2018

Understanding Video Adoption: An Insider Action Researcher's Case Study Using the Concerns-Based Adoption Model to Facilitate a Community of Inquiry in Online Courses

Emily G. Robertson

Understanding Video Adoption: An Insider Action Researcher's Case Study Using the Concerns-Based Adoption Model to Facilitate a Community of Inquiry in Online Courses

By
Emily G. Robertson

A Dissertation Submitted to the
Gardner-Webb University School of Education
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

Gardner-Webb University
2018

Approval Page

This dissertation was submitted by Emily G. Robertson under the direction of the persons listed below. It was submitted to the Gardner-Webb University School of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Gardner-Webb University.

Sydney K. Brown Ph.D. Committee Chair	Date
Michelle S. Bennett, Ed.D. Committee Member	Date
Sara Newell, Ed.D. Committee Member	Date
Sydney K. Brown, Ph.D. Dean of the Gayle Bolt Price School of Graduate Studies	Date

Acknowledgements

Never in my wildest dreams could I have imagined the amount of change I would experience while writing this dissertation. The irony of writing about change and experiencing change at the same time has not been lost on me, and I am grateful for the lessons I have learned in the process. Change itself is a process. Change is personal. It has stretched me and challenged me in ways I could never have imagined, and I am better for it.

I am sincerely appreciative to Dr. Gene Hall for his guidance, training, and encouragement throughout my CBAM journey. Thank you also to Dr. Kay Uchiyama who served as my second LoU Rater and to all of those at the American Institutes of Research who assisted me.

Dr. Sydney K. Brown, my colleague, instructor, coach, and friend. I am grateful for your encouragement, guidance, and love. You are a role model as a professional and as a mother. I consider it a privilege to have been able to share our change journeys together over so many years.

I am also thankful to Drs. Michelle Bennett and Sara Newell for their time and contributions to this study. Your feedback challenged me to be a better researcher and writer. I look forward to our future collaborations.

For those who encouraged me to pursue this dream, for those who stood with me throughout the journey, and those who stand with me now, I thank you. I am especially thankful to my Gardner-Webb colleagues and Eastside community who prayed for, encouraged, and celebrated with me … one sentence at a time.

Thank you to the amazing LZ cohort of women: Dr. Ginger Black, Katrissa Fisher, LaShay Conley, and Shamona Fernanders. What a sincere privilege it has been to

learn and grow with you all.

To those who taught me lessons in change management and to embrace eating the tangerine, I thank you. Your friendship will be an indelible bookmark in my life.

Jessica Herndon, you are "my person." Thank you for being my cheerleader, collaborator, and confidant. I hope you know how very precious you are to me.

Dr. Natalie Bishop, whose friendship and support is without equal, thank you for walking this journey with me from the very start. I am honored to call you colleague and friend. To say I could not have done this without you is an understatement.
#dissertationstrong #nowomanleftbehind #nomorecardboardhats #accountabilitypartners

To my "core" Becca Sisk and Mamie Neely, I am beyond grateful for our friendship. I cannot imagine my life without you two. Thank you for continually reminding me who I am, where my identity comes from, and to whom I belong. A cord of three strands is not quickly broken (Ecclesiastes 4:12).

Finally, I am indebted to my family for their encouragement, support, and sacrifice over the past 4 years.

Brian Robertson, thank you for encouraging me from the beginning that I could earn my doctorate and be a mom at the same time, and for reminding me I was up for the challenge.

Wanda Robertson, I could not have finished without your help. Your loving spirit of service has been a blessing to me. Thank you for loving my boys so deeply and never making me feel guilty for pursuing my dream.

Courtney Greene, thank you for all the late night talks encouraging me to not to give up and for celebrating the small and big accomplishments with me.

To my parents, John and Gale Greene, thank you for instilling a love of learning and tenacious grit. Your encouraging words along this journey have meant the world to me.

For my precious sons, who have endured their own changes and sacrifices through this process, I love you more than you know. As you experience change in your own life, may you always know the One who is constant and unchanging.

Dr. Mommy has finally finished her big paper.

Abstract

Understanding Video Adoption: An Insider Action Researcher's Case Study Using the Concerns-Based Adoption Model to Facilitate a Community of Inquiry in Online Courses. Robertson, Emily G., 2018: Dissertation, Gardner-Webb University, CBAM/ Stage of Concern (SoC)/Levels of Use (LoU)/Community of Inquiry (CoI)/Video Adoption/Online Education

This research explored how an insider change agent constructs a holistic understanding of a user's adoption of video to facilitate the change adoption process and establish a community of inquiry in online courses. The case study was guided by tenets of change theory and constructivism emphasizing the personal and collaborative experience of the change adoption process. The Concerns-Based Adoption Model (CBAM) constructs of Stages of Concern (SoC), Levels of Use (LoU) and Innovation Configuration (IC), along with the Community of Inquiry (CoI) model elements of presence aligned with the theoretical frameworks and guided data collection and analysis.

Using five iterative action research cycles of plan, act, observe, and reflect, qualitative data descriptions were drawn from quantitative surveys, focused interviews, direct observations, and participant and researcher reflections. Participant profiles were constructed using concerns profiles, levels of use rating, and implementation fidelity.

The analysis of data findings were based on collaborative discussions between the researcher and participants and resulted in the development of individualized action plans and targeted interventions for each participant and the researcher.

Table of Contents

Preface

I approach my work as an advocate and subscriber of lifelong learning and hold the belief that everyone can learn and grow. In my interactions with faculty instructors, I have observed some embracing video in their online courses, while others avoid it altogether. Given the ubiquitous number of resources and training available on campus, it surprised me that some online courses were completely void of any video presence. In my role as a technology trainer, I concentrated on providing instructional tutorials and step-by-step directions, yet my interactions with instructors often assumed a more personal focus than a technical one.

Two specific faculty interactions stand out in my mind. The first is with an instructor who embraced the concept of video in his/her online courses but struggled with the skill set. This resulted in a conflict between desiring to create an engaging course but having the fear of looking incompetent among faculty peers and enrolled students. The second instructor was publicly resistant to transitioning online, and any suggested technology innovation to close the gap, such as video, was met with great emotion. Rhetoric and resistance was a shield to something much more personal. The adoption of video represented a loss which needed to be mourned. It was not the typical pitting of online versus face-to-face but simply an acceptance of change. This change would fundamentally require a shift in both pedagogy and behavior. It did not take place overnight, but gradually, over time, new practices and new innovations were adopted and implemented. Variations of the same experience were repeated with other instructors, and I began to wonder if use was more complex than simply adoption or resistance.

Admittedly, I have a bias against those who choose not to incorporate any type of video in their online courses. This bias is reactionary, because it challenges my belief in what an ideal online course should look like. But beyond the superficial reaction, is a deep curiosity of why. Is an instructor's decision to exclude video purposeful? Do they lack the necessary technical skill set? Are they embarrassed or fearful of looking incompetent? Does their belief in incorporating video in online courses align with my own, but they do not have the time or support to effectively implement technology? What is the barrier that exists, and what can I do to help alleviate that barrier? These questions spurred on my curiosity to understand my site beyond the labels of user or nonuser. It is this very curiosity about change and human behavior that led me to pursue this research study.

Chapter 1: Introduction

Introduction

Higher education institutions continue to experience change as educational delivery shifts from traditional brick-and-mortar classrooms into virtual environments. According to Allen and Seaman (2014), "the increase from 1.6 million students taking at least one online course in fall 2002 to 7.1 million for fall 2012 represents a compound annual growth rate of 16.1 percent" (p. 15). Of those 7.1 million online students, data suggests 33.5% of higher education students are taking at least one online course (Allen & Seaman, 2014). As institutions strategize to remain competitive in the market by offering course content online, faculty instructors must also shift in their understanding of instruction delivery and online best practices. One of the biggest reported challenges is addressing student needs for interaction, engagement, and a sense of community within a traditionally asynchronous, text-based online classroom (Borup, West, & Graham, 2011; Borup, West, Thomas, & Graham, 2014). This study explored existing instructor concerns, behaviors, and configurations of video adoption in online courses and describes how video is currently being utilized to establish a community of inquiry.

