy et al. (2015) defined authentic leadership as occurring “when individuals enact their true selves in their role as a leader” (p. 167). However, a conflict arises when the leader is displaying their “true self”, is unable to accurately self-reflect or self-regulate, and perceives themselves as possessing the traits of an authentic leader. Einarsen et al. (2007) asserted the definition of destructive leadership “should not include intent, because what makes leadership destructive has less to do with the leaders’ intentions than with the outcomes of the leaders’ behaviour” and that “destructive leadership behaviour may therefore include behaviours that were not intended to cause harm, but as a result of thoughtlessness, insensitivity, or lack of competence, undermines subordinates and/or the organization” (p. 209).

Interest in the role of leaders within post-secondary education has been growing in recent years due to the changing landscape, and leaders within the post-secondary context have to figure out how to best lead their institutions (Black, 2015). Leaders carry the load in terms of

bearing the “responsibility for influencing their employees’ adoption of evolving organizational values, attitudes, and goals” (Chiniara & Bentein, 2016, p. 138). Because authentic leaders are secure in their identities, they empower followers to make decisions and to take risks. This can empower followers to make decisions in support of organizational change, such as the transition to a new LMS.

Servant Leadership

Servant leaders put the organization ahead of themselves and their own personal agendas, and focus on followers growth and empowerment (Chiniara & Bentein, 2016). Servant leadership fosters an ethical agenda as it promotes morality centered self-reflection, and a cycle of service and service climate (Hunter et al., 2013). Hunter et al. (2013) examined personality traits of servant leaders and found that those who lead using a servant leadership approach are less likely to be narcissistic, and tend to exhibit agreeableness and extraversion. Ehrhart (2004) identified seven dimensions of servant leadership: First, servant leaders spend time with their colleagues forging positive relationships. Second, servant leaders empower followers by seeking input on managerial decisions. Third, servant leaders help followers grow and succeed. Fourth, servant leaders behave ethically following through on promises. Fifth, servant leaders are able to balance day to day tasks with future vision. Sixth, they put followers first by promoting their success. Finally, servant leaders encourage followers to step outside the organization, creating value within the community. According to Chiniara and Bentein (2016), “servant leaders can help an organization perform better and grow through satisfaction of the psychological needs of the individuals working for it” (p. 137).

Both authentic and servant leaders build relationships with faculty and empower them to make decisions to impact organizational change. These leaders put others ahead of themselves to

build a culture where change can occur. By taking an authentic or a servant leadership approach, faculty will be empowered to engage in the LMS transition and implementation process, which will allow for a smoother transition.

Positioning the Study

Educational technology leadership is very important. As more institutions adopt a LMS, there is a greater need for educational technology leadership, yet there are few educational technologists in leadership positions (Kowch, 2016; Nworie & McGriff, 2001). Many educational technologists aspire to positions within the field, such as instructional designers and technologists, and not to positions of formal leadership (Nworie & McGriff, 2001). Therefore, leaders are making decisions regarding educational technology without having the education or expertise. Additionally, there is little research on technology change management, and even less research from within the community college context. The proposed study seeks to explore the leadership factors that influence the process of LMS transition and implementation within one community college.

Conceptual Framework

A conceptual framework is referred to as “the current version of the researcher’s map of the territory being investigated” (Miles et al., 2013, p. 20). Upon review of the literature and professional experience, I proposed a conceptual framework that included Rogers’ (2003) Diffusion of Innovation Model and Fullan’s (2011) Change Leader Framework. This conceptual framework guided my study into the leadership factors that influence the implementation of a LMS in one community college.

Diffusion is the process whereby innovation is spread via communication channels within an organization, and innovation is defined as the process of how new ideas and processes are

spread (Rogers et al., 2005). Innovations that are seen as advantageous, compatible with the values of the institution, are easy to understand, are observable, and are able to be implemented as a trial are adopted more easily than those that are not (Rogers et al., 2005). The aim of the diffusion of innovations model is a faster rate of innovation adoption, resulting in a “higher-order, fitter system” (Rogers et al., 2005, p. 4). Rogers’ diffusion of innovation theory identifies patterns that occur as an innovation obtains buy in within an organization (Ratts & Wood, 2011).

Rogers (2003) outlined five qualities related to the innovation process which he believes will predict the rate of adoption. Relative advantage which refers to the more individuals within the organization realize the usefulness of the innovation, the quicker the rate of adoption; Compatibility or the “degree to which an innovation is perceived to be consistent with the values, past experiences, and the needs of possible adopters” (p. 15); Simplicity or ease of use, which refers to ideas that are easy to understand are typically implemented faster than those that are not; Trialability, referring to the extent to which an innovation can be implemented on a trial basis; and observability, which refers to the notion that the easier it is for individuals to see results, the more likely they are to adopt it. Demonstration of each of these five qualities are essential to ensure the rapid rate of adoption required in this project. It is expected that innovators and early adopters will pilot the LMS in the 2019-20 academic year, with the later adopters and laggards the following year. As this model allows for a faster rate of adoption, it fits well within the institutional plan.

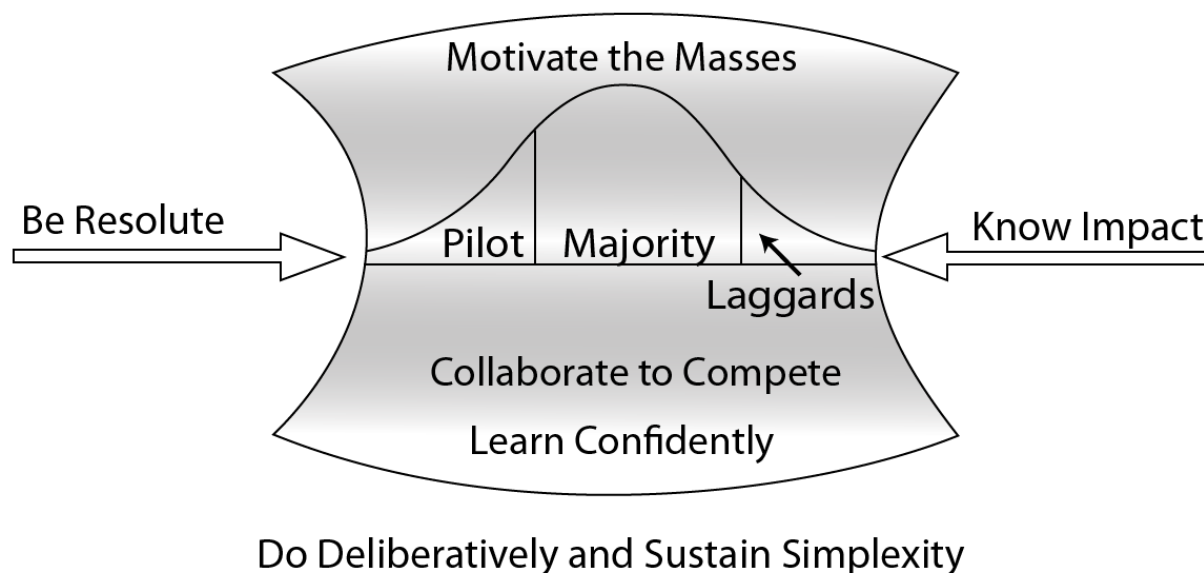
Rogers (2003) outlined adopter categories as defined as “the classifications of members of a social system on the basis of innovativeness” (p. 22). This includes innovators, or those who are willing to try new initiatives; Early adopters, often considered role models and leaders, who play a role at each stage of the process; Early majority, who according to Rogers (2003) have

good relationships with others but do not play a leadership role. However, they adopt the innovation before the other half of their peers, but generally take more time than innovators and early adopters; Late majority, or one third of the individuals involved who wait until most of their peers have adopted the innovation. Others who have adopted the innovation previously may persuade the late majority to adopt the innovation; and, finally, the laggards who tend to take longer to adopt an innovation and decide to do so only after seeing it successfully implemented by their peers. For the purposes of my study, the innovators and early adopters were considered the pilot group, with the early and late majority combined to comprise the majority, and the laggards as those who were the last group of faculty to make the transition. In addition to Roger's diffusion of innovation, Fullan's change framework was utilized to allow for a smoother transition to a new LMS.

Fullan (2011) outlined six elements of a change framework that will enable a leader to be more effective. First, Fullan said a leader must be resolute, meaning all leaders must realize that change takes time. Therefore, patience and persistence are necessary. Second, he called for leaders to motivate the masses, or to create conditions "for others to develop leadership through doing" (p. 153). Third, leaders are to collaborate to compete, which refers to the motivation of the group so that there is a push for greater motivation. Fourth, change leaders must learn confidently and have a growth mindset, where learning in the face of challenges is expected and celebrated. Fifth, leaders must know their impact, and be aware of the connection between action and knowing. Leaders must not be misled by data to the point where they miss key elements. Sixth, change leaders realize the importance of doing things deliberately and to sustain simplicity. According to Fullan (2011), the most important thing for a change leader to consider is what people do every day and how leaders can improve it.

Figure 1 outlines the initial conceptual framework of my study which was formed by the combination of Fullan's Six Elements of Change Framework and Roger's Diffusion of Innovation Model to create an environment where leaders and faculty interacted to provide a model of change management for the adoption of the LMS within the community college context. At the center of the conceptual framework were the faculty. The LMS was piloted by a small number of faculty who were eager for change. These individuals aspired to engage in new initiatives, and had experience teaching online using a LMS. After the initial pilot, the majority, or those who were a little more resistant to change, but had witnessed the success of their peers involved in the pilot, started to use the platform. Finally, the laggards, or those who were resistant to change, were the final group in the LMS adoption. The laggards were believed to make the transition only after all other faculty had implemented the technology, and the old platform was no longer in use.

While the implementation phase included the pilot, majority, and laggards, the change leaders followed Fullan's (2011) Six Elements of Change Framework to create a culture where effective change can occur, where dialogue was open and frequent, and where faculty were collaborating with one another to adopt the new LMS.

Figure 1*Conceptual Framework***Chapter Summary**

Technology has had a tremendous impact on education, as it has led to an increased demand for distance and online learning and the use of a LMS (Bousbahi & Alrazgan, 2015). The literature review explored the landscape of online and blended learning and leadership within the context of the LMS transition in a community college setting. This positioned the study and provided a conceptual framework which included Roger's diffusion of innovation model with Fullan's change framework. In Chapter Three, I outlined the research design for the study.

CHAPTER THREE: RESEARCH DESIGN

The purpose of my study was to explore the leadership factors that influenced the implementation of a LMS in one community college. The qualitative research paradigm aligns with my research question, how do leaders in a rural community college in western Canada understand practices of leadership when implementing LMSs as it allows for rich conversation around the experiences of technology implementation within the selected community college. This chapter provides an overview of the methodology and methods of data collection and analysis used in the study. Also included is information focused on the population and sampling, integrity, limitations, delimitations, and ethical considerations of the study.

Qualitative Research Paradigm

According to Merriam (1998), “qualitative researchers are interested in understanding how people interpret their experiences, how they construct their worlds, and what meaning they attribute to their experiences” (p. 6). Denzin and Lincoln (2018) defined qualitative research as “a situated activity that locates the observer in the world” (p. 6). Qualitative research discovers and describes what people do in their everyday lives, and how their actions are meaningful to them in their natural settings (Creswell, 1998). The most common type of qualitative research, known as interpretive research, considers multiple realities or interpretations of an event, and is often used synonymously with constructivism (Merriam & Tisdell, 2016). Researchers engaging in a qualitative study desire to discover and understand a process or phenomenon, or the perspectives and worldviews of the people around them (Merriam, 1998).

By the mid-19th century, attempts were made to establish the foundations of social inquiry. However, during the 1970s and 1980s, qualitative inquiry struggled for its place as a legitimate research paradigm amongst quantitative paradigms (Denzin & Lincoln, 2018). Since then,

however, qualitative research has become well recognized as a paradigm of choice for research that is conducted in the social sciences, and in areas where practitioners deal with a phenomenon occurring in people's daily lives (Merriam & Tisdell, 2016).

Creswell (1998) provided eight reasons for conducting a qualitative research study: First, the nature of the research question is such that the researcher seeks answers to the questions of how something is in the exploration of a particular phenomenon. Second, the topic needs to be explored, the variables are not easily identified, and theories are not available to explain the behavior of participants. Third, a detailed view of the topic is necessary. Fourth, the individuals must be studied in their natural setting. Fifth, there is an interest on the part of the researcher to write in a literary style, and the researcher brings themselves into the study. Sixth, extensive data collection is necessary and sufficient time and resources are available. Seventh, the audience is receptive to a qualitative approach. Eighth, the researcher is seen as an active learner who tells the story from the participant's view rather than an expert. It is based on these eight reasons, as well as the natural setting in which my study took place, that the research study fell within the qualitative research paradigm.

Case Study Methodology

Qualitative research design is an appropriate approach for a researcher who is interested in knowing more about improving one's practice (Merriam & Tisdell, 2016). It is important to choose a research design consistent with the research question, and one that matches with the researchers' worldview, personality, and skills, and that studies the phenomenon well (Flyvbjerg, 2006; Merriam & Tisdell, 2016). As the intent of my research was to improve the institutional practice around technology adoption, a case study methodology was considered to be the best

approach. The study included a single case approach, within the real-world context of one community college in Alberta, Canada.

Case Study Overview

While there are varying definitions of case study, Gustafsson (2017) defined the methodology as a rigorous study of a group of people which aims to make generalizations across multiple systems. Creswell (2013) stated the case study methodology “explores a real-life, contemporary bounded system (a case)...over time, through detailed, in depth data collection” (p. 97). Further research expanded the definition of case study to include the investigation of a phenomenon when the boundaries between the phenomenon and the context are unclear, and the methodology provides a practice to be explored (Miles, 2015; Sanga, 2016; Yin, 2009). Yin (2009) posited case studies are preferred in the following instances: When how or why questions are being posed; the researcher has little control over events; and, the focus is on a phenomenon within a real-life context. Yin’s description of case study comes from a positivistic paradigm in situations where the study will produce set facts. Yin (2002) suggested researchers should maintain four “yardsticks” to guide the research study: construct validity, internal validity, external validity, and reliability.

According to Yazan (2015), “case study is one of the most frequently used qualitative methodologies” (p. 135). Case study research has been considered to be one of the most challenging amongst qualitative research paradigms (Yin, 2018). As Yazan (2015) pointed out, case study methodology is “characterized by varying, sometimes opposing, approaches espoused by many research methodologists” (p. 134). This often leads to many novice researchers becoming confused as to what case study methodology actually is, and how it differs from other forms of qualitative inquiry (Merriam, 1998). While case study research is used frequently and is

well recognized for research in the social sciences, many researchers still do not approve of it (Yin, 2018). Yin (2018) believed one concern about the use of case study as a methodology to be regarding rigor, indicating there is an expectation that case study research has historically been careless, therefore requires greater rigor. Another issue is the prominent role of case study outside of research (i.e., case studies may be used to improve teaching practice). Yin (2018) also posited single case studies are not easily generalizable to the greater population, and the case study method can potentially take too long to complete, due to the collection of lengthy documentation.

Merriam (1998) described the case study process as being used to monitor and describe the context, to discover the extent that a program has been implemented, and to evaluate whether the outcome had the intended effect. Merriam (1998) viewed case study as constructivist in nature with research in the case study methodology producing knowledge of the world of educational practice. Merriam (1998) maintained reality is constructed by people within their own worlds, and that there can be multiple interpretations of that reality. According to Merriam and Tisdell (2016) a case study is defined as a detailed description and analysis of a case or “bounded system” (p. 37). Harrison et al. (2017) indicated bounding a case to be a necessary step in order to focus and frame data collection and analysis. Bounding the case involves identifying the parameters of the case, which include the participants, location, process, and timeframe of the study (Harrison et al., 2017).

Description of the Case

My case study research was bound by geography, as it was situated in rural, western Canada, as well as in the post-secondary, community college setting. The phenomenon being studied was how leaders in a rural community college in western Canada understand practices of

leadership when implementing LMSs. Participants of the study included formal and informal leaders who were involved in the LMS transition process over a one-year period. The study involved the transition from one LMS, that had been used in the institution for over a decade, to a new LMS. The informal leaders, or the faculty who participated in the study, had taught online at the institution ranging from less than 5 years to 16+ years, and had previous experience using LMSs as both students and instructors. These informal leaders were not directly involved in the decision-making process as they were not members of the Advisory Committee on Educational Technologies (ACET). However, they played an informal leadership role as those individuals used the new platform and informed the process during the pilot phase. The leaders represented on ACET were those individuals in positions of management who were responsible for making educational technology recommendations to Senior Leadership. As 90% of the courses offered at this institution were online, with some programs using a blended model, for example, Health and Trades programming, it was important to explore the process of transitioning from one LMS to another.

Population and Sampling

As the researcher, I used purposeful sampling as “it is based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned” (Merriam & Tisdell, 2016, p. 96). Therefore, the case selection for my study was purposeful in nature as potential participants met the following selection criteria:

- Member of ACET during the LMS selection and implementation process; and
- One of the faculty involved in piloting the LMS.

The study was limited to those who had been directly involved in the transition and implementation process. Data were collected from the ACET committee which was comprised of 15 managers (e.g., Deans, Chairs, Coordinators, Directors, and Senior Directors), and 12 faculty members who transitioned to the new LMS during the pilot phase of the change process. As ACET membership was comprised of managers, who were involved in the LMS selection and implementation process, it was important to hear from this group to determine the type of leadership that was explored as part of the LMS change process. The 12 faculty members who were involved in the pilot were asked to take part in the study as they were the first group to use the new technology. These individuals taught in the University Studies department and were considered to be the most technologically adept, and presented with the attitudes to support roles of informal leadership in the transition process. It was imperative to hear from faculty members to learn of what worked well and what were some of the gaps and barriers that impacted the successful transition and implementation of the new LMS.

Data Collection

This study was conducted using two sources of data collection: questionnaires and review of institutional policies and procedures on technology implementation. A qualitative method of data collection assisted the researcher to analyze the leadership involved in technology implementation within the community college context which formed the case for the purposes of the study. Before data collection began, informed consent was obtained from all participants.

There were three phases of data collection for the study. In the first phase, all participants were asked to complete an online open-ended interview or questionnaire that would establish a base line at the beginning of the pilot and the study. In the second phase, all participants were asked to engage in a second online interview that acted as a follow up six

months after the start of the pilot. It had been the researcher's intention to engage participants in a focus group interview in phase two of the study. However, due to the COVID-19 pandemic, interview questions were modified to be in the form of a questionnaire in an effort to facilitate participation in the study. In the third phase, the researcher reviewed documents (e.g., institutional policies and procedures) with regards to technology implementation. Table 1 lists the data sources per phase.

Table 1

Phases of Data Collection

Roles	Phase 1: Pre-Pilot	Phase 2: Mid-year Pilot	Phase 3: End of year Pilot
ACET Members (Managers)	Questionnaire # 1	Questionnaire # 2	
Faculty Members	Questionnaire # 1	Questionnaire # 2	
Institution			Documentation

Questionnaire

During Phase one pre-pilot phase, and Phase two mid-year pilot, all participants were asked to complete two online questionnaires. According to Creswell (2013) questionnaires are considered a form of interview and are therefore considered an acceptable method of collecting data in a qualitative study. One advantage of using a questionnaire is the researcher is able to explore reasons for the closed-responses.

Online questionnaires are advantageous as there are no limitations regarding geography when considering participants. Given that study participants were distributed throughout the province, an online questionnaire was deemed to work best for data collection. This participant group was comfortable with asynchronous communication methods so participation was expected to be high. Three advantages of using a questionnaire is that it allows participants flexibility to complete the questionnaire at their convenience, the ability to provide detailed and thoughtful answers to questions, and a sense of anonymity (Roller & Lavrakas, 2015).

The data collected in phase one was used to obtain a baseline prior to the start of piloting the LMS. The questionnaire consisted of a combination of eight open-ended and close-ended questions which allowed for a variety of responses (see Appendix A). The questionnaires were distributed by email through the institution's distribution lists in September, 2019 immediately after the fall term start. This allowed for preliminary analysis, and was an essential step prior to moving to phases two and three of the study.

The data collected in phase two were used to determine the extent to which the transition process had evolved after the new LMS had been implemented for six months. The questions were intended to gauge the transition process from the perspective of the leaders represented on ACET, as well as the instructors who had used the platform. The questionnaire was distributed by email in March, 2020, through the institution's distribution lists, and consisted of twelve open-ended and close-ended questions which allowed for a variety of responses (see Appendix B). This provided a follow up analysis of results from phase one of the study.

Documentation

During phase three, institutional documents on the educational technology implementation process and approvals were reviewed. A review of documents and artifacts is considered to be a valid source of data collection as they are typically a natural part of the research setting, and unaltered by the presence of the researcher (Creswell & Guetterman, 2019; Merriam & Tisdell, 2016). Document review in qualitative research is considered to be objective and unobtrusive. According to Merriam and Tisdell (2016), reviewing documents as data is similar to using interviews as it is guided by questions and findings, and may lead to uncovering valuable data. A review of policies and procedures provided a source of information to determine the processes related to technology implementation within the institution. Finding relevant documents is considered by Merriam and Tisdell (2016) to be the first step of the process, and researchers are advised to keep an open mind as this type of data collection is considered to be a “systemic procedure that evolves from the topic of inquiry itself” (p. 175). For the purposes of the study, the two documents regarding technology transition and implementation at the institution were reviewed: 1) As ACET was the recommending body regarding educational technology at the institution, the Terms of Reference for this committee was reviewed, and 2) the Information Technology Change Management Procedure which outlined the change and approval processes for educational technology.

Data Analysis

Merriam and Tisdell (2016) claimed qualitative data collection and analysis should occur simultaneously. It was determined that the data analysis should occur while collecting data, and in between data collection activities (Merriam & Tisdell, 2016). Data in the study were analyzed during data collection, as well as in between each of the three phases. According to Merriam and

Tisdell (2016), quality data analysis is to be inductive and comparative. In data analysis, the researcher seeks to make sense of the data by “consolidating, reducing, and interpreting what people have said and what the researcher has seen and read-it is the process of making meaning” (Merriam & Tisdell, 2016, p. 202). The data gathered in the study were analyzed using category or thematic construction (Merriam, 1998; Merriam & Tisdell, 2016).

Thematic Analysis

Thematic construction was used to analyze the data collected in the questionnaires and documents. Qualitative data analysis focuses on finding themes, categories, or patterns to find answers to the research questions (Merriam & Tisdell, 2016). Upon reviewing transcripts of each data collection method, I coded the data using the open coding method (Merriam & Tisdell, 2016). After coding, I determined themes or categories, using analytical coding. Through the process of thematic analysis, I was able to answer my research question and draw inferences for future studies (Merriam & Tisdell, 2016).

In each of the three phases of data collection, I familiarized myself with the data by reading through and searching for themes. As phases one and two were questionnaires, the data were organized into broad themes by the nature of the questions posed to participants. As I read through the data, I chose patterns and themes that emerged from each questionnaire and jotted down words or phrases to aid in data analysis. Coding from phase one occurred after the data had been collected which was six months prior to phase two. Coding for phase two occurred immediately after data collection. As I reread the data on several occasions, I was able to modify themes to ensure reliability of the coding. In phase three, a review of the documents was conducted to look for similar themes as presented in the first two phases, and to identify any gaps in the LMS transition process. Table 2 provides a sample of identified codes:

Table 2*Sample of Codes*

Phase One:	Phase Two:	Phase Three:
Communication	Transition	Transition
Involvement	Competence	Training
Preparedness	Training	Communication
Barriers	Barriers	ACET
Leadership	Communication	
	Leadership	

In analyzing the data, I followed Bogdan and Biklen (2011) suggestions such as making decisions to narrow the study and creating general questions to help focus. I also wrote comments and notes along the way to ensure valuable data was retained. Bloomberg and Volpe (2016) provided a Road Map for the Process of Qualitative Data Analysis which was followed in analyzing data in the study.