Statement of the Problem

Research suggests creating a community of inquiry is one way to engage learners and facilitate learning in an online course (Garrison, Anderson, & Archer, 2000). In their seminal article, Garrison et al. (2000) believed a community of inquiry can exist only when all three essential elements are present: cognitive presence, social presence, and teaching presence. In addition to the Learning Management System (LMS), a software system where courses are virtually hosted and administered online, instructors must utilize other web technologies to help establish these elements of presence. Video is one recommended technology innovation used across a wide array of industries, including education (Borup et al., 2014; Clark, Strudler, & Grove, 2015). Video development can be attributed to an increase in internet connections and infrastructure (Cha & Chan-Olmsted, 2012), availability and affordability of video hardware and editing software (Kaltura Report, 2017), and an increase in the perceived value of communicating digitally (Branigan, 2005). For some, video is an expected component of an online course (DeCesare, 2014). In Smith, Caruso, and Kim's (2010) study, 80.7% of students (N=36,259) responded positively to "learning through listening to audio or watching video content" (p. 90), compared to the 45.3% of students (N=36,261) who "like to learn through text-based conversations over email, instant messaging, and text messaging" (p. 90). A smaller percentage, 26.9% students (N=35,996) reported a preference for learning by creating audio or video content. Institutions agree video has a major positive impact on students: "93% [respondents] report that using video results in increased satisfaction of students with their learning experience. 85% believe it increases student achievements" (Kaltura Report, 2017, p. 16).

In contrast to reports indicating a student preference for multimedia learning, observational findings reflect a very different learning environment. Research conducted by Jaggars, Edgecombe, and Stacey (2013) found online courses tended to be heavily text based and lacked interactive technologies. Historically, distance education has fluctuated between written correspondence and audio delivery depending on the technology innovations available at the time (Casey, 2008; Syed, 2010). With the initial migration to online environments, the pendulum once again shifted to a text-based system. Much of the early computer-mediated communication was exchanged through written text in discussion forums, instant messaging, and email (Picciano, 2002); however, despite technology advances that have ushered distance education into contemporary online delivery with collaborative communication tools such as audio and video software and hardware, web-conferencing systems, virtual reality, and social media, adoption of these technologies remains low (Smith et al., 2010). Although the delivery mechanism has changed from the United States postal system to email or learning management systems, online courses still resemble text-based correspondence courses dating back over 2 centuries ago.

This contradiction presents a challenge to change agents attempting to recommend changes in practice and the adoption of technologies to address student needs in online courses. The concept of change in technology, and in education, is not a new one. Technology innovations have developed alongside distance education since the early 19th century. As newly developed innovations replace existing innovations, instructors are continually challenged to change and adapt. Technology innovations have a long history of being hailed as silver bullets, designed to resolve any possible complication, only to be met with resistance, infrequent adoption, and a reversion to former, and more familiar, practice (Cuban, 1986). Instructor responses towards new innovations range from innovators and early adopters to late adopters and even resisters.

Hall and Hord (2015) asserted that simply introducing a new approach does not guarantee every organizational member will adopt and implement the change. "Even when the change is introduced to every member of the organization at the same time, the rate of learning to make the change and of developing skill and competence in using it will vary individually" (Hall & Hord, 2015, p. 12). To achieve the goal of an engaging and interactive online learning experience, instructors must adopt and implement both a pedagogical attitude towards online design and delivery and technical behaviors that support such a desired outcome. When adoption or sustained implementation does not occur, questions and assumptions quickly arise. Is the problem with the innovation the adopter, the process, or the facilitator? Tracking the number of innovation adopters only does not provide a comprehensive understanding of how an innovation is being implemented or what interventions could be used to sustain implementation. Likewise, tracking the number of nonadopters does not provide change agents with sufficient information for why an innovation is not being adopted.

Change agents are faced with the problem of moving users from nonuse to adoption, from adoption to sustained use, and from sustained use to a focus on outcomes and fidelity. This challenge is metaphorically described as the Implementation Bridge (Hall & Hord, 2015). In order to move users across the Implementation Bridge, interventions must be provided. Given that change happens on the individual level, before it can be said to have occurred at the organizational level (Hall & Hord, 2015), further research is necessary to construct an understanding of why individual faculty adopt or reject technology innovations such as video in online courses. Change agents must develop a holistic understanding of an adopter's existing concerns, behaviors, and implementation of technology in order to support them in the change process from the correspondence model to an interactive community of inquiry. Based on this understanding, change agents can develop actionable interventions to alleviate concerns, support the degree of use, and facilitate the overall change adoption process.

Purpose of the Study

The purpose of this study was to explore the change process of individual instructors at the selected site and to construct a holistic understanding as it relates to their adoption of video as an innovation in their online courses. A holistic understanding includes instructor concerns associated with the innovation, innovation level of use, and fidelity of implementation. The data collected were used to identify potential barriers towards adoption and identify appropriate interventions towards sustained innovation implementation.

A second purpose guiding this study was to document the action research process between the insider researcher and participants as well as personal reflections and planned action steps, based on the collected data findings and collaborative analyses. Fostering an environment of faculty empowerment and ownership supported innovation adoption and encouraged sustained implementation.

Theoretical Foundations

Two guiding theories make up the theoretical foundation of this research study: change theory and constructivism. Change theory informs how change and the individual experiencing the change are viewed, approached, and analyzed. Constructivism guides how learning is constructed throughout the study. This theory is demonstrated through the review of literature, methodology selection, and intention to collaborate and reflect with others during the data gathering and analysis process.

Change theory. Kurt Lewin believed, “you cannot understand a system until you try to change it” (The psychology book, 2012, p. 8). At the center of change theory is the premise that in order for change to occur, one must understand all facets including the individuals, the context, and the change innovation itself. Understanding change also means understanding human behavior. Bandura (1977) addressed this concept in his social cognitive theory of behavior. A foundational construct of the social cognitive theory is the belief that individuals control their own behavior and choices. Researcher attempts to understand and explain human behavior, and the choices they make to adopt an innovation or not, has resulted in a series of change process theories, perspectives, approaches, and models. Consequently, there is not one single change model or process, but instead, a range from which to explore influencing factors, potential barriers, impacting concerns, types of responses, and recommended practices for guiding the change process.

Lewin (1947) introduced a theory of change represented by a three-step model of unfreezing, movement, and refreezing. His work also explored what he coined as the force field analysis, which referred to the external forces which either drive or hinder change (Lewin, 1947). Rogers (1962) focused his work on the five stages an individual experiences during the innovation-decision process. His theory also identified and described adopter types and their characteristics. While Rogers's (1962) Diffusion of Innovations addressed factors that influenced the rate of adoption and length of time required, Zaltman and Duncan's (1977) Strategies of Planned Change examined barriers that negatively impact adoption. Influenced by the work of Fuller (1969), the Concerns-Based Adoption Model (CBAM; Hall, Wallace, & Dossett, 1973) provided a framework to examine the complex and personal side of change (Hall & Hord, 2015). The model explores three dimensions of a user's profile and is used to predict probable behaviors (George, Hall, & Stiegelbauer, 2006) and recommend appropriate interventions to support implementation (Hall & Hord, 2015). As the selected framework for this study, the model is discussed in more detail in the following section, literature review, and methodology. Other theories and models, such as Havelock's (1973) Linkage Model and Kotter's (1996) Eight-Step Model, look at the change process from the perspective of the those trying to facilitate and implement change at their site. Both the Technology Adoption Model (Davis, Bagozzi, & Warshaw, 1989) and the Unified Theory of

Acceptance and Use of Technology Model (Venkatesh, Morris, Davis, & Davis, 2003) specifically examine change and the adoption of information technology. Finally, the Conditions of Change model (Ely, 1990) examines external environmental factors that impact change. The Transtheoretical Model of Change depicts the stages of change an individual progresses through while addressing related concepts such as decision-making and self-efficacy (Prochaska, Redding, & Evers, 2008).

A comprehensive review of the literature on change theory models reveals two consistent themes: change is a process and change is personal (Hall & Hord, 2015).

Change is a process. A central theme in CBAM is, "change is a process, not an event" (Hall & Hord, 2015, p. 10). Fullan (1993) asserted a similar premise, stating "change is a journey, not a blueprint" (p. 21). These two quotations reflect a belief that change is nonlinear and complex. Change is not a one-time event. In fact, Hall and Hord (2015) asserted change may take up to 3-5 years depending on the organizational context. In other words, change does not happen overnight. Instead, Hall (2010) suggested, "there is a gradual process of trial and error as each implementer learns how to use the new tool, process, or function" (p. 233). Through this process, the individual moves from being a nonuser to a "competent and confident innovation user" (p. 234). As individuals progress through the change process, change agents must also respond accordingly and be adaptive to how the change process unfolds (Hall & Hord, 1987).

Change is personal. Not only do change agents need to understand the change process as it unfolds, they must also understand the individual. Hall and Hord (1987) suggested the personal side of change is often ignored in the change process. When personal feelings and perceptions are disregarded, Hall (2010) suggested implementation may fail or be prolonged unnecessarily. As a result, CBAM was designed to help change facilitators understand the personal side of the change process and the special needs and concerns of each individual (George et al., 2006). Each individual experiences, perceives, and responds to change differently. According to Hall and Hord (2015), "each person may differ measurably in terms of their understanding and skill to implement a particular change (LoU), willingness to change (SoC), and achieving fidelity to the developer's vision (IC)" (p. 286). Consequently, each individual's profile and recommended interventions will be distinct to the individual.

As the change process unfolds for each individual, it is not conducted in isolation nor does it hold a predetermined outcome. Instead, the change process includes constructing understanding along the way, through the sharing of new knowledge with others. This belief aligns with the second theoretical framework, constructivism.

Constructivism. Constructivism is "the belief that knowledge is made up largely of social interpretations rather than awareness of an external reality" (Stake, 1995, p. 170). Elements of constructivism are found throughout the study including CBAM, CoI, and methodology. The CoI framework used to address presence in online courses is also based on constructivist theory. This belief suggests that learning and constructing meaning occurs when individuals interact with each other and their environment (Hord & Roussin, 2013). The constructivist view emphasizes understanding the individual experience, their multifaceted perspectives, and the context from which meaning derives (Creswell, 2014). This approach relies on significant interaction between the researcher and the participants and therefore guides the methodological framework and data analysis of this study. Hord and Roussin (2013) agreed, noting, "implementing a change has greater success when it is guided through social interaction" (p. 3).

Just as knowledge is constructed, one's conceptual framework is similarly constructed and is influenced by personal interest, topical research, and theoretical frameworks (Ravitch & Riggan, 2012). The researcher's conceptual framework has been constructed through personal experience; institutional position; and reflection of assumptions, biases, and beliefs (Ravitch & Riggan, 2012). The conceptual framework has also been shaped by a comprehensive literature review and selected methodological approaches. The conceptual framework specific to this study is discussed in the following section.

Conceptual Framework

The conceptual framework guiding this study includes several models: CBAM, the Community of Inquiry Model (CoI), and action research. In contrast to other research studies where the conceptual frameworks discussed in the literature review guide the methodology, in this study, the conceptual frameworks and methodological approaches are interwoven together. CBAM includes three distinct dimensions (Stages of Concern [SoC], Levels of Use [LoU], and Innovation Configuration [IC]) as well as underlying tenets about how change and the individual are to be regarded (Hall & Hord, 2015). The model establishes the foundation from which change theory is viewed and provides the lens and methodological tool from which data were collected and analyzed.

The CoI model provides a framework from which to understand best practices for student learning and engagement to occur in an online environment. The model is used to substantiate the need for adopted technology innovations in order to address identified gaps in establishing elements of presence in an online environment. The CoI framework aligns with the theoretical framework of constructivism and the belief that knowledge is co-constructed (Annand, 2011). This belief suggests that learning occurs in a communal, or social, manner where interaction, critical discourse, and inquiry occur between the instructor and learners, between learner and learner, and between the learner and the content (Garrison et al., 2000). For the purposes of this study, the CoI was used to inform the CBAM innovation configuration fidelity of video use in online courses.

Hall and Hord (2015) emphasized a tenet of CBAM is, “change is a process, not an event” (p. 10). While the CBAM model explores the dimensions of affect, behavior, and fidelity, it does not capture the process between the change agent and adopter. Therefore, the action research based methodology was selected as an additional framework to guide the process of collecting, analyzing, and reflecting on data findings within a collaborative relationship between the researcher and participant(s).

Significance of the Study

The significance of this study had several possible implications. The first was to obtain a more comprehensive understanding of individual instructor’s concerns, behaviors, and configuration of the innovation. The data collected through this study were used to provide targeted interventions to help aid adoption and sustained implementation. Second, the data collected were used to shape the existing configurations of video found in the site’s online courses. This information was then used to identify gaps in establishing presence within the CoI and form the foundation of what the ideal innovation configuration should look like at the institution. This study also resulted in a documented process of how an insider researcher uses CBAM and action research to assist faculty instructors with innovation adoption and sustained implementation at their site. This process may be applied to the adoption of other innovations or shared with change agent colleagues at other institutions. Finally, this study contributes to the body of literature on using CBAM to support the change adoption process, CoI to improve student learning in online courses, and action research in education.

Research and Guiding Questions

A single, overarching research question guided this study to provide a more comprehensive understanding of the site, innovation, change process, and adopter types. Three additional guiding questions, stemming from the main research question, were also used.

RQ. How can adoption and implementation of video in online courses on a university campus be described?

GQ1: How can users' Stage of Concern adopting and implementing video in online courses be described?

GQ2: How can users' Level of Use adopting and implementing video in online courses be described?

GQ3: How can users' fidelity of creating a community of inquiry through adopting and implementing video in online courses be described?

Definition of Terms

For the purpose of this dissertation, key terms are defined.

Action research. Action research is an iterative, systematic, collaborative, and reflective inquiry to everyday problem-solving (Reason & Bradbury, 2008; Stringer, 2007) involving both the practitioner researcher and participatory organization stakeholders in the process. Although visual models may vary, the general action research process can be explained as an iterative spiral of action cycles of plan, act, observe, and reflect (Herr & Anderson, 2015).

Adopter. An adopter is the term assigned to the individual adopting an innovation. Adopters can be further classified into adopter categories, which are based on characteristics and relative time when an innovation is adopted. The classification of adopter categories includes innovators, early adopters, early majority, late majority, and laggards (Rogers, 2003).

Adoption. The term adoption refers to a user's decision to "make full use of an innovation as the best course of action available" (Rogers, 2003, p. 21). Conversely, when a user decides not to adopt an innovation, it is referred to as rejection (Rogers, 2003).

Change agent. A change agent is defined as one who operates "to change the status quo in the change target system such that individuals involved must relearn how to perform their role" (Zaltman & Duncan, 1977, p. 29). Change agents can be internal or external to the system in which they are trying to evoke change (Zaltman & Duncan, 1977). A change agent's status in relation to the system is referred to as either insider or outsider (Rust & Freidus, 2001). In lieu of *change agent*, some literature suggests a naming variation of *change facilitator*, due to its emphasis on the collaborative, supportive, and humanistic nature of the role (Hall & Hord, 2015).

Community of Inquiry (CoI). The Community of Inquiry (CoI) is a conceptual framework comprised of three core, multidimensional elements—social presence, cognitive presence, and teaching presence—that make up a learner's educational experience. The framework is represented in a Venn diagram model as shown in Figure 1, which depicts both distinctive and overlapping, interactive elements. The framework and accompanying model are well-documented in research on how to establish a community of inquiry based on the three elements of presence (Akyol et al., 2009; Garrison & Arbaugh, 2007; Rourke & Kanuka, 2009).

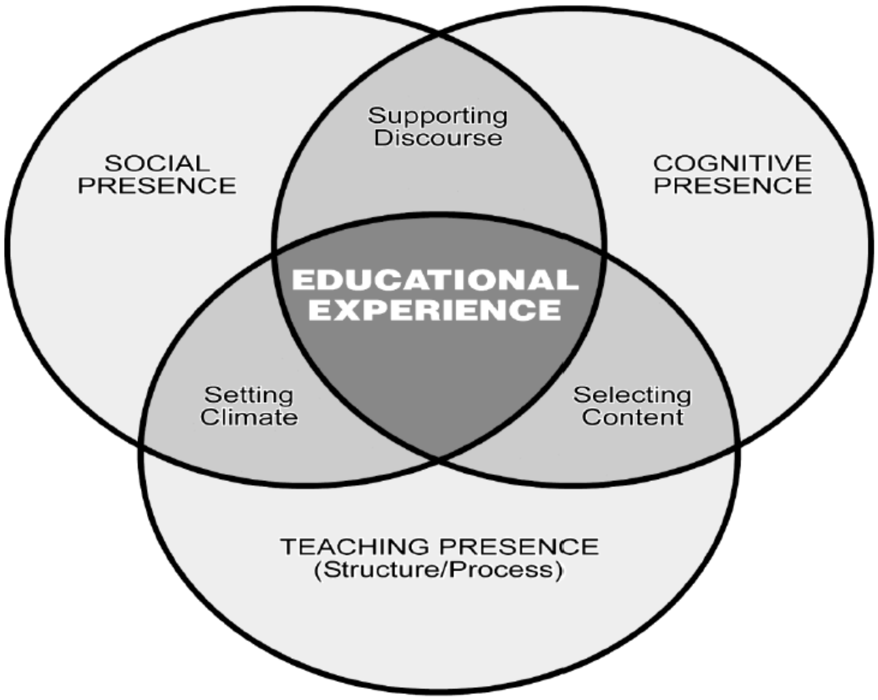


Figure 1. Community of Inquiry Model (Garrison et al., 2000).