- Step 1- Data were reviewed to identify broad ideas. As indicated above, themes emerged by nature of the questions posted on each of the two questionnaires.
- Step 2- Data were read multiple times to identify categories, and the data was coded accordingly. This resulted in the identification of five major themes.
- Step 3 - Findings were reported, and
- Step 4 - Findings were interpreted by analyzing and linking to experience and literature on the topic (Bloomberg & Volpe, 2016).

Integrity of the Study

Merriam and Tisdell (2016) stated, “all research is concerned with producing valid and reliable knowledge in an ethical manner” (p. 237). The integrity of a study is largely dependent upon the ethics of the researcher (Merriam & Tisdell, 2016). It is important to be able to trust the research results as it is used to make decisions that impact people’s lives (Merriam, 2009). In qualitative studies, ethical considerations regarding the relationship between the researcher and participants are an important consideration (Merriam & Tisdell, 2016). There are several strategies that were used in my case study to ensure integrity (Merriam & Tisdell, 2016). Merriam (2009) indicated the importance of rigor, maintaining validity and reliability are obtained through the ways in which the data is collected, analyzed, interpreted, and how findings are presented. As the trustworthiness of qualitative research has been questioned, a strong approach to deal with these issues has transpired (Merriam & Tisdell, 2016). Merriam and Tisdell (2016) focused on methodological rigor to ensure trustworthiness.

Confirmability

Confirmability refers to “utilizing the same dependability audit to examine the evidence in the data that purportedly supports the researcher’s findings, interpretations, and recommendations” (Roller & Lavrakas, 2015, p. 21). According to Bloomberg and Volpe (2012), confirmability is synonymous with objectivity in quantitative research, or the idea that findings are the result of the research, and not an outcome of researcher bias. Inter-coder reliability was used to address researcher bias by discussing codes with my supervisor. Miles et al. (2013) explained several points for ensuring confirmability in a qualitative study which were applied to my study:

- 1) The methods and procedures of the study were described in detail.

- 2) The sequence of how data was collected and analyzed was transparent.
- 3) The conclusions were linked to the data.
- 4) The record of the study's methods were detailed so an auditor can understand.
- 5) The researcher shared any personal biases and how these may have impacted the study.
- 6) Conflicting hypotheses or conclusions have been examined.
- 7) The data was retained and available for reanalysis.

Credibility

According to Merriam and Tisdell (2016), “internal validity deals with the question of how research findings match reality” (p. 242). In a qualitative study, reality is frequently changing, and is not a fixed phenomenon to be explored (Merriam & Tisdell, 2016). In qualitative research, understanding a phenomenon is the reason for the study so a rigorous design must be developed.

Merriam and Tisdell (2016) claimed triangulation as an effective strategy to ensure the internal validity of a study. They described four types of triangulation that can be applied to a study: multiple data sources, multiple data collection methods, multiple investigators, and multiple theories (Merriam & Tisdell, 2016). For the purposes of my study, multiple data sources and data collection methods (e.g., questionnaires and document review) were used to ensure the credibility of the study. As members of ACET and faculty were participants in the study, it met the requirement for multiple data sources. The study used two questionnaires and documents, thus met the criteria for triangulation using multiple data collection methods.

Dependability

“Dependability refers to whether one can track the processes and procedures used to collect and interpret the data” (Bloomberg & Volpe, 2012, p. 113). According to Merriam and Tisdell (2016), it also refers to the ability of the results to be replicated, and is based upon the assumption that there is one reality, and further studying that reality will yield the same results (Merriam & Tisdell, 2016). Dependability is difficult in qualitative studies as “human behavior is never static, nor is what many experience necessarily more reliable than what one person experiences” (Merriam & Tisdell, 2016, p. 250). It is important for qualitative studies to ensure the results are consistent with the data collected so that the results make sense (Merriam & Tisdell, 2016). Triangulation by using multiple data sources and data collection methods were used in my study to support reliability.

Transferability

In determining transferability, it is important that the findings of one’s study can be applied to other situations (Merriam & Tisdell, 2016). In qualitative research studies, the findings are often not generalizable (Bloomberg & Volpe, 2016; Merriam & Tisdell, 2016). According to Merriam and Tisdell (2016), although qualitative studies typically do not yield generalizable data, making meaning of life and learning helps guide the future, as “every study, every case, every situation is theoretically an example of something else” (Merriam & Tisdell, 2016). In my study, the findings may be helpful to other rural community colleges when transitioning to a new LMS, or other more general technology transition.

Ethical Considerations

In qualitative research studies in educational settings, ethics are often questioned as the study involves human subjects (Dooley et al., 2017). Ethics approval was completed according to the ethical standards of the University of Calgary and the institutions Research Ethics Committee, as per the procedure entitled Conducting Research within the College Community. In case study data collection, the researcher is exploring a phenomenon where participants may be asked to discuss private details of their lives, and therefore requires a level of trust (Creswell & Guetterman, 2019). As the researcher is a dean at the institution, and is considered to be in a position of authority, it was important that the position and the relationship between the researcher and participants were considered (Merriam, 1998). While as the researcher, I was in a position of authority, no participants in the study directly reported to me. Guidelines for ethical practice were discussed with participants, and participants were informed of the purpose of the study, information was shared with participants, including my role as the researcher, using ethical practices, and maintaining confidentiality (Creswell & Guetterman, 2019). Participants were informed that all parts of this study were voluntary, and if they did not want to take part in the study, there was no obligation. In this study, participants were employees of the institution, and their participation demanded a high degree of trust. Participants were informed of the purpose of the research and ensured there would be no negative consequences of their participation. In order to ensure this, a research assistant was involved in both phases one and two, and the anonymity of participants were protected so that the knowledge of the collective group was shared without the focus on one individual (Creswell & Guetterman, 2019).

Limitations and Delimitations

Limitations

The limitations of a study are those conditions which are not under the researcher's control, but which may have an effect on the interpretation or the generalization of data (Lunenburg & Irby, 2008). The study had the following three limitations:

- 1) The length of the study as it was limited to the pilot stage of the implementation process.
- 2) The researcher had been employed by the institution in different capacities and was at the time of the study in a position of authority. This may have impacted the freedom of sharing information by peers and administrative leaders.
- 3) As the methodology was case study, within the specific context of a rural community college, the study cannot be generalized to the larger population (Merriam & Tisdell, 2016).

Delimitations

Delimitations are defined by Lunenburg and Irby (2008) as "self-imposed boundaries set by the researcher on the purpose and scope of the study" (p. 134). The study had the following two delimitations:

- 1) The sample was comprised of fifteen members of the institutions Advisory Committee on Educational Technologies (ACET). ACET is an internal advisory committee that makes recommendations to the Senior Leadership Team regarding educational technology adoption at the institution. There was one representative from

each program area whose role was to communicate with faculty and to bring the program educational technology needs forward to be considered.

- 2) Full time faculty members involved in the study were from two departments. Given the proposed pilot best aligns with the study, only faculty from these two areas were invited to participate.

Background and Role of the Researcher

During my tenure within the community college setting, I have been instructional faculty, program coordinator, chair, and now dean. In my decanal role, I play a pivotal role in the adoption of a LMS within my institution. My portfolio includes leadership of the Centre for Teaching and Learning which is responsible for guiding the process in terms of choice of LMS to ensure it meets the educational needs of students at the College, as well as training and professional development on both the functional use of the system and quality online pedagogy. My portfolio also includes 50% of the post-secondary programming at the institution. I believe this puts me at an advantage as I am well connected to the needs of faculty and students in terms of educational technology. I also chair ACET which is responsible for making the recommendation to senior leadership regarding the new LMS. I have also worked in various roles within the institution, and have relationships with all participants in the study. Because my background and current role provides experience and involvement in the LMS transition process, I used triangulation to ensure accuracy of data to make certain my personal biases did not undermine the integrity of the study.

Chapter Summary

The research study used case study methodology to explore the leadership factors that influence educational technology transition and implementation, particularly the transition to a

new LMS, within one rural community college in western Canada. The study explored how leaders in a rural community college in western Canada understand the practices of leadership when implementing a LMS with the intention to improve future educational technology transitions within this particular setting and in other community colleges. Findings from the study are shared in Chapter Four.

CHAPTER FOUR: ANALYSIS AND FINDINGS

This chapter presents the analysis of the findings of the data collected during my research study. In this study, a qualitative case study design was used that included questionnaires and a review of institutional documents to assist in disclosing how leaders in a rural community college in western Canada understand practices of leadership when implementing a Learning Management System (LMS). Questionnaires were conducted at the start and the end of the study. As well, a review of institutional policies and procedures as related to the adoption of a LMS was another data source for the study. In phase one, data were collected from eight management or faculty members. These individuals were either managers comprising the Advisory Committee on Education Technologies (ACET) or faculty who were involved in the pilot of the new LMS. In phase two, data were collected from six participants who were either managers or faculty members.

Context of the Study

The purpose of the study was to explore the nature of the leadership involved in the adoption and implementation of a LMS within the community college sector in a rural context in western Canada. While much research (e.g., Brown, 2014; Gruba & Nguyen, 2019) has been published on technology implementation, very little has been conducted on an institution similar to the one used as the context of this case study as it is quite diverse and differs from many other post-secondary institutions in the province. Ninety percent of programming at this rural community college is offered online to remote Indigenous reserves and Metis settlements such that students are able to remain within their communities, providing access to individuals who would not be able to leave their home communities in pursuit of post-secondary education. While a wealth of studies exists in online education, (e.g., Bailey et al., 2018; Bousbahi &

Alrazgan, 2015; Perry & Pilati, 2011), studies specific to the usage of a LMS are limited within the rural community college context within the province of Alberta. My study represents an attempt to develop baseline knowledge about LMS transition within the rural community college context in Alberta. The research question that guided my investigation was how do leaders in a rural community college in western Canada understand practices of leadership when implementing LMSs? To help inform the question, the following sub-questions were explored:

- 1) What conditions support and/or hinder the decision-making process for the selection and implementation of a Learning Management System in a community college?
- 2) What role did leadership play in supporting technology skill development as part of LMS implementation?
- 3) What communication strategies were used to support faculty with the LMS implementation plan?

Study Participants

Eight participants responded to the initial questionnaire that occurred in phase one of the study. From these eight participants, three identified themselves as management, and five identified themselves as faculty. The three managers were from the ACET committee participant group, while the remaining five were faculty who helped to form the group involved in piloting the LMS. Three participants identified themselves as having worked with the institution for less than 5 years, 3 indicated they worked for 6-10 years, while the remaining 2 indicated they worked at the institution for more than 16 years. All eight participants indicated being somewhat involved in the LMS transition process.

For the second phase of data collection, the questionnaire was distributed to 8 individuals who participated in the first phase of the study. Only 6 people completed the questionnaire in this

phase. Biographical sketches of the main participants are presented. To protect the anonymity of participants, pseudonyms were used. As there were no identifiers in phase one of the study, the following are participants from the second phase. Pseudonyms are used for the participants.

Cynthia

Cynthia has worked for the institution for over 16 years, and in the current role for the past five years. She is a faculty member working with the pilot. While she did not teach any courses during the pilot, Cynthia assisted other team members once the LMS was operational. In her administrative role, she worked with the Registrar's Office to ensure information was entered into the Student Information System in a timely manner, and has been part of meetings between her supervisor, and members of the Registrar's Office and the Centre for Teaching and Learning to ensure the Student Information System setup for fall is in alignment with LMS requirements.

Kathryn

Kathryn has worked for the College as an instructor in a part-time, moving to full-time employment in the past few years. She rated her LMS level of competence as very good and has been involved in beta testing in other roles external to this particular context.

Fred

Fred is a program dean. His role in the LMS transition process is to promote the concept to his team, and ensure managers and faculty within the department are providing appropriate feedback to assist with the transition. Part of his role was to identify and share concerns to assist with moving the LMS adoption and transition process forward, and to ensure the appropriate people from his area were adequately trained to be able to use the system. Fred indicated his experience using a LMS as minimal.

Shawn

Shawn has worked in the institution for over 15 years and is involved with project coordination. His level of competence in using LMSs is limited to two areas: understanding system maintenance, and integration and permissions needs for student level user of the product.

Sheldon

Sheldon did not provide any identifying factors as to his role, the length of time with the institution, or competence using a LMS.

Sheri

Sheri has been an instructor within the College for 14 years. She described her competence using a LMS as “quite proficient”. Sheri works from her home office, and has been teaching online for the entire tenure at the College.

Emerging Themes

Five major themes emerged from the analysis of the data. An analysis of this data illuminated faculty and management understanding of leadership factors that influence LMS transition within this particular college context. Each of these major themes are discussed in the following section: 1) Level of involvement of participants in the LMS decision-making and transition process; 2) Process of LMS transition; 3) Level of preparedness with LMS transition process; 4) Major obstacles impacting use of the LMS; and, 5) Role of leadership.

Level of Involvement in LMS Decision-Making and Transition Process

As outlined in the research problem, the rise of technology is changing how people teach. Faculty are expected to rapidly learn new technologies, yet they remain somewhat reluctant to adopt new technologies due to a lack of skills, resources and time as reasons for their reluctance (Baldwin, 1998; Ruiz et al., 2006). However, faculty benefit from using a LMS as it allows

flexibility, ease of access, as well as reinforces student engagement with course content (Bousbahi & Alrazgan, 2015). Within the context of the rural community college, involvement in the process is essential as over 90% of the College programming is offered in an online environment. For the purposes of this study, the decision-making process regarding the new LMS is considered part of the transition and implementation process.

From the initial questionnaire in phase one, all eight participants described their involvement as somewhat involved. As the roles of participants varied, four of the eight faculty indicated they use the LMS for teaching and delivery of their course context. They noted from the questionnaire that they had limited involvement in the processes other than to use as a teaching tool. For example, one indicated, “I am using it for courses”, another said “I am teaching multiple courses in the new LMS”, and another mentioned themselves as being “exposed and use of system for delivery purposes only”. The remaining three indicated involvement as leaders who are members of the Advisory Committee on Education Technologies, but expressed limited involvement in the actual usage of the LMS. For example, one participant indicated their involvement to be “as part of ACET, I had input in our needs assessment, as well as reviewing features of several LMS”. Others noted their involvement in the process to be as “participation on the Advisory Committee for Educational Technology”, while another participant indicated themselves as having “limited time and exposure to the LMS transition process”.

The document, Information and Technology Change Management Procedure, outlines steps required during a technology change. This document gives ACET the authority to “approve or reject change requests for learning management and course delivery systems on authority of the president” (p. 2). From the review of the document, the procedure does not discuss

involvement in the transition to new technology related platforms as it relates to faculty. However, the Terms of Reference for ACET indicates that membership consists of representatives from all program areas and departments in the College, and members are instructed under the Operational Guidelines section to represent their departments at the Committee, and report Committee proceedings to their departments. This is a complex process given many campuses are remote and consist of two or three staff, and they do not have access to a face-to-face technical department for assistance with a technology transition.

Process of LMS Transition

An effective LMS supports active engagement and enhances the learning process and is viewed positively by faculty when used effectively (Holmes & Prieto-Rodriguez, 2018). Leadership that supports faculty in the process is essential to LMS implementation. When asked about the process of transitioning to a new LMS, all eight participants in phase one of the study indicated they were somewhat involved. As three participants identified themselves as management, and five identified themselves to be in the faculty category, this indicates leadership was as involved in the process to the same degree as faculty. As the role of the leadership within this pilot group consisted of those individuals representing their departments on ACET, these leaders did not consider themselves as fully involved in the process.

In phase three of the study, a review of internal documents was conducted to determine whether policies and procedures in place at the institution aligned with the practices involved in the LMS transition process. In the document, Information and Technology Change Management Procedure, ACET was identified as the approval body, yet the document noted that the authority for this change process as being with “on the authority of the president”. However, the ACET Terms of Reference refers to the purpose of the committee being to “provide recommendation

on, and assist in the utilization and integration of new technology”, and also one of its’ objectives is to “provide a forum where members can disseminate/transfer information and ideas and identify ways to improve college programs and services within the area of educational technology”. It also refers to the authority of the committee to recommend to Dean’s Council when a major change in education technology is proposed, and from there the Deans are expected to share the recommendation with the Operations Committee for final approval. It is evident that these two internal documents that refer to educational technology change procedures are in conflict. For example, the ACET terms of reference refers to the Committee as not being a decision-making body. However, the Information and Technology Change Management Procedure document specifically refers to the Committee as having the authority to approve or reject change requests on the authority of the president. Furthermore, the ACET terms of reference indicates a responsibility to the Vice-President Academic, whereas the Information and Technology Change Management Procedure allows ACET to make decisions on behalf of the president.

Level of Preparedness with LMS Transition Process

When asked how prepared the participants were to use the LMS, of the eight involved in completing the questionnaire in phase one, six indicated they were ‘somewhat prepared’, one felt ‘not prepared’, and one felt ‘very prepared’. One participant indicated, “we are learning to use the system as we go...At present, our biggest obstacle is resources to convert all courses into the new platform and time to train all instructors how to use it effectively”.

Another stated they had “limited exposure to project, and received little to no training on the new LMS”. While others noted such issues as the following as having an impact on their preparedness: timing, familiarity with the LMS, and launch time. For example, one participant

indicated “D2L training was quite late; however, it is very user friendly, so intensive training was not required”.

In phase two of the study after participants had used the LMS for one semester, when participants were asked to describe their level of competence, three indicated their competence was high, two indicated a moderate level of competence, and only one indicated their competence to be minimal. When asked to describe the factors that contributed to their level of competence, four of the six participants identified training from the Centre for Teaching and Learning to be a main contributor. Kathryn noted:

[the College] provides good resource materials from the Centre responsible for supporting us. I can add that the individuals in that department are exceptional. They are kind, responsive and willing to help in any way they can. That is truly appreciated as I have worked at other educational institutions where the same cannot be said.

Cynthia also described the factors contributing to her level of competence as:

Faculty and staff have a great resource in our Centre for Teaching and Learning. They are knowledgeable and are always willing to assist with questions. Faculty/staff merely have to reach for the hand that is extended to them.

When asked if they had received training on how to use the LMS, and if so, what training had been provided, five participants indicated there were online reference documents and training available through the Centre for Teaching and Learning. Only one person indicated they did not receive any training, but were working through the platform independently.

As all participants had used a LMS previously, working in this type of environment was not new to study participants in either phase of the study. Therefore, based on previous experience working in a LMS environment, two participants indicated the transition to be

“intuitive”. One participant indicated, “it is very user friendly, so intensive training was not required”, and another noted, “from working with Moodle in the past, I feel that there will be some similarities or familiarities”.

Major Obstacles Impacting Use of the LMS

As all individuals involved in the study used a LMS in their daily roles at the College, it was evident that the LMS played a pivotal role in the education offered at the institution. From the data, ten obstacles were identified that had an impact on participant’s use of the LMS. Four major obstacles were noted in the first phase of the study, followed by six obstacles six months into the study.

Within phase one of the study, there were four obstacles identified. First, lack of training and a short transition time was an obstacle. In phase one of this study, one participant indicated, “this obstacle exists because of lack of training as it’s still in the pilot stage”, and another participant identified, “short notice” as being an obstacle impacting use of the LMS. One participant provided a recommendation to offer a follow up session five to six weeks after the initial pre-course training as a way to remove obstacles impacting use.

Second, limited resources within the institution had an impact on the transition. Only three people in the Information Technology department and one employee in the Centre for Teaching and Learning were assigned to assist with LMS transition. This small group provided support for the process implemented in stages. This process involved migration of courses from Moodle™ to D2L, the integration of D2L within the colleges operating systems, as well as training faculty on how to use the LMS. One participant noted this is a “small organization with limited resources so chose to do a graduate migration to the new LMS as opposed to an all at once move”.

Third, another participant mentioned having limited knowledge about the LMS as a major obstacle affecting their use. As the transition occurred on short notice to the pilot group, this participant felt they did not have adequate time to become familiar with the new LMS before having to use it in their teaching. This participant indicated they had to learn how to use the system along with the students which added a level of discomfort with using the LMS. This individual indicated having time to familiarize themselves with the LMS prior to instruction would benefit faculty who have yet to transition to the new LMS.

Fourth, communication was presented as a major obstacle impacting use of the LMS. In phase one of the study, three of eight participants specified email to be the primary communication strategy regarding the LMS transition process. Although, the role of ACET is to communicate with various department stakeholders on information regarding educational technology implementation, only two of eight participants indicated communication strategies to have included this committee. Two participants noted they were unsure of how the LMS transition had been communicated to faculty, and one participant said there were online seminars that consisted of two-three hour blocks of time. One participant indicated:

Stronger communication to faculty and chairs about the demo and the pilot and more communication about the process would be helpful. Also, clearly outlining the pros and cons of the LMS options that were being considered, and providing a clear document to indicate why D2L was chosen, and what its main advantages are...faculty should have been heavily involved in the decision making, they are the main users of the LMS and their input should have been sought.

In phase two, which occurred six months into the pilot, somewhat different findings emerged in terms of identified obstacles. Only one participant indicated a lack of training to be a

major obstacle, and each of six participants presented differing obstacles impacting the LMS use. First, one participant indicated using the legacy system at the same time as using the new system was a major obstacle as having to move back and forth from each one was a challenge. As this was a small group of instructors teaching university transfer courses, some courses remained in the old platform, while others migrated to the new LMS. This meant instructors were having to straddle two LMSs for the 2019-20 academic year which caused confusion for some instructors who had to navigate courses being taught in both systems. This participant indicated:

One obstacle was that I was operating in our legacy system and the new one concurrently.

I had a course load that required me to work in both... I had to re-orient when I went back and forth between the two...

When asked what could be done to help other faculty who have not yet adopted the new LMS to overcome this barrier, this participant stated the following:

Ideally, they would operate in the new one exclusively. I think an approach that allows new users to go in and use it as much as possible, well in advance of classes starting would be best. I believe that some people would likely benefit from someone “driving” some sessions for them also.

Second, another mentioned a fear of change, and a reluctance to use two different platforms as an obstacle. This participant noted:

General acceptance of instructors to change in systems and requirements for them to be part of the process...some fear on their part of transition and possibilities of being in two different platforms/systems as things change and develop.

When asked what could be done to support faculty to overcome these barriers, this participant identified: “providing information, showing examples, having others work with them

to help prepare items. Good supports are available through IT and [the Centre for Teaching and Learning]” and “some hands-on time and collaboration with those who have done so”. This participant noted time to spend familiarizing themselves with the new LMS, mentorship, and adequate training of faculty to be considerations for future implementation of the new platform.

Third, two participants noted technological barriers. As the new LMS needed to be integrated into current operating systems, this posed an obstacle for timely implementation of the new system. One participant noted:

A number of obstacles were encountered. Installation of system and integration with other information systems...to install and configure the system required work with the vendor and key stakeholders to ensure the new system worked as desired...A small group of courses were moved into the new LMS to isolate problems and concerns and test developed resources. Implementation with the small group helped inform the following rollout process.

When asked what could be done to assist other faculty who have not yet adopted the LMS, this participant indicated additional training and opportunity to use the system prior to class start to be strategies to overcome these barriers.

Another participant identified data informing use the new LMS to be dependent upon information being entered manually into the Student Information System in a timely manner as an obstacle to LMS use. This is the result of processes within the institution being manual, such as course enrolments. For example, if students are not entered into the operating system in a timely manner, there will be a delay in student enrollments into the LMS. When asked what could be done to help faculty who have not yet adopted the LMS to overcome these barriers, this participant indicated, “the obstacle I mentioned above does affect faculty vis-a vis not having

accurate class lists in D2L. We have been working with the Registrar's Office to make this more efficient".

Fourth, one participant noted the change in layout of content from one LMS to another to be quite different and that impacted use of the LMS as they had to familiarize themselves with the differences of each platform which was sometimes confusing, particularly as they were using two different LMSs simultaneously.

When asked what could be done to help other faculty who have not yet adopted the LMS to overcome these barriers, this participant suggested, "make faculty aware of how information(files) are grouped in D2L and offer an early preview". As faculty were unable to access their courses in the LMS until two weeks prior to term start, this led to a lack of time for some faculty who required more time to become familiar with the layout of the new platform.