Cognitive presence. Cognitive presence is defined as, "the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication" (p. 89). The authors of the Community of Inquiry model suggest that cognitive presence represents the most fundamental to a student's success (Garrison et al., 2000).

Social presence. Social presence is defined as, "the ability of participants in the Community of Inquiry to project their personal characteristics into the community, thereby presenting themselves to the other participants as 'real people'" (Garrison et al., 2000, p. 89).

Teaching presence. Teaching presence is divided into two components: course design and facilitation (Garrison et al., 2000). Course design refers to the "selection, organization, and primary presentation of course content, as well as the design and development of learning activities and assessment" (Garrison et al., p. 90). Facilitation is noted as being a shared responsibility of both the instructor and students.

CBAM. "The Concerns-Based Adoption Model (CBAM) is a conceptual framework that describes, explains, and predicts probable teacher concerns and behaviors through the school change process" (Hord & Roussin, 2013, p. 139). CBAM shown in Figure 2 is comprised of three diagnostic dimensions: Stages of Concern, Levels of Use, and Innovation Configurations. The interrelated dimensions describe both affective (SoC) and behavioral domains (LoU and IC; Hord, Stiegelbauer, Hall, & George, 2006). The three dimensions may be used separately or in combination to measure an individual user's data, compile a user's profile, and identify a user's particular needs (Hall & Hord, 2015): "individual data can be aggregated to assess teams, whole organizations, and/or systems" (p. 286). Based on the data collected from the diagnostic dimensions, change facilitators can support users in the process of change by addressing needs through appropriate interventions (Hord et al., 2006).

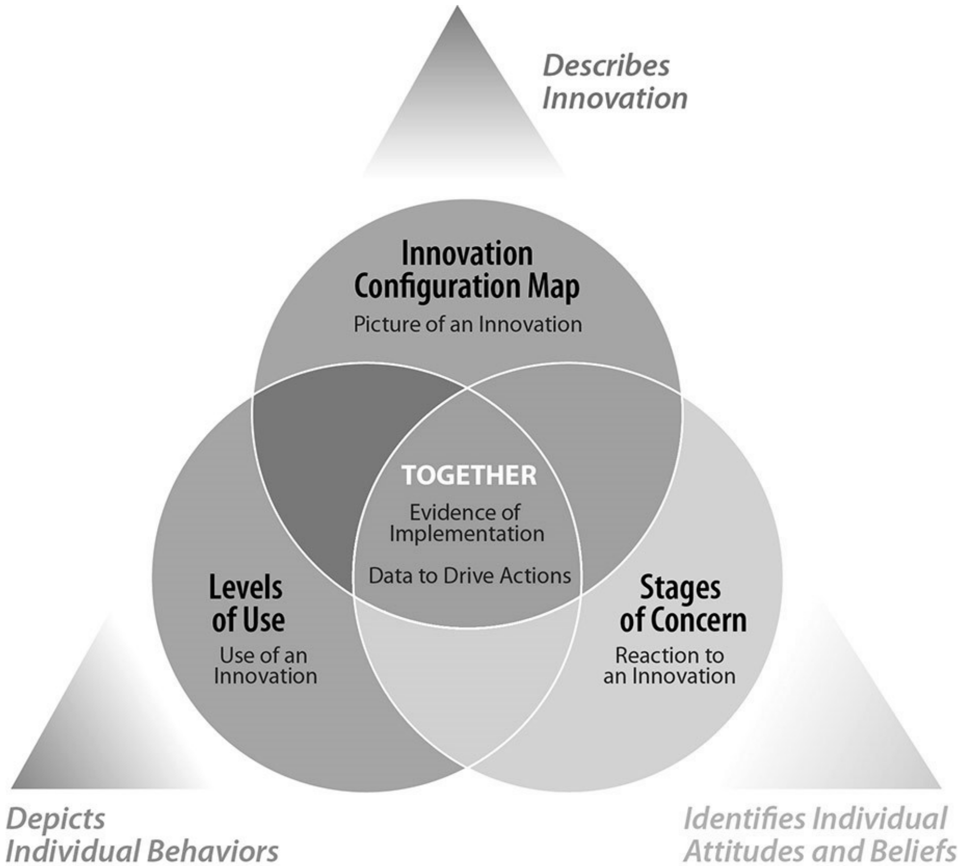


Figure 2. CBAM (American Institutes for Research, 2018).

Stages of Concern (SoC). "Stages of Concern (SoC) addresses the *affective* side of change—people's reactions, feelings, perceptions, and attitudes" (Hall & Hord, 2015, p. 107). Stages of Concern is comprised of four areas: unrelated, self, task, and impact. These areas are further organized into categories or stages of concerns: unconcerned, informational, personal, management, consequence, collaboration, refocusing. A user's concerns profile is determined by the Stages of Concern Questionnaire (SoCQ).

Levels of Use (LoU). In contrast to the Stages of Concern, Levels of Use (LoU) emphasizes "if, and how, the innovation is being used" (Hall & Hord, 2015, p. 107). More specifically, "Levels of Use (LoU) has to do with *behaviors* and portrays *how* people are acting with respect to a specified change" (Hall & Hord, 2015, p 107). For the purposes of obtaining reliable and valid research data, a user's Level of Use behavioral profile is measured through the use of the LoU Focused Interview (Hall & Hord, 2015).

Innovation Configuration (IC). Innovation Configuration refers to the fidelity of an implemented innovation by assessing "different ways an innovation may be implemented, shown along a continuum from ideal implementation or practice [left] to least desirable practice [right]" (Hord & Roussin, 2013, p. 139). The IC describes "the pieces, features, and functions of the innovation that were [are] being used" (Hall & Hord, 2015, p. 289). The process and tool developed to assess the fidelity of an implemented innovation is called Innovation Configuration Mapping (IC Mapping) and Innovation Configuration Map (IC Map) respectively (Hall & Hord, 2015).

Distance education. The Electronic Code of Federal Regulations (2018) defined distance education as

> Distance education means education that uses one or more of the technologies listed … to deliver instruction to students who are separated from the instructor and to support regular and substantive interaction between the students and the instructor, either synchronously or asynchronously. The technologies may include the following: 1). Internet, 2). One-way and two-way transmissions through open broadcast, closed circuit, cable, microwave, broadband lines, fiber optics, satellite, or wireless communications devices, 3). Audio conferencing, and 4). Video cassettes, DVDs, and CD-ROMs used in a course in conjunction with the technologies listed above. (p. 2)

Implementation. Implementation is "the process of fostering the effective use of an innovation on a day-to-day basis" (Surry, 2015, p. 586). The term refers to a distinctive shift between when the user moves from the decision to adopt to the action or actual use of the innovation (Rogers, 2003).

Innovation. The term innovation "broadly refers to any process, product, program or idea that is the focus of a change effort, as seen by the users" (Loucks, Newlove, & Hall, 1975, p. iv). It is also considered in concerns research as, "the generic name given to the object or situation that is the focus of the concerns" (George et al., 2006, p. 7). Using the CBAM diagnostic dimensions, researchers investigate user response or concerns towards an innovation, the behaviors associated with the level of use of the innovation, and the degree to which the innovation resembles the ideal implementation. Length of time does not determine the designation of the term "innovation." According to Hord et al. (2006), "an innovation may be new to the user, or it may be something that has been used for some time" (p. 5). For the purposes of this research study, the term innovation specifically refers to the adoption of video in online courses.

Intervention. An intervention is "an action or event that is planned or unplanned and that influences individuals [users] (either positively or negatively) in the process of change" (Hall & Hord, 2015, p. 27). Concerns-based interventions specifically refer to interventions made in response to a user's SoC profile. In this study, planned interventions were determined by the change facilitator and/or user.