Fifth, curriculum transition to the new system and staff training were presented as barriers by one participant. When asked what could have been done to help other faculty who have not yet adopted the LMS to overcome these barriers, this participant indicated:

Training staff was done in a number of steps using vendor expertise to develop internal expertise. These internal experts then worked with the vendor to train end users (faculty) to ensure they could use the system. A small group of courses were moved into the new LMS to isolate problems and concerns and test developed resources...

Access to the new LMS was not available until faculty were on summer vacation. As a result there was limited time to provide training or access to courses whereby faculty could have time to prepare their courses in advance of delivery. As a result, Instructional Designers in the Centre for Teaching and Learning migrated curriculum during the summer and provided training to faculty two weeks before the start of the semester. Because the LMS was new to the

institution, there were issues in that content did not migrate completely in some cases, and faculty were making last minute changes to their content in D2L. This led to some faculty feeling unprepared to teach their fall courses at the start of the semester.

Sixth, in phase two, five of the six participants specified they were communicated with by email, and only one participant listed ACET as the mechanism of communication. However, Fred also noted it was “discussed at monthly ACET meetings, emails, posts in forums and sessions hosted to inform staff, as well as presentations to various departments and senior leadership”, and Cynthia indicated she was not aware of a formal communication strategy but she was made aware of the LMS transition well before implementation. As the role of ACET members was to communicate with their departments on initiatives regarding educational technology, this indicated a breakdown in communication between some of the leaders who were represented on ACET and their respective teams.

Role of Leadership

According to Legon and Garrett (2017), 81% of chief information officers report an LMS to be the most important technology to online learning, and they are deemed to play a major role in today’s post-secondary education (Bousbahi & Alrazgan, 2015; Georgouli et al., 2008). Nworie and McGriff (2001) indicated a need for educational technology leaders to work collaboratively with faculty to bring about technological change. As such, it is important for educational technology leaders to make informed decisions regarding LMS transition and implementation. According to the Terms of Reference, the role of ACET is to “assist with the development and implementation of technology”, and the Information and Technology Change Management Procedure refers to this committee as the Change Management Committee for its role in decisions related to educational technologies. It is the responsibility of ACET members to

not only make decisions around the LMS to be used, but also to ensure faculty are prepared and trained to use it effectively.

When asked what role did the leaders in the institution play, in phase one, four of eight participants indicated they did not know the role of the leaders as it pertains to LMS selection and implementation. However, the remaining four indicated the leadership played a main role in the implementation process. One participant noted the process was “driven mainly from bottom up they ensured due diligence was followed in selection and gave final approval”. While another indicated, “[Leaders] put a lot of thought into what works best for the students. It was not decided overnight”. Others indicated ACET made recommendations and the Senior Leadership Team reviewed the options, and Senior Leadership, along with the program deans, determined how the LMS was implemented. Another participant said, “[Leaders] played a main role, as they brought the demo and initiated the pilot. After the demo they gave the new LMS the opportunity to be piloted for specific courses”.

From the questionnaire data, half of the participants knew very little about the role of leadership in the transition process, while the other half were well versed in the process. This may have been the result of the differing roles, for example, those who are formal leaders involved in the process and who sit on the ACET committee, and the instructors who were selected to pilot the new LMS.

In phase two of the study, three participants (n=6) indicated they did not know the role leadership played in the decision-making process. For example, Fred indicated the Dean of the Centre for Teaching and Learning to be knowledgeable and assumed ACET played a role. He also indicated that key stakeholders, such as the Registrar’s Office, should have been involved in the process early on, and this lack of involvement may have impacted the LMS transition

process. Shawn, from the Information Technology department, indicated ACET evaluated the options, and the recommendation to transition was presented to Dean's Council. For him, the Senior Leadership Team would have the final approval. Sheri also indicated the role of leadership to be the communication of stages and the provision of training sessions, and indicated an earlier roll out of the platform would have been beneficial. Fred and Shawn were both members of ACET and would have been involved in the leadership process. However, all other participants were not members of ACET and were either unsure of the process, or indicated the role of leadership to be to provide training, and did not speak to the approval process. From the data, it is evident there was a lack of communication and understanding regarding the role of leadership in the LMS transition process. Additionally, as the policies and procedures on technology change management deems ACET to be the leaders in Educational Technology change, program departments may not know the role, which may need to be more effectively communicated.

When asked what leaders in the institution could have done to impact the LMS transition process, five of six participants in phase one indicated resources and training earlier in the process would have been useful to ease the transition. One participant indicated: "Sharing information in a timely fashion and asking for input-perhaps surveying faculty- to see what they would like to see in an LMS".

As the transition occurred during the summer, faculty did not receive training or access to their courses on the new LMS until they returned to work in August before the start of the semester. This resulted in minimal time for the pilot group to become familiar working in the new environment. One participant indicated stronger communication to faculty and chairs about the demo and pilot would have been helpful. This statement is particularly interesting as all

program chairs were members of ACET, and would have had opportunity to provide input and leadership into the platform chosen and the implementation process. This participant also noted:

...faculty might resist the change because they don't feel that they had a chance to offer any input into the decision making, and don't know why D2L was chosen and what it can do for them to make their lives easier. Faculty should have been heavily involved in the decision making, they are the main users of the LMS and their input should have been sought.

As the role of ACET members on the Terms of Reference for the committee is to "represent their departments at the Committee, and report Committee proceedings to their departments", it appeared based on this comment that communication to the department in this case may have fallen short.

Chapter Summary

The five themes that emerged indicated that participant involvement and clearly defined processes are instrumental in LMS transition. The data also indicated faculty preparedness, training, and exposure to the LMS prior to implementation played a role in the success of the transition. From the data, it was evident that there was a gap in technology integration and implementation policies and procedures at the institution. Furthermore, a misalignment of information regarding the processes that exist resulted in a lack of clarity and understanding of the roles of the leaders involved in the process.

CHAPTER FIVE: DISCUSSION

This chapter discusses the findings of my study in exploring how leaders in a rural community college in western Canada understand practices of leadership when implementing a Learning Management System (LMS). I begin the chapter by revisiting my assumptions in relation to the research. The data disclosed an account of the leadership practices involved in LMS transition and implementation process in this setting. My assumptions about the educational technology change process were used in relation to my personal professional experience within the institution and the literature. Finally, this chapter will present a model for LMS transition and implementation that represents the process as captured by the data.

Assumptions

As this study was grounded in a rural community context in western Canada, and my professional experience as program dean with responsibility for program development and educational technology implementation, there were four assumptions that guided my inquiry. First, institutional leaders lack knowledge of educational technology. The leaders who represent their departments on ACET are primarily program deans or chairs, and have little knowledge of educational technology as they do not teach, nor use the technology regularly. Therefore, as those in positions of leadership do not teach online, their understanding of how a LMS functions within an online classroom environment is quite limited. Second, leaders who are on Advisory Committee on Educational Technology (ACET) do not fulfill their roles of ensuring their departments are well represented on the committee, which includes the dissemination of information from ACET to the program areas and vice versa. This lack of liaison between the committee and the departments has negative impacts on the transition process as there is little input from faculty who will be the primary users of the technology. Third, due to the structure of

the organization, the Centre for Teaching and Learning within this particular post-secondary context plays a major role in LMS transition in terms of training and support during the transition process. The Centre for Teaching and Learning is a strong team that will have a substantial impact on the LMS transition process. Fourth, a top-down approach is used for educational technology decisions within this rural community college context whereby senior leadership provides final approval on educational technology initiatives. This group of individuals is far removed from students and faculty, and ultimately their lack of understanding with regards to educational technology impacts the effectiveness of decisions pertaining to LMS transition and implementation.

Discussion of the Findings

This chapter addresses the four research questions by drawing on the findings and relevant literature in relation to the themes. The following four topics are discussed: 1) Conditions that support and/or hinder decision making, 2) role of leadership, 3) communication strategies, and 4) leaders' understanding of the practices of leadership.

Conditions that Support and/or Hinder Decision-Making

What conditions support and/or hinder the decision-making process for the selection and implementation of a LMS in a community college was the first question that guided my inquiry. From the study, two conditions of support were identified in relation to the decision-making process for the selection and implementation of a LMS. First, faculty who have access to training are better prepared to use a new LMS. Second, faculty who have familiarity with using LMSs more easily make the transition to a new platform. In addition, two conditions were identified as hindrances: faculty engagement in the LMS transition and implementation process and limited availability of resources to support the transition.

Training and Preparedness

At the outset of the study, participants who were identified as faculty expressed varying levels of preparedness to use the new LMS, ranging from somewhat prepared to very prepared. As noted by one participant in phase one of the study, “we are learning the system as we go”, and by another who said there was limited exposure to the project or little training provided on how to use the LMS. While faculty were informed of a potential change in LMS for the next academic year, the final approval to pilot the new platform was received early in the summer when faculty were on vacation. Therefore, faculty involved in piloting the new LMS did not receive training on how to use the system until their return to work in late August. Because phase one of the study was conducted at the outset of the pilot, prior to faculty teaching their courses using the new LMS, the data indicated a lack of time to become proficient and prepared to use the platform resulted in uncertainty as they were expected to effectively use the new platform to teach in a short time frame. As indicated by Hechter and Vermette (2013), this could have presented as a major obstacle to successful technology integration, as when changing LMSs a significant amount of time and training is required (Paynter & Barnes, 2021). As a result of a lack of preparation time, faculty members may have been reluctant to use the new platform as they may have had concerns regarding the quality of instruction (Ward et al., 2010). As indicated in my study and by Strawser et al. (2018) when transitioning to a new LMS, faculty consider time to be important. The lack of time to provide training in advance of the term start also led to faculty feeling ill prepared to use the platform prior to the term start. However, in phase two of the study, training was readily available, as support courses had been developed by the Centre for Teaching and Learning, and synchronous training sessions were offered so that faculty were able to obtain the necessary training, and had the opportunity to ask questions and receive timely

answers. Faculty were provided the basics of using the platform at the start of the pilot in August, and were offered additional training as the term progressed. Ready access to training and supports through the Centre for Teaching and Learning facilitated the transition process whereby participants indicated a moderate level of preparedness to use the system, even with the training deemed to be late. One participant indicated:

...provides good resource materials for the Centre responsible for supporting us. I can add that the individuals working in that department are exceptional. They are kind, responsive and willing to help in any way that they can. That is truly appreciated as I have worked in other educational institutions where the same cannot be said.

And, as indicated by another participant:

Faculty and staff have a great resource in our Centre for Teaching and Learning. They are very knowledgeable and are always willing to assist with questions. Faculty/staff merely have to reach for the hand that is extended to them.

Having training available in a sufficient timeframe prior to implementation of a new LMS, and availability of ongoing supports during the transition process is important for success.

Coskuncay and Ozkan (2013) deemed the LMS to be one of the most important innovations for delivering online education, and we know faculty who fail at change are reluctant to engage in future change initiatives (Doyle & Brady, 2018). Therefore, it is important for the institution to ensure faculty are adequately trained and are prepared to use an LMS prior to implementation. Although training was considered late by participants, having training and supports available to faculty through the Centre for Teaching and Learning department during the LMS transition was a condition for success.

Familiarity with LMSs

What was evident from my study is faculty familiarity with LMSs was a condition that supported the successful transition to the new platform. In this study, Moodle™ had been used as a LMS for over a decade, and with 90% of programming being offered online throughout the institution, most instructors were familiar with the purpose of a LMS and how it functions to enhance online teaching and learning. Additionally, since all faculty who were participants in this study used Moodle™ for a number of years, familiarity with how a LMS functions and operates supported the transition to the new platform as it removed the barriers as indicated in the literature. Regarding the LMS transition process, one participant noted, "...it is very user friendly, so intensive training was not required". Kathryn indicated, "I have used several LMSs as both a graduate student and as an instructor. It was not a difficult transition for me personally". Participants also indicated their competence in using LMSs to be high which allowed for a successful transition to a new LMS as there was a high degree of familiarity. Only one participant indicated limited knowledge about the LMS as being a hindrance to its use, and felt that adequate time was not provided to become familiar with the platform prior to teaching. This individual indicated "familiarity and length of time" for faculty to familiarize themselves with the LMS prior to teaching would benefit faculty making a transition in the future.