Learning management system (LMS). A learning management system is a platform for instructors and students to share files and multimedia and interact with one another synchronously or asynchronously in the same virtual location (Smith, 2015).

Online. Merriam-Webster Dictionary (2017b) defined online as, "connected to, served by, or available through a system and especially a computer or telecommunications system (such as the Internet)." The term also refers to a learning delivery mode where the majority or all of the content is provided via the Internet, and there is little to no physical seat time required (Allen & Seaman, 2011).

User. The term user refers to the individual who "may or may not be using the innovation at the present time" (Loucks et al., 1975, p. iv). Using the CBAM diagnostic dimensions, researchers determine a user's individual SoC profile, LoU profile, and fidelity of implementation (IC).

Summary

The purpose of this study was to holistically explore and describe the change process of adopting video as an innovation, used to create a community of inquiry in online courses, through the lens of CBAM and action research. The dissertation is organized into five chapters. Chapter 1 introduces the problem statement, purpose of the study, theoretical foundations and conceptual frameworks, and guiding research question. Chapter 2 details the literature reviewed of the major themes guiding this study. Chapter 3 describes the methodology for the study including the methodological approach, research instruments, and role of the researcher. Concerns surrounding validity and reliability are also addressed. Chapter 4 presents the data findings and reflections, while Chapter 5 outlines targeted interventions and recommendations.

Chapter 2: Literature Review

The purpose of this study was to better understand the change process by holistically examining the adoption of video as an innovation in online courses. The following literature review includes research on (a) educational change, (b) distance and online education, (c) community of inquiry framework, (d) video as an online innovation, (e) change adoption models and theories, (f) types of adopters, (g) change agent role, and (h) action research. As several topics discussed in the literature review overlap with the methodology section, the operational process of the Community of Inquiry (CoI) Model, CBAM, change agent role, and action research used during the research process is discussed in more detail in Chapter 3.

Educational Change

The study of change can be found across disciplines, social systems, settings, and cultures. It can be described as a shift or departure in the status quo (Duke, 2004) and elicits a wide range of reactions and responses. Because of its shifting nature, change is considered a complex process in which, "as we attempt to understand change, the world around us is changing. Simultaneously, we, too, are changing … [even] the idea of change itself is subject to change" (Duke, 2004, p. 11). Change can be intentional or it can come without warning. Change can be viewed and embraced as desirable and beneficial, or it can be resisted and regarded as painful and threatening.

One sector where change is consistently observed and carried out is in the educational setting. Specifically, educational change is defined as, "a change intended to alter the goals of education and/or to improve what students are expected to learn, how students are instructed and assessed, and how educational functions are organized, regulated, governed, and financed" (Duke, 2004, p. 31). Fullan (2007) stated change is either imposed on us or voluntarily initiated. In education, for example, change may occur as a result of external influences such as policies, reforms, or developments in the field. Change may also come about to solve an identified need or improve personal practice. According to Fullan (2007), educational change may be observed as change in materials, resources or technologies, teaching approaches or strategies, or beliefs or assumptions. One constant example of change observed throughout decades of educational instruction is the use of technology. Even before computers and the Internet marked the inception of the digital age, educational researchers observed and documented technology innovations and individuals' attitudes and behaviors towards such change. Cuban (1986) summarized this historical pattern:

> Nowhere is this paradox more apparent than in the interplay between the classroom teacher and technology. Since the mid-nineteenth century the classroom has become home to a succession of technologies (e.g., the textbook, chalkboard, radio, film, and television) that have been tailored to the dimensions of classroom practice. Yet the teacher has been singled out as inflexibly resistant to "modern" technology, stubbornly engaging in a closed-door policy toward using new mechanical and automated instructional aids. (p. 2)

Over time, technology innovations have profoundly changed the way in which teaching and learning transpire. The following section walks through the history of distance education, the changes in technology innovations, and the resulting paradigm shift and impact on the pedagogical approach and delivery of education.

Distance Education

A general definition of distance education is, "institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors" (Schlosser & Simonson, 2006, p. 5). Based on this definition, the emphasis is on the physical separation between the student and the instructor and serves as the identified problem that the technology innovation attempts to bridge and solve. In contrast, a contemporary federal regulation offered by the Higher Education Act of 1965 pertaining to higher education eligibility, makes a clear distinction between distance and correspondence courses. The Electronic Code of Federal Regulations (2018) offered a comprehensive definition:

> Distance education means education that uses one or more of the technologies listed … to deliver instruction to students who are separated from the instructor and to support regular and substantive interaction between the students and the instructor, either synchronously or asynchronously. The technologies may include the following: 1). Internet, 2). One-way and two-way transmissions through open broadcast, closed circuit, cable, microwave, broadband lines, fiber optics, satellite, or wireless communications devices, 3). Audio conferencing, and 4). Video cassettes, DVDs, and CD-ROMs are used in a course in conjunction with the technologies listed above. (p. 2)

Distinct from distance education, correspondence courses are defined by the Electronic Code of Federal Regulations (2018) as

> 1). A course provided by an institution under which the institution provides instructional materials, by mail or electronic transmission, including examinations on the materials, to students who are separated from the instructor. 2). Interaction between the instructor and student is limited, is not regular and substantive, and is primarily initiated by the student…. 3). A correspondence course is not distance education. (p. 2)

As technology innovations have changed, physical distance between the providing institution and receiving student has become less of a contributing factor and has been replaced with a focus on interaction. Anderson (2009) succinctly captured the evolutionary impact technology has had on education and suggested those changes should be evident:

> Distance education has always been to a great degree determined by the technologies of the day. This is necessitated given the basic requirement of distance education to be mediated-using some type of technology to span the distance between students, teachers and institutions. As these technologies have developed, distance education has evolved in parallel to support new forms of interaction, pedagogy and support services. To characterize this broad field as limited to one type of technology or pedagogy denies the reality of fundamental changes in our conceptions of knowledge and the ways in which it is constructed by learners and teachers. (p. 111)

Therefore, to fully understand how the delivery of education has shifted with the advancement of technology, one must first retrace the history and evolution of distance education. Furthermore, contemporary distance education should resemble the evolutionary changes in both technology use and pedagogical approach. According to Casey (2008), the phases of distance education can be organized into three distinct generations. The following section describes each generation from early correspondence courses to traditional distance education to contemporary online education and the development towards the fourth generation of mobile e-learning.

First generation distance education. A contemporary definition of a correspondence course is, “a class in which students receive lessons and assignments in the mail or by email and then return completed assignments in order to receive a grade" (Merriam-Webster Dictionary, 2017a). The first correspondence course, a stenography short-hand course developed by Sir Issac Pitman, originated in England in 1837 using the postal service and railway transport (Syed, 2010). Later in 1852, the United States offered a similar training course for secretaries using the postal service to mail assignments and receive their certificate at the successful conclusion of the course (Casey, 2008). By the end of the 19th century, universities began offering college-level courses to a new audience of students: the birth of postsecondary education at a distance (Syed, 2010). Although the use of the postal system and railway allowed educational opportunities to reach a new student population, the delivery mechanism was slow and individualized (Syed, 2010). Furthermore, the lack of real time interaction resulted in more of an independent study model (Anderson, 2009). This would change, however, with the introduction of two mediums with far greater reach and immediacy than that of mail delivery: the second generation of distance education—radio and television broadcasting (Casey, 2008).

Second generation distance education. With the advent of radio broadcasting in the 1920s, institutions granted radio licenses and began offering a hybrid model of instruction. Instructors lectured over the radio, affording students the opportunity to hear their instructor live, while course materials and assignments were still sent via the postal system (Syed, 2010). "Between 1918 and 1946, the Federal Communications Commission (FCC) would grant such licenses to over 200 colleges" (Casey, 2008, p. 46). During this time, radio as an educational medium spread across K-12 and postsecondary institutions. According to Spector and Ren (2015), "by 1947, there were approximately 40 million radio sets in the United States alone" (p. 336). A popular commentator of the time, Kaempffert (1924), envisioned radio being used by the masses:

> Who can help conjuring up a vision of a super radio university educating the world, o[r] a super orchestra bringing out the beauty of Beethoven's Ninth Symphony to millions on both sides of the Atlantic.… Every home has the potentiality of becoming an extension of Carnegie Hall or Harvard University. (p. 768)

Despite Kaempffert's belief in radio, by the 1940s, the use of radio for instructional purposes began to wane, but a new technology was already expanding the delivery of distance education.

The University of Iowa first broadcast courses by television in 1934 (Casey, 2008; Syed, 2010). Although it was estimated by 1947 that there were more than 44,000 television sets in the United States, rapid adoption of television did not occur until the 1950s (Spector & Ren, 2015). The visual component television enabled led to an increased development of instructional films. In 1963, the FCC created the Instructional Television Fixed Service (ITFS) providing institutions a low-cost, subscriber-based system of television channels to broadcast educational courses (Casey, 2008). Instructional films enabled learners to pause, rewind, and repeatedly watch instructional material, thereby increasing the level of interaction (Spector & Ren, 2015).

Despite the significant impact of the innovation of radio and television, up until the latter part of the 20th century, distance education still primarily relied on the postal system for communication and interaction between the student and the instructor. This would all change with the advent of the personal computer, email, and formation of the Internet. This third generation of innovations changed the course of distance education forever, by providing the technology medium and introduction to the concept of online education.

Third generation distance education. Prior to the 1960s, large mainframe computers were colossal processors that took up the size of an entire room. Efforts in miniaturization, such as the development of the microprocessor in 1971 (Casey, 2008), resulted in the evolution from mainframe computers to mini and later microcomputers (Spector & Ren, 2015). With the rapid pace in smaller devices, faster processing speeds, and larger memory capacities, personal computers began to be more accessible and affordable to the general public. Although microcomputers provided new avenues to instructional materials, access to computers was limited and unevenly distributed among schools depending on appropriate funding, infrastructure, training, and support (Spector & Ren, 2015). What catapulted the computer from a stand-alone, personal device to an embedded technology of our modern-day society lies in three significant technological events: (a) ARPANET network, (b) email communication, and (c) the development of HTML and the World Wide Web.

In 1969, the first computer-to-computer transmission was sent at a distance on ARPANET, a network of interconnected university computers (Cerf, 2009). ARPANET was the result of research conducted by the Advanced Research Projects Agency (ARPA) of the Department of Defense (Duncan, 2005). Originally designed as a file-sharing and communications network between scientific researchers, universities, and government agencies, this project would later become the modern day Internet. This successful networking later led to the development of packet-switching (Cerf, 2009), email (Casey, 2008), and TCP/IP protocols (Cerf, 2009). At the same time, Ray Tomlinson wrote a computer program which enabled electronic messages to be transmitted from one computer to another over a computer network (Hafner, 2001). These electronic messages were transmitted over the computer network ARPANET, and "by the early 1970's, three-quarters of all traffic on the Arpanet was email" (Hafner, 2001, p. 1).

As computers continued to join the growing network and transmit files, the need for a common language arose. In 1989, Tim Berners-Lee developed the standards for hypertext markup language (HTML) enabling files and text to be linked (Ifenthaler, Bellin-Mularski, & Mah, 2015). By 1991, this universal language enabled computers to transmit information around the world resulting in the birth of the World Wide Web, conceptualized by Berners-Lee (Casey, 2008; Ifenthaler et al., 2015). Using the HTML language, text, pictures, and videos were hyperlinked and displayed as webpages on programs called browsers (Ifenthaler et al., 2015). The launch of web browsers such as Mosaic, Netscape Navigator, and Microsoft Internet Explorer accelerated the diffusion of internet use for both public and commercial purposes (Hof, 1997; Ifenthaler et al., 2015).

With the availability of networked computers, universal HTML language, and the World Wide Web, a new community platform emerged. Developed at the University of Illinois Urbana campus, the PLATO system was one of the very first online communities. Within this system of capabilities, users were able to virtually meet and share. The resulting offspring later led to the development of learning management systems or virtual learning environments (Ifenthaler et al., 2015; Wooley, 1994). The learning management system provided a new platform for instructors and students to share files and multimedia and interact with one another synchronously or asynchronously in the same virtual location (Smith, 2015).

Distance education and the LMS. With a shift towards a Web-based platform, instruction that was previously limited to brick and mortar locations on the main campus or satellite centers could now extend worldwide. This new, virtual classroom allowed students to access content asynchronously and at times and locations convenient to them (Evans, Haughey, & Murphy, 2008). Beginning in the 1990s, higher education institutions began offering distance learning courses and programs over the Internet (Davis, Carmean, & Wagner, 2009). The first generation LMS was designed to facilitate the move from computer-mediated delivery to a web presence or virtual classroom (Davis et al., 2009; Kroner, 2014). First generation LMSs included basic features such as creating and uploading static content, limited assessment tools, discussion boards, and messaging (Kroner, 2014). Original emphasis was on creating, distributing, and tracking interactions between the user and the system (Davis et al., 2009); but by the early 2000s, second-generation LMSs evolved to incorporate Web 2.0 tools, multimedia, and interactive content (Kroner, 2014). As social networks, gamification, and mobile applications continue to develop, third and fourth LMS generations are speculated to be more socially driven, mobile-friendly, and customizable to the learner preferences (Kroner, 2014).

Today, LMSs are a standard medium to deliver educational content, "with 99% of colleges and universities currently reporting they have an [sp.] LMS in place" (Dahlstrom, Brooks, & Bichsel, 2014, p. 5). There are more than 200 LMS products available ranging from open-source such as Moodle, Canvas, and Sakai, proprietary products, Blackboard Learn, Desire2Learn, and eCollege (Ifenthaler et al., 2015) to in-house or homegrown institutional solutions. The growth in the LMS market is phenomenal. In 2009 (Davis et al., 2009), the LMS market was estimated to generate over $750 million in sales. Within just 4 years, reports in 2013 estimated LMS revenue at $1.9-2.6 billion, with future projections reaching $7.8 billion by 2018 (Dahlstrom et al., 2014). Responding to their own shifting market, publishers have also become competitors in the LMS space. Whether corporate LMSs or open source applications and resources will dominate the educational space, continued reliance on LMS environments is well-substantiated (Allen & Seaman, 2014). LMS and mobile device integration is also increasing. "The use of mobile devices has grown tremendously worldwide in recent years. This has led to a desire among students to be able to use mobile devices for online learning as well" (Cozart, 2015, p. 814). Allen and Seaman (2014) suggested the shift towards mobile/multimedia devices, social media, and video conferencing will represent the fourth generation in distance education.

Contemporary Online Education

Just as technology changed the delivery of education in the 19th and 20th centuries, education continues to be impacted in the 21st century. With the rise in LMSs and technology innovations, the scope of online education is now far-reaching in both profit and nonprofit sectors including K-12, postsecondary, corporate training, professional development, and lifelong learning. Examples of this expansion include virtual high schools, development of online undergraduate and graduate degree programs, free and private online learning academies and courses, massive online open courses (MOOCs), and certificate programs. According to Allen and Seaman's (2014) report, 7.1 million students took at least one online course. In higher education specifically, less than one half of institutions reported online education critical to their long-term strategy in 2002. A decade later, nearly 70% of institutions reported online education was critical to their long-term strategy (Allen & Seaman, 2014).

The practice of using the web-based technology to varying degrees to deliver educational content has also produced new terms, as shown in Table 1, such as web-enhanced/facilitated, blended or hybrid, and online (Allen & Seaman, 2011, p. 7).

Table 1

Educational Delivery Definitions

Proportion of Content Delivered Online	Type of Course	Typical Description
0%	Traditional	Course where no online technology used—content is delivered in writing or orally.
1-29%	Web Facilitated	Course that uses web-based technology to facilitate what is essentially a face-to-face course. May use a course management (CMS) or web pages to post the syllabus and assignments.
30-79%	Blended/Hybrid	Course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically has a reduced number of face-to-face meetings.
80+%	Online	A course where most or all the content is delivered online. Typically have no face-to-face meetings.

Based on the aforementioned definitions, students can select courses based on the amount of physical seat time or synchronicity required. Students report gravitating towards online options due to the convenience of scheduling flexibility (Allen & Seaman, 2011), learning at one's own pace, and reducing travel time and travel costs (Huang, 2015). Despite online growth and the popularity of the "anywhere, anytime" delivery mode, the asynchronous format and absence of a physical classroom present new challenges to both the online instructor and student.

Challenges to online learning. Challenges specific to the online learner include "considerations around their engagement, access, community, and support" (Gillett-Swan, 2017, p. 21). In contrast to traditional classroom environments where considerations surrounding physical proximity, time, design, instructor visibility, and perceptions of isolation are not fundamental factors, it is critical for them to be examined in the online learning environment.