Prior to the adoption of the new LMS, as indicated by Allison et al. (2008), faculty were reluctant to change and expressed unhappiness due to a lack of understanding of the reasons why a transition to a new LMS was beneficial, as well as a concern that their workloads would increase. Fullan (2016) stated one must see there is a means of moving forward, and that the most important factor to change a person's mind is to "connect to the person's reality as the point of departure for change" (p. 41). After training was provided and faculty began to use the LMS,

familiarity with using a LMS fostered a smooth transition in that it decreased the amount of time necessary to make the transition.

While training and preparedness and familiarity with using LMSs allowed for a successful transition in this rural community college context, there were also two hindrances identified in the process. First, the level of faculty involvement in the process. Second, the limited resources within the institution to support the LMS transition.

Faculty Engagement in the Process

The first of two conditions that hindered decision making is that of limited faculty engagement. Faculty commitment to online course design and delivery is essential for creating quality online learning environments (Markova et al., 2016). From my study, the data revealed participants were moderately involved in the LMS transition process and prepared to use the new platform. As noted by a participant in phase one of the study:

As it is, faculty might resist the change because they don't feel that they had a chance to offer any input into the decision-making, and don't know why D2L was chosen and what it can do for them to make their lives easier. Faculty should have been heavily involved in the decision-making, they are the main users of the LMS and their input should have been sought.

This lack of involvement at the outset of the study presented as a hindrance to implementation with participants feeling only somewhat prepared prior to class start. This led to faculty beginning classes without feeling as if they were prepared to do their jobs effectively. As suggested by Brown (2014) there is a need to fully engage colleagues in the implementation of new technology, making the process more participatory and collaborative, and if the procedure

of technology implementation is top heavy, without faculty engagement in the process, the initiative is unlikely to be successful. In my study, four of the eight faculty indicated they use the LMS for teaching and delivery of course content. Other participants noted they were aware the institution was seeking an alternative LMS, but did not know when the new platform would be implemented. It was not until they returned from holidays, were they informed of the transition plan. Faculty were provided access to the courses two weeks prior to the start of the fall term, and had minimal training prior to the teaching their fall courses. As noted in the data, this resulted in anxiety for instructors who were having to learn the technology at the same time as the students, and there was a risk that the transition could have failed because faculty felt ill prepared to use the new LMS. However, this risk was mitigated by the provision of training and support, as well as familiarity with using a LMS as indicated above. The data revealed after using the platform for six months, most faculty indicated their level of competence in using the new LMS to be moderate to high, and as noted by one participant in phase two of the study, “knowing that any issues with the new system could quickly be addressed lowered anxiety and increased a sense of competence”. Fullan (2016) indicated, “more and more we are finding the solution in shared meaning, which conveys the idea that change processes that engage individuals and groups to develop new solutions will be essential” (p. 9). Because all faculty had previous experience using LMSs, they were able to adapt quickly once exposed to the new platform with minimal disruption to students.

In addressing this hindrance, as indicated by Nworie and McGriff (2001), there is a need for educational technology leaders to work together with faculty and administration to bring about technological change in educational institutions. Also noted by Samarawickrema and Stacey (2007) and was in my study, LMS implementation tends to occur so quickly that it may

lead to misinformed faculty. The organizational structure within the institution whereby leaders make the decisions around the implementation of educational technology does not lend itself to engagement by faculty who, along with their students, are the primary users of the technology. Therefore, it is important to have the input of faculty throughout the process. While one of the functions of ACET was to liaise between the committee and their respective departments, it would have been beneficial for faculty to be members of the committee as they are a primary stakeholder.

Limited Resources

The second condition that hindered decision making as part of the LMS transition and implementation process was that of limited resources. Nearly all institutions of higher education have a LMS, along with the necessary information technology staff, training and hardware to support it, and the resources and expertise required to successfully implement LMSs into their institutions (Malm & DeFranco, 2012). As colleges were early adopters of technology, they were required to acquire the resources and expertise to successfully implement LMSs in their institutions (Malm & DeFranco, 2012). The costs associated with implementing technology are quite high, which is particularly challenging in a time when the institution is expected to decrease operating budgets and to be more fiscally responsible.

Due to the size and demographic of this rural community college studied in my research, there were limited resources available which impacted the transition. These were identified as information technology staff to assist with the implementation, the finances to create resources to support the transition, and the staff in the Centre for Teaching and Learning to lead training initiatives and migrate courses from the previous LMS. The institution is rural and is considered to be one of the smaller community colleges in the province, therefore there is not a large team

of individuals who are available to support faculty as they transitioned to a new platform. Only three people in the Information Technology department were assigned responsibility for the new LMS, and only one individual from the Centre for Teaching and Learning was available on a part-time basis to support the transition. To address this hindrance, the transition occurred with a small group of people over an extended period of time in order to be successful, as noted by one participant, "...so chose to do a graduate migration to the new LMS as opposed to an all at once move". As a result, a small group of faculty were chosen to pilot the new platform. This faculty group was strategically chosen to be a part of the pilot because of their educational technology proficiency, and because they had the attitudes consistent with being role models to support the transition. Furthermore, due to limited resources, it was important that the process for transition and implementation started small with an eager group, the early adopters, prior to moving to the majority, and finally to the laggards (Rogers, 2003). Garone et al. (2019) indicated most faculty, with the exception of voluntary early adopters, experience anxiety when transitioning to a new LMS. It was because of the educational technology proficiency of this group that the transition was able to successfully occur. While limited resources impacted the process, because the pilot was small, it was manageable for the institution, thereby mitigating this hindrance.

Summary of Conditions

There are four key conditions that supported and/or hindered the LMS implementation process. Faculty who are provided proper training on how to use the system and have time to learn how to use the system prior to teaching, experience greater success when transitioning to a new LMS. Similarly, those who have previous experience using LMSs are more easily able to transition to a new platform. Faculty engagement and availability of resources are two more

important considerations. Ensuring faculty are engaged in the process, and implementing the process in small, manageable steps are important keys to successful transition.

Role of Leadership

Three themes emerged from the data regarding the role of leadership in supporting skill development as part of this LMS transition process: 1) importance of knowledge of the LMS implementation process; 2) necessity of role clarification, and 3) clear policy that informs practice.

Importance of Knowledge of the LMS Implementation Process

A lack of knowledge of the LMS implementation process was a recurring theme in the data. When asked about the process of transitioning to a new LMS, all participants indicated they were somewhat involved. As participants consisted of both leaders and faculty, this indicates leaders saw themselves as being involved in the process to the same degree as the faculty. However, the leaders in the study were those who were given authority to make recommendations to senior leadership regarding educational technology direction, and as described by Abbas (2018) held a position of authority which placed them in the situation whereby they were respected and followed by employees. However, in this study, the leaders understood the process to the same degree as the faculty, which calls into the question whether the formal leaders were actually leading the LMS implementation process. As in Mawhinney (2006), the data indicated a correlation between the leaders' behavior and the behavior of followers when leading technology change. Leaders in my study were those individuals representing their departments on ACET. According to the ACET Terms of Reference, the role of its members was to represent their departments on this committee and to "provide recommendation on, and assist in the utilization and integration of new technology" (p. 1). In my

study, participants indicated the decisions regarding the LMS transition were made by ACET and the Senior Leadership Team. However, the data showed a lack of clarity by the leaders as to the implementation process. For example, one dean said they could not describe the process with accuracy, and described their knowledge as “aware of meetings to discuss and gather information of pilots in some areas”. From the data, it appears ACET members did not assist “in the utilization and integration” of the new platform. Rather it was deemed that the Centre for Teaching and Learning be responsible for this role. Furthermore, according to ACET’s Terms of Reference, one of the objectives of the committee was to “within the area of education technology, identify professional development and training needs and subsequent strategies, programs and resources to meet those needs...”. It was clear from the data that the training needs were identified through the Centre for Teaching and Learning’s involvement with the LMS transition process, and not from the leaders on ACET.

This lack of knowledge of the implementation process may be the result of a lack of alignment between the institutional documents regarding the process of LMS transition. While the ACET terms of reference refers to the committee as a recommending body, a review of the Information and Technology Change Management Procedure identified ACET as the approval body upon authority of the president which may have led to a lack of clarity regarding the involvement of the educational technology leaders. Additionally, although the institution hosts 90% of its programs online, there are only two documents pertaining to educational technology, and neither of which clearly define the process for LMS transition and implementation. This lack of knowledge of the implementation process and lack of involvement negatively impacted the implementation of the new LMS.

Necessity of Role Clarification

The leaders lack of knowledge of their roles on the ACET committee regarding LMS transition and implementation was a recurring theme in the data. The leaders who comprised the ACET were given responsibility from the Vice President Academic to recommend educational technology initiatives to senior leadership in an effort to, “identify, recommend, and maintain the standard for the delivery of courses” (ACET Terms of Reference, 2020, p. 1). As indicated in the data, the leaders involved in the process did not have knowledge of the implementation process, nor did they have experience using LMSs as indicated by one dean who described their competence using LMS as “minimal, I continue to learn and am pleased with the support offered”. In contrast, the data indicated faculty members involved were aware of their roles, including non-teaching faculty, such as coordinators who were involved in the process. This leads me to question how the faculty were aware of their roles, if the leaders did not fully understand the practices of LMS implementation. Did the faculty know through their involvement with the Centre for Teaching and Learning? Did they know based on previous involvement with using a LMS?

Given the two documents regarding educational technology implementation were in conflict regarding the authority of the committee, a clarification of the roles of leaders who are on the committee within those documents would be advantageous. Because this rural community college offers 90% of its programming online, and as indicated by Kowch (2016), there is a greater need for leaders to be educational technology leaders, to understand the practices of leading technological change, and to have an understanding of the process of LMS transition. Educational technologists employed at the institution work directly in positions related to the field, such as instructional designers and information technologists, and as indicated by

Nworie and McGriff, (2001) are not in positions of formal leadership. As seen in the data, the leaders involved in the LMS transition process were making decisions regarding educational technology without having the education or expertise to make informed decisions. As noted in Gruba and Nguyen (2019), it is important for leaders to identify with their position and their level of expertise so that if a leader is given responsibility and is knowledgeable about the subject, they can make more informed decisions. The leaders in my study on ACET represented their various departments, and other than the representative from the Centre for Teaching and Learning, have little knowledge or experience in educational technology which led to a lack of knowledge of their roles within the process of LMS implementation. As indicated by Gruba and Nguyen (2019), professional learning opportunities for stakeholders on the committee with specific roles pertaining to technology integration may be beneficial in identifying factors that influence the process. An advisory group on educational technology is recommended a re-evaluation of who comprises the committee, determining the authority of the committee, as well as clearly outlining the roles of those on the committee is an important consideration for an institution who is transitioning to a new LMS.

Clear Policy that Informs Practice

Within the context of my study, a lack of clarity around the process of LMS implementation was a recurring theme. From the document analysis, I discovered there were only two documents relevant to educational technology change, and those offered little direction as to the LMS transition process (i.e., Terms of Reference Advisory Committee on Educational Technology and Information and Technology Change Management Procedure). This lack of policy regarding the process was felt by participants of the study, indicating a situation whereby the leaders did not clearly understand the process or their roles within the process, which resulted

in a lack of clarity by other members involved in piloting the new platform. In phase one of data collection, faculty involved in piloting the new LMS did not know the process, and also indicated time for training as a barrier to implementation. However, after phase two, participants felt more involved and aware of the process, specifically identifying the Centre for Teaching and Learning as playing a pivotal role in the process. Given the institution offers 90% of its programming online, clear policies as to the process of LMS transition and implementation would be beneficial.

In the data, and as in research by Jakovljevic (2019), the institution was open to innovation but lacked clear guidelines or criteria for the innovation. As the institution's focus is on online education, educational technology related topics should be interwoven into policy that informs teaching and learning practices. As indicated in research by Doyle and Brady (2018), the rate of technological change is high, so it is important for the leaders who are involved in making decisions regarding LMS transition and implementation to have clear direction, and to be committed to guiding the change process.

The literature points to the inevitable and continuous rate of change in post-secondary education (e.g., Misiunas & Stravinskiene, 2010) and the notion that educational technology initiatives will be unsuccessful without a change management process in place, thereby requiring the implementation of policies and procedures, and new technological systems (Brown, 2014; Ryan et al., 2012). Top-down approaches to change do not tend to be successful, and in order to move technological change forward, there must be faculty engagement (Brown, 2014). In my study, faculty were not involved in decision-making and did not engage in the process until it was time for implementation. This placed faculty at a disadvantage as they only had two weeks to become familiar with a new LMS, and to get ready to teach their fall semester courses.