Asynchronous environment. Although an asynchronous learning environment greatly accommodates student schedules and allows for thoughtful written responses (Arasaratnam-Smith & Northcote, 2017), it also has disadvantages. As already described, distance learning refers to the separation of the instructor and student; however, asynchronous learning extends this definition to include a separation in time as well (Andresen, 2009). This loss of real-time access permeates to other identified challenges such as social interaction and feelings of isolation. Although separated from the student, Liu and Yang (2014) posited asynchronous courses should replicate the same level of instructor engagement as traditional, seated courses. Furthermore, a study conducted by Ward, Peters, and Shelley (2010) found students perceived courses with "synchronous communication as having higher instructional quality than those with only asynchronous communication methods" (Crawford-Ferre & Wiest, 2012, p. 12).

Online course design. Gunawardena (1999) raised early concerns about the lack of interaction observed in online courses. She posited these courses disregarded Knowles's (1990) principles of andragogy and did not reflect a collaborative learning environment (Gunawardena, 1999). In addition, courses should be designed so students can interact with content through multiple modes (Osman, 2005). Faculty instructors unfamiliar with online learning design principles may struggle with how to adapt instruction and materials originally designed for the traditional classroom to an online environment (Fein & Logan, 2003). Finally, Kroner (2014) pointed out that while LMSs have evolved, without the integration of additional tools, "they generally have the same capabilities that they had back in the late 1990s" (p. 1).

Text-based courses. Although LMSs have a variety of embedded tools such as announcements, discussion boards, blogs, journals, course messaging, or email, they are all examples of text-based, written communication. Consequently, what previously served as the primary mechanism for communication between instructors and students is still being used despite the availability of more interactive and synchronous technologies and tools (Wang, 2015). Courses using text-based communication as their sole means of communicating, without substantive interaction, may bear more resemblance to a correspondence course than an online one.

Another noticeable absence associated with text-based communication is the lack of emotion and humor. Arasaratnam-Smith and Northcote (2017) suggested, "the aspect of communication that suffers the most [online] is nonverbal" (p. 191). Without such cues, messages including humor or sarcasm may be difficult to interpret (Palloff & Pratt, 2003). While the use of emoticons may lessen the communication gap by replacing vocal cues, they may not be sufficient for conveying the speaker's full intention (Stodel, Thompson, & MacDonald, 2006). Furthermore, without the face-to-face connection to clarify, written communication may also result in miscommunications. When limited to a static communication style of written text and emoticons, students may find it difficult viewing the instructor as active and visible in the online course (Ekmekci, 2013).

Isolation and interaction. When exchanging traditional courses for online courses, students may perceive themselves as trading a sense of community for convenience and flexibility (Gillett-Swan, 2017). In the absence of regular physical interaction, such as eye contact and body language, online students may feel isolated and somewhat detached from the instructor and their peers (Fein & Logan, 2003). Feelings of isolation may also occur when a student is struggling with a new concept or technology or when attempting to navigate and socially interact within the online classroom (Gillett-Swan, 2017). Concerns towards immediacy, referring to how quickly a student can access information or assistance from their instructor, peers, or support services, may heighten these feelings (Schutt, Allen, & Laumakis, 2009). Research studies have also shown positive correlations between student interaction in online courses and student perceptions of course quality, sense of presence, and satisfaction (Picciano, 2002). In response to these perceptions, instructors must regularly interact with and provide feedback to online students to build a personal connection, foster a sense of belonging, and build an interactive, online community (Arasaratnam-Smith & Northcote, 2017).

Although a number of issues may impact student learning experiences online, many of these challenges can be resolved by using a comprehensive framework to guide design and delivery. The following section details a theoretical framework specifically designed to address the previously identified challenges in online learning.

Community of Inquiry

One of the conceptual frameworks that guided this study is drawn from the Community of Inquiry (CoI) model developed by Garrison et al. (2000). The CoI model (see Figure 3) is comprised of three core, multidimensional, interdependent elements: social presence, teaching presence, and cognitive presence—as well as categories and indicators drawn from coded research (Garrison et al., 2000; Swan, Garrison, & Richardson, 2009). The CoI model also aligns with a constructivist approach (Garrison, 2007), which builds upon experience and meaning (Stake, 1995) and will be discussed further in Chapter 3. The three overlapping core elements form the overall, holistic educational experience, which philosophically aligns with the work of John Dewey.

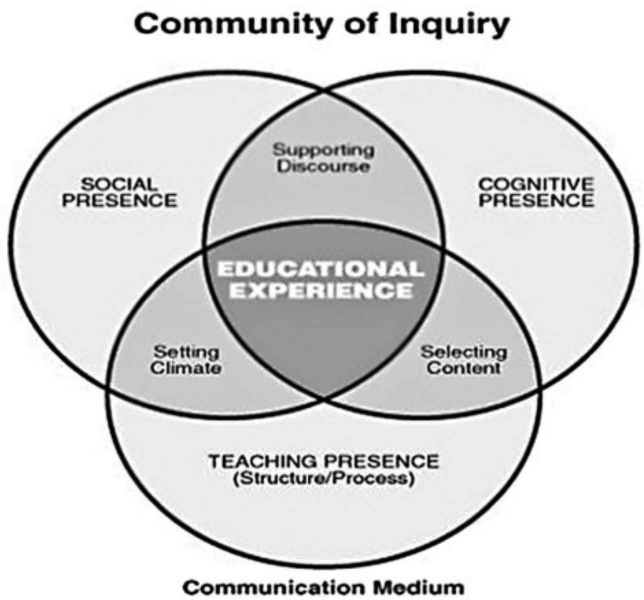


Figure 3. Community of Inquiry Model (Garrison et al., 2000).

CoI and Dewey. The CoI framework authors based their model on Dewey's (1933, 1959) ideas about practical inquiry, reflection, and the collaborative experience (Garrison et al., 2000). Dewey (1933; 1959) explored the relationship between the individual and society. In his 1897 pedagogic creed about education, Dewey stated, "I believe this educational process has two sides- one psychological and one sociological; and that neither can be subordinated to the other or neglected without evil results following" (p. 77). He believed education should be experiential, interactive, and relevant to student lives. These same ideals can be observed in each of the three CoI elements.

Cognitive presence. In the CoI framework, cognitive presence is defined as, "the exploration, construction, resolution and confirmation of understanding through collaboration and reflection in a community of inquiry" (Garrison, 2007, p. 63). Influenced by Dewey's concept of practical inquiry, Garrison et al. (2000) used a practical inquiry model (see Figure 4) represented by four quadrants, or phases of practical inquiry, to explain the critical-thinking process that occurs in the element of cognitive presence. The four phases align with the four cognitive presence indicators, and inquiry begins with a triggering event (Swan et al., 2009). The triggering event is followed by the exploration phase, orienting oneself and searching for information or knowledge (Garrison et al., 2000). The next phase, integration, is reflective in nature, where connections come together into cohesive ideas, and understanding is gained. The final phase, resolution, is representative of testing those ideas and selecting a solution, thereby resolving the conflict that triggered the cycle (Garrison et al., 2000; Swan et al., 2009).

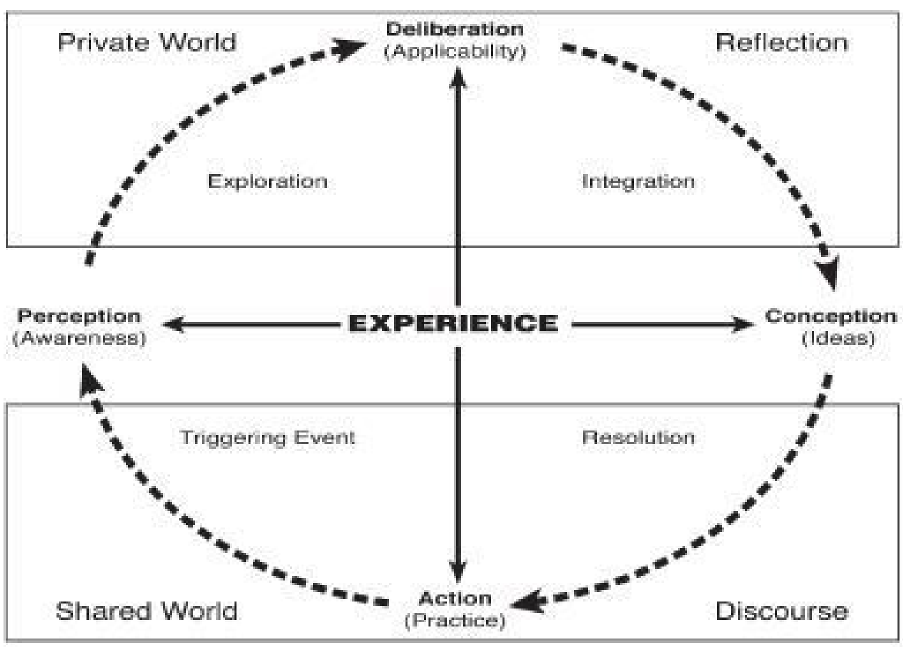


Figure 4. Practical Inquiry Model (Garrison et al., 2000).

Social presence. Social presence is defined as, “the ability of participants in the Community of Inquiry to project their personal characteristics into the community, thereby presenting themselves to the other participants as ‘real people’” (Garrison et al., 2000, p. 89). Consistent with Dewey’s belief in the influence of social experience on learning, social presence is considered an integral component of the CoI framework (Swan et al., 2009). Social presence is further divided into three categories of indicators: emotional expression, open communication, and group cohesion (Garrison et al., 2000). Emotional, or affective expression, refers to learners sharing “personal expressions of emotion, feelings, beliefs, and values” (Swan et al., 2009, p. 10). Open communication requires reciprocal respect of an individual’s ability to contribute to the discussion in a risk-free environment (Garrison, 2007; Garrison et al., 2000), while group cohesion can be “exemplified by activities that build and sustain a sense of group commitment” (Garrison et al., 2000, p. 101).

Garrison (2007) advocated for social presence to establish a sense of community and open communication but stressed the importance of shifting from “socio-emotional presence and personal relationships” (p. 63) to “purposeful relationships” (p. 64) instead. This reflects a balance between establishing a purely social community and one in which the community becomes a support for the cognitive learning process where learners engage with and learn from one another (Garrison et al., 2000). Garrison (2007) went on to state, “the purpose of social presence in an educational context is to create the conditions for inquiry and quality interaction (reflective and threaded discussions) in order to collaboratively achieve worthwhile educational goals” (p. 64). The emphasis on having shared purpose, educational goals, and inquiry demonstrates that social presence is more than just a casual, social exchange.

Teaching presence. Teaching presence, the third element in the CoI, is defined as, “the design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes" (Anderson, Rourke, Garrison, & Archer, 2001, p. 5). Garrison et al. (2000) described teaching presence as, "essential in balancing cognitive and social issues consistent with intended educational outcomes" (p. 101), while Cleveland-Innes, Garrison, and Kinsel (2007) suggested teaching presence "binds all the elements together in a purposeful community of inquiry" (p. 4). Teaching presence incorporates instructor behaviors demonstrated before and during a course including instructional design, facilitation of discussion, and direct instruction. These three primary behaviors form the three categories and indicators within the teaching presence element (Garrison et al., 2000).

Prior to the beginning of a course, an instructor is responsible for the overall design and organization of a course. This includes the determination of learning outcomes, selection of instructional materials, formation of schedules and timelines, design of activities and assessments, and interactive and social components of the course (Garrison et al., 2000). A second category is facilitating discourse, which refers to encouraging students to participate and engage in learning, modeling appropriate "netiquette" behaviors, and facilitating and managing class dialogue (Garrison et al., 2000). Swan et al. (2009) suggested the instructor in the facilitator role builds a community of inquiry by maintaining meaningful, focused discussions and intervening for summative and clarification purposes. The third teaching presence category is direct instruction (Garrison et al., 2000). Direct instruction refers to the traditional expectation of an instructor sharing their knowledge and expertise on a particular subject, linking and summarizing concepts, and providing explanatory feedback (Garrison et al., 2000).

Critiques of CoI Framework

Rourke and Kanuka (2009) conducted a substantial review of CoI research from

2000-2008. In their critique, Rourke and Kanuka concluded the CoI framework failed to result in deep and meaningful learning. The authors assume an objectivist position, referring to empirical testing and outcome-based measures (Annand, 2011). This contrasts with the constructivist lens from which the CoI framework was developed (Garrison, 2007). Rourke and Kanuka questioned the validity of CoI elements to measure learning, noting its failure to move beyond superficial, perceived learning.

In response to Rourke and Kanuka (2009), Akyol et al. (2009) argued the CoI is "first and foremost a process model" (p. 124) rather than a framework for learning outcomes. They went on to advocate the use of the model as a theoretical framework in which to guide research (Akyol et al., 2009). Finally, the authors addressed concerns raised by Rourke and Kanuka about the validity of self-reported data (Akyol et al., 2009). According to Akyol et al. (2009), self-reported reflection on learning demonstrates a high level of inquiry and contributes to greater understanding of model elements and student learning. Annand (2011) supported Rourke and Kanuka's position and raised additional concerns about the questionable value and magnification of social presence.

Annand (2011) went on to suggest CoI supporters value social presence because of the co-construction of knowledge, realities, and experience; however, Annand claimed the artificial and required constraints of online learning in higher education do not generate significant communities of inquiry in which true co-construction and learning occurs. Based on these concerns, Annand called for a reevaluation of the relative influence of social presence and other supporting presences on the learning process.

CoI and Other Applications

The CoI framework was originally developed to address the question of whether a social community could be created and sustained in an asynchronous, text-based environment (Swan et al., 2009). Further research has shown that the CoI framework has been validated in multiple studies (Akyol et al., 2009; Garrison, Cleveland-Innes, & Fung, 2004; Shea & Bidjerano, 2009; Swan et al., 2008; Tu & McIsaac, 2002). The model has also been used to develop and assess online courses (Dunlap, Verma, & Johnson, 2016; Shea & Bidjerano, 2008; Stewart, 2017); compare synchronous and asynchronous environments (Clark et al., 2015); examine the impact of feedback (Borup et al., 2014; Ice, Kupczynski, Wiesenmayer, & Phillips, 2008); and create professional development training (Papanikolaou, Gouli, & Makri, 2014; Theodosiadou, Konstantinidis, Pappos, & Papadopoulos, 2017).

Although research has shown text-based solutions such as email and discussion forums can be used to address presence, limitations still exist (Borup et al., 2014). Garrison et al. (2000) acknowledged direct facial expressions and nonverbal signals are not available in a text-based environment, and thus, social presence is dependent on emoticons (typed expressions) to convey emotion. To address this identified challenge, researchers, course designers, and instructors must continue to examine more robust, Web 2.0 multimedia technologies (Sherer & Shea, 2002) to enhance a community of inquiry online. Swan et al. (2009) noted, "the CoI framework is also being tied to other emerging online technologies that can help develop the presences within courses" (p. 22). Recent studies included research incorporating the CoI framework and Web 2.0 technologies such as VoiceThread (Delmas, 2017); Google+ and Google Hangout (Clark et al., 2015); Facebook (Keles, 2018; Öztürk, 2015); Twitter (Dunlap & Lowenthal, 2009; Solmaz, 2015); and SecondLife (Burgess & Caverly, 2009). While social media networking sites may present certain limitations for widespread adoption, video technology offers a wide-range of applications to address presence (Kaltura Report, 2017;

Sherer & Shea, 2011; Wieling & Hofman, 2016). Furthermore, video is now pervasive in society with a reported 71% of online adults and 92% of traditional college-aged students watching videos (Moore, 2011). "Emerging video communications technologies have potential to enable learners' freedom to interact with each other and their facilitator according to their needs for learning and the plans negotiated for achieving learning goals and outcomes" (Smyth, 2011, p. 122). Within an online learning environment, video can be used to address each of the CoI components: social presence, teaching presence, and cognitive presence. The following sections will explore how video can be used to address each of the CoI presences.

Video and Social Presence

Swan and Shih (2005) defined social presence as, "the degree to which participants in computer-mediated communication feel affectively connected [to] one another" (p. 115), while Picciano (2002) suggested it refers to "a student's sense of being in and belonging in a course and the ability to interact with other students and an instructor although physical contact is not available" (p. 22). Tu and McIsaac (2002) suggested there are two components of social presence: intimacy and immediacy. Intimacy includes characteristics such as eye contact, physical proximity, and conversation topic between participants (Tu & McIsaac, 2002). Immediacy refers to the "perceived physical and/or psychological closeness between people" (Schutt et al., 2009, p. 136) and can be conveyed through verbal and nonverbal behaviors and signals (Kuo, 2015; Tu & McIsaac, 2002). Verbal behaviors include the use of personal illustrations, humor, inclusive