In the institution that forms the basis of my study, the organizational structure for educational technological change was considered to be working well, given the role of the ACET members to represent the interests of their departments on the committee. As evidenced in the data, there was a lack of communication between ACET and the faculty which resulted in faculty having knowledge of the potential of adoption of a new LMS, but were not provided opportunity to engage in the process. When asked what their roles were as related to LMS transition and implementation, faculty identified their roles in the institution, such as instructor, coordinator, working in the IT department, but did not describe any role in the actual LMS transition and implementation process. Furthermore, the process was further removed from faculty as ACET's role was to make a recommendation to senior leadership. The committee had no authority to make decisions, only recommendations. This removed the process even further away from the faculty who would be the primary users, and whose input would be invaluable. Because faculty were not involved in the decision-making process, and the process itself was not clearly defined in policy, there was disruption to the faculty who were using the platform. According to Beatty and Ulasewicz (2006), transition plans should be developed and carried out so that stakeholders are able to transition with minimal disruption, which was not the case within this rural community college context.

Summary of the Role of Leadership

From an examination of the data and upon review of the literature, it is clear that leaders need to know their roles as pertaining to educational technology transition. The leaders in this study were in positions of academic leadership and were not considered educational technology leaders. Due to the small size of this institution, these leaders were given authority to lead educational technology initiatives without having the foundation to do so, and this negatively

impacted the transition process. Policy regarding educational technology change is required so that change process is clearly outlined and each step is easy to follow such that those who may not have a strong background in educational technology are able to effectively facilitate and engage in the process.

Communication Strategies

The third question that guided my study was focused on communication strategies used to support faculty with the LMS implementation plan. From the data, the primary mode of communication regarding the LMS implementation process was as Kathryn noted through “thoughtful emails at various times and received updates in monthly staff meetings”, or through ACET meetings. As mentioned by one participant “change management support would have helped in this area and helped the transition of faculty”.

As institutions of higher education have entered into a period of significant cutbacks and are entering a time of crisis (Nellis & Slattery, 2012), and since this rural community college has undergone major administrative and technological changes, it is as Fullan (2016) indicated, “we have become so accustomed to the presence of change that we rarely stop to think about what change really means as we are experiencing it at that personal level” (p. 18). As leaders initiating change, it became evident from the study that this was not considered to the extent to which this change would impact the faculty or the informal leaders who were making the transition. This initiative was driven by senior leadership who had given direction to the chair of ACET to make a transition to the new LMS. Leaders on ACET were placed in the unfortunate situation of being tasked with making the transition to a new LMS, while at the same time were experiencing reluctance from their faculty. The process appeared at times to be hierarchical, and as indicated by Fullan (2016) was met with “ambivalence and uncertainty” (p. 21). In addressing this

hierarchical structure, Fullan (2016) argued the issue is not as much in how we seek change on our own terms, but rather how we handle the inevitability of change. This would then have leaders working with their teams to help them make meaning of why the change was happening which in turn may have helped faculty to support the change. Open dialogue and communication between leaders and their departments may have resulted in faculty members being more engaged in the process and better prepared to use the new LMS.

Communication during implementation is as important as communication prior to implementation. Leaders need to increase two-way communication during implementation to foster successful change (Fullan, 2011). In the data, email was identified as the primary mode of communication regarding the LMS transition. This was largely due to faculty being dispersed throughout the service region, with many either working from one of the 23 campuses or at a home office. Additionally, faculty teaching schedules differed greatly, making it a challenge to bring everyone together to meet online. It is common practice within the institution to distribute mass emails in an effort to keep individuals informed regarding key ideas that are happening, which was also used to inform participants throughout the transition process. Participants responded that they knew there was potential for a transition to a new LMS, but there was little opportunity to provide input by anyone other than those formal leaders who sat on ACET. Because the leaders did not liaise between their departments and the committee as required, opportunity for rich discussion on the LMS transition in an effort to obtain buy in was minimal.

Summary of Communication Strategies

My study supports the importance of communication and faculty engagement in the LMS transition and implementation process. It also highlights the need for leaders to create opportunities for open communication and dialogue in an effort to engage faculty in the decision-

making process, and to ensure their voices are heard. Committees related to educational technology change are relevant and play a role, but the structure of committees is an important consideration. In my study, the committee consisted solely of the leaders involved in the process, and expected the leaders to liaise with their departments and communicate back to the committee. This resulted in faculty not being informed nor engaged in the process. Therefore, the establishment of a committee that is comprised of representation at various levels within the organization is important to success, as stakeholders at every level should have a voice in the process.

Leaders' Understanding of Practices of Leadership

The main research question was how do leaders in a rural community college in western Canada understand practices of leadership when implementing a LMS? As the data showed, the leaders who were directly involved in making decisions around the LMS transition process did not fully understand their roles as leaders on the committee. Furthermore, the policy regarding ACET, the committee delegated the authority to make recommendations to senior leadership, did not clearly define the roles of its members or of the committee itself. It consisted of the leaders, who were a part of the ACET committee, and as noted by one participant, “after ACET made its recommendations, the Senior Leadership Team reviewed the options. Based on recommendations and financials, they ultimately determine which LMS is selected”. The senior leaders responsible for making the final decision regarding LMS transition and implementation had done so without having first-hand information (e.g., understanding of educational technology in support of teaching and learning) to make informed decisions.

Brown (2014) suggested the need for colleagues to be fully engaged in the process of implementing new technology, which would extend beyond the leaders and to the faculty who,

along with their students, are the primary user. Ryan et al. (2012) suggested, “behind any change are the stakeholders as the transition process is not just a hardware concern” (p. 222). Leaders who are facilitating change need the emotional intelligence to know when to change direction or to move forward (Hulley & Dier, 2005). Jomah (2017) indicated, “leaders should possess the capacity to positively influence the lives of the followers with the right charisma, empower their team members, and enhance their personal and career growth” (p. 197). There is a need for those leaders on ACET who have influence regarding education technology to guide and work collaboratively with faculty and administration to bring about technological change in post-secondary education, as indicated by Nworie and McGriff (2001). It was apparent from the data that the leaders on ACET lacked the vision to “create the path” necessary to engage faculty and guide the LMS implementation process (Jomah, 2017, p. 209). The data also indicated the senior leaders who were approving the recommendation were not engaged with the faculty and students who would be the primary users of the technology. It is also apparent from the data that the leaders lacked understanding of the process of LMS transition and the knowledge of educational technology to make informed decisions. Furthermore, it is apparent from the data that there is a disconnect between the leaders leading technological change and faculty and students who use the platform.

The literature points to a gap in knowledge by leaders who are involved in educational technology initiatives (Kowch, 2016), and also the discrepancy between what leaders know in theory and what they are able to do in practice (Inman, 2009; Petrie, 2014). Leroy et al. (2015) defined authentic leadership as occurring “when individuals enact their true selves in their role as a leader” (p. 167). When working with implementation of technology in educational settings, what level of understanding do the leaders need to make decisions? Leaders bear the

responsibility of influencing the attitudes and goals of those they supervise (Chiniara & Bentein, 2016), and they also bear responsibility for ensuring they engage those around them, and that they are collaborating with their department on a regular basis. Khan (2017) spoke to the importance of an ability of leaders to motivate followers to achieve success. In my study, the leaders on ACET provided direction to the committee which made the recommendation to the senior leadership team who then approved the decision. However, the recommendations were decided upon by the committee without input from faculty and students who were the primary stakeholders, and without a clear change management process, and as indicated by Ryan et al. (2012), change management can be unmanageable if there are no change management processes in place. Furthermore, an important aspect of the role of the leaders on ACET was to provide ongoing communication to their respective teams to facilitate engagement. In my study, leaders did not understand practices of leadership regarding technology integration within their roles on the Committee which led to a turbulent transition to the new LMS platform.

Summary of Leaders' Understanding of Practices of Leadership

The data revealed the leaders in the rural community college did not understand their roles as leaders on the technology decision making committee. While these leaders attended ACET meetings, including demonstrations of LMSs, and were given opportunity to provide input on the LMS, this appears to be where their understanding of their roles ended. One strategy to enhance the level of understanding of the leadership role is through professional learning. Providing professional learning opportunities for such committee members on the nature of their role and responsibilities will better inform them to make important decisions around educational technology. Committee members could benefit from professional learning specific to educational technologies, change management, as well as the role of leadership on educational technology

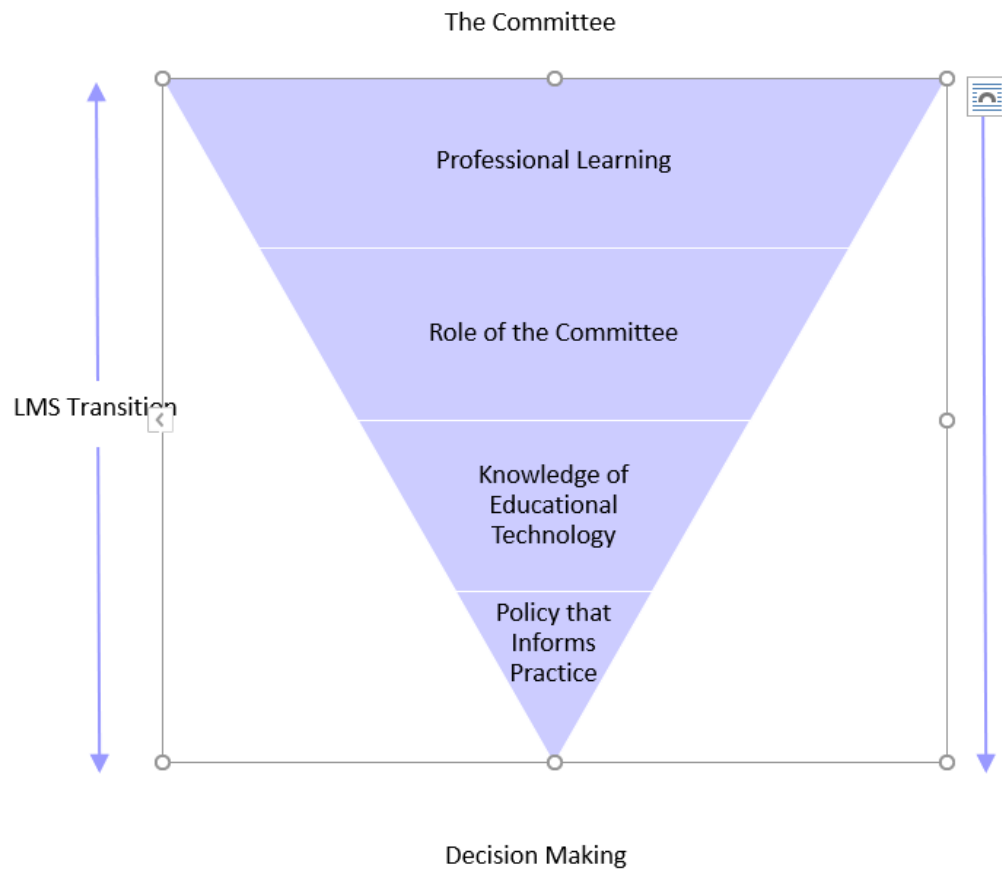
related committees. Because these are academic leaders, and their knowledge of educational technology is limited, it is important for all committee members to have the required knowledge to be able to lead education technology change initiatives.

Model for Leading a Learning Management System Transition

Given the focus of the study was on the pilot component of the transition phase, I developed a model focused on a decision-making process for leaders involved in LMS transition. Figure 2 illustrates a model of leading a Learning Management System (LMS) transition process. At the core of the model is ACET. This committee plays an important role in educational technology transition and is at the heart of the decision-making process. Central to the model are the four conditions that enable committee members to fully engage in the LMS transition process: 1) professional learning, 2) role of the committee, 3) knowledge of educational technology, and 4) policy that informs practice. The directional arrows indicate the interconnectivity between each of the four conditions relevant to the decision-making process regarding a LMS transition. The inverted triangle is indicative of the four conditions in place such that the educational technology committee is able to make informed decisions regarding LMS transition and implementation.

Figure 2

Model for Leading a LMS Transition



The model includes four conditions needed to support leaders in understanding the practices of LMS adoption and transition. First, at the top of the inverted triangle are professional learning required for members with regard to their roles as committee members in terms of the practices of leadership to facilitate a LMS transition process. Professional learning opportunities on the role of committee, the process of LMS transition, and education on how a LMS functions in the online learning environment would help leaders understand their role in decision making, as well as help them to make sound decisions regarding educational technology.

Second, the role of committee members, speaks to the role of committee members as leaders in the process, as well as the role of committee as situated in the decision-making process. Professional learning opportunities would increase this knowledge which would foster a more engaged and informed transition process.

Third, knowledge of educational technology whereby those who are in positions of authority to make recommendations to senior leadership on educational technology initiatives must have knowledge about educational technology. The leaders represented on ACET must have knowledge about the technology, how students learn using technology, and how instructors can effectively teach with it in order to make well informed decisions.

Fourth, policy that informs practice in the decision-making process are needed so that clear policies are created and followed within the institution as pertaining to educational technology decisions, including LMS transition and implementation. Given the institution relies so heavily on educational technology, it is imperative for clear policies to be in place that guide the process.

These four conditions support technology decision making committees in making informed decisions regarding educational technology initiatives. Each of the four conditions play a role in preparing committee members to be able to make good decisions and to lead the transition to a new LMS.

Chapter Summary

This chapter discussed my findings in relation to the literature, my assumptions, and a model for LMS transition. The role of leaders in LMS transition and implementation was explored, as well as the importance of communication, conditions that support and hinder the

LMS transition process, and how leaders understand practices of leadership when involved in the process. In Chapter Six, I will discuss implications for practices and directions for future research.

CHAPTER SIX: CONCLUSION

The final chapter of my dissertation provides a summary of the study on the leadership factors influencing Learning Management System (LMS) transition and implementation in a rural community college context. Based on my reflection of the research experience, I provide a description of the successes and challenges in conducting the study. Furthermore, implications for practice are shared along with directions for future research.

Study Summary

The purpose of my study was to explore the type of leadership involved in the adoption and implementation of a LMS within the community college in a rural western Canadian context. Using a qualitative case study, I investigated the research question as a means to gain a greater understanding of the LMS transition and implementation process: How do leaders in a rural community college in western Canada understand practices of leadership when implementing LMSs?

From the study, five key findings were identified in relation to how leaders understand practices of leadership when implementing a LMS. First, the level of participant involvement directly influences the LMS transition process. This was highlighted by faculty experiences during the decision-making and implementation processes. Neither the leaders, nor the faculty, were clear on their roles within the process, and were therefore somewhat involved in the process. The conceptualizations of both the leaders and the faculty about their roles in the process directly impacted the success of the transition.

Second, there is a relationship between faculty involvement in technology decision-making and the level of engagement in the LMS transition process. Participating faculty felt they were uninvolved and excluded from the decision-making process, which led to feelings of

anxiety and trepidation towards making the transition. Without clearly established policies and procedures that inform the practice of LMS transition, the process may become unclear and disorganized. There is a need for educational technology leaders to have a clearly defined process that enables the LMS process to be participatory and collaborative.

Third, familiarity with LMSs, training, and preparedness to use a new LMS are instrumental in the transition process. This was highlighted in how faculty reported having inadequate time to use the new LMS prior to the start of teaching, and a short transition time were presented as obstacles to success. However, availability of training through the Centre for Teaching and Learning, and prior experience using a LMS, strongly influenced faculty perceptions of using the new platform and their competency levels. A strong team who are able to provide necessary training and supports to faculty during LMS transition is integral to LMS transition success.

Fourth, there is a need for open communication amongst stakeholders, as well as the importance of involving various levels of stakeholders at each stage of the process. The role of committee should be explored such that committee members are aware of their roles, and have opportunity to provide input at all stages of the process.

Fifth, is the importance of leadership in the LMS transition process. While there was evidence of informal leadership by faculty who were piloting the new platform, there was a clear lack of leadership at the committee level. There were three underlying factors that impacted leaders understanding of practices of leadership when implementing LMSs. First, without an educational technology background, leaders on the ACET did not understand their roles, nor did the policies and procedures on educational technology implementation clearly define the practice of LMS transition and implementation. Second, the gap between what leaders know in theory in

comparison to what they know in practice impacts their ability to lead education technology initiatives. Third, as described by de Boer and Goedegebuure (2009), leaders have the ability to influence and set direction to guide people to follow them or to work collectively towards institutional goals. However, leaders had limited understanding of the impact of implementing a new LMS during a time of recent change, nor an understanding of their roles in inspiring faculty to participate in educational technology initiative.

Successes and Challenges of Conducting the Study

One of the most important successes of my study involved the participants. During both questionnaires, participants openly shared their opinions on the process. I appreciated the level of involvement and their willingness to participate in data collection. While there were less participants in phase two, I believe the study had the substance required to develop its credibility, dependability, and transferability. A challenge was presented in phase two given it was scheduled at the beginning of the COVID-19 pandemic when faculty and leaders were further dispersed, were preparing for the transition to working from home, and were supporting students with the transition. This precipitated the decision to change the phase two data collection method from a focus group interview to an email questionnaire. This permitted greater participation in this second phase as it allowed participants to complete the questionnaire at their convenience without the expectation of participating in a live interview.

Despite these challenges, I now have a baseline understanding of how leaders in this rural community college context understand practices of leadership in their LMS transition and implementation. That is, leaders involved in technology implementation decision-making committees need to increase their understanding of both leadership and technology adoption

practices. My case study has broadened understanding of the complexities of the process and can be used as a baseline for practice.

Implications for Practice

From a practical perspective, my study has provided an overview of the leaders' understanding of the process of LMS integration and implementation in one rural community college in the western Canadian context. While the findings could have an immediate impact in the institutional context that was used as the case study, other post-secondary educational institutions may be able to utilize the following three implications for practice: 1) committee members understanding of roles and responsibilities as leaders, 2) role of teaching and learning centres, and 3) policy that informs practice.

First, there is need for stakeholder involvement in a LMS transition and implementation process from decision-making to implementation. It is important to have stakeholder representation from various levels of the institution, including faculty and students, who are users of the technology, to be engaged in such a decision-making committee. All stakeholders involved in such an educational technology leadership committee need to have understanding of their roles and responsibilities in terms of the decision-making process, as well the need for ongoing communication with their stakeholder groups. Communication from the various groups is needed to help inform the process from various levels of the organization who are most impacted by the result such that leadership is able to make informed decisions, and all stakeholders have an investment in the process.

Second, there is an important role for teaching and learning centres in support of education technology initiatives within post-secondary education institutions. Such centres often are responsible for providing professional development opportunities for faculty involved in

migrating to a new LMS. Through the decision-making process by the leadership committee, as well as in the implementation, educational technologists and instructional designers from the teaching and learning centres can provide direction to the leadership committee in terms of how a technology functions, as well as the process of implementation. While leaders are given authority to make final decisions with regard to technology, these experts (e.g., educational technologists and instructional designers) who work in teaching and learning centres can play an important role in the process by ensuring faculty receive adequate professional development and support to help ensure courses are ready for delivery.

Third, institutions need to develop policy that clearly informs the practice of implementation of a new educational technology (e.g., LMS to support teaching and learning). The focus of the policy needs to be on the role of the technology committee in the decision-making process, as well as clearly identify the inclusion of other stakeholders (e.g., faculty, teaching and learning centre staff, senior leadership, and students), and articulate their roles in the process. Particular detail needs to be paid to who should be included on such committees and the respective roles of committee members to ensure proper communication that informs the decision-making process and adequate training prior to implementation.

Directions for Future Research

Three areas of future research have emerged from my study. Each are important to understanding a LMS transition and implementation process in post-secondary education.

First, it is important to explore the role of committee in determining educational technology initiatives. A case study would allow an investigation of the following questions: 1) Who should comprise the technology committee; 2) What is the role of each stakeholder; and 3) What policies and procedures should be put in place to support the adoption of educational

technology? Such a study could be conducted to include other rural community colleges in western Canada. This would provide more information and greater understanding of the technology transition process within various contexts.

Second, the question of the types of professional development needed for individuals on educational technology committees needs to be further explored. A case study could be used whereby data could be collected in post-secondary educational institutions across the province. This can occur by circulating a questionnaire to members of the provincial online teaching and learning committee. This study can explore the professional development the leaders require related to teaching and learning in technology-enhanced learning environments when they serve on leadership committees tasked with making decisions about educational technology.

Third, leadership development is another area of study. As demonstrated in research (e.g., Inman, 2009; Petrie, 2014), there is a discrepancy between what leaders know in theory and what they are able to aspire to in practice. A case study with ACET leaders could be conducted to examine the nature of the professional development they have received given their experience with the LMS decision-making and implementation process. This individual interview would provide an avenue for them to indicate the type of professional development they would like to improve their practice surrounding educational technology implementation.

Conclusion

My case study of how leaders understand practices of leadership when implementing LMSs revealed challenges and complexities of implementation within a rural community college context in western Canada. From the study, it became evident that leaders involved in technology implementation decision-making committees need to understand both leadership and technology adoption practices. It also highlighted the importance of professional

learning for leaders who are involved in making decisions about education technology. Individuals who have the decision-making power to affect educational technological change, also need the tools to make sound decisions and have the ability to effectively lead educational change initiatives. It is important to address the gap between what leaders know about leadership theory and how it is applied when addressing educational technology change and implementation.

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Appendix A: Questionnaire #1

Thank you for volunteering to complete this questionnaire. Your input will be beneficial in determining the leadership factors that influence educational technology transition and implementation, particularly as it relates to the adoption of a Learning Management System. The purpose of this questionnaire is to gain insight into the practice of technology transition and implementation within this rural community college context.

All answers are anonymous.

1. Which of the following categories of employee are you?
 - a. Management
 - b. Faculty
2. How long have you worked at the institution?
 - a. <5 years
 - b. 6-10 years
 - c. 11-15 years
 - d. 16+
3. How involved are you in the LMS transition process?
 - a. Very Involved
 - b. Somewhat Involved
 - c. Not involved
4. What factors have influenced your level of involvement in the LMS transition process at the institution?
5. How prepared are you to use the LMS?
 - a. Very Prepared

b. Somewhat Prepared

c. Not Prepared

6. What factors have impacted your level of preparation to use the LMS?
7. What are the major obstacles affecting your use of the new LMS? Why does this obstacle exist?
8. What role did the leaders in the institution play on the LMS selection and implementation?
9. Is there something different the leaders in the institution could have done to impact the LMS transition process?
10. What communication strategies were employed regarding the LMS transition process?

Appendix B: Email Questionnaire #2 Protocol and Questions

This study explores the leadership factors that influence educational technology transition and implementation, particularly as it relates to the adoption of a Learning Management System. The purpose of this questionnaire is to gain insight into the practice of technology transition and implementation within this rural community college context.

This questionnaire should take no longer than one hour. All responses will be kept confidential. This means none of the information you provide will be shared publicly, and will avoid any indication of your identity.

The University of Calgary Conjoint Faculties Research Ethics Board has approved this study (REB19-0723)

Please know you do not have to answer anything you do not wish to answer and you may skip questions.

Please reply to this email with “I have read the informed consent and agree”.

Date:

Questions for the email interview will be open-ended.

1. Describe your role as it relates to LMS transition and implementation in the community college?
2. Have you always had this role, or has your role(s) changed?
3. How long have you been in this role?
4. Can you please describe for me the process of LMS transition and implementation at this institution?

5. Describe to me your level of competence using LMSs.
6. What factors within the institution contribute to your level of competence using LMSs?
7. Did you receive training on how to use this LMS? If so, what training did you receive?
8. What obstacles have you experienced in the LMS transition process? How have you overcome these obstacles?
9. What do you think could be done to help other faculty who have not yet adopted this LMS to overcome these barriers?
10. What communication strategies were used in the LMS transition and implementation process?
11. What role did the leaders in the institution play on the LMS selection and implementation?
12. Is there something different the leaders in the institution could have done to impact the LMS transition process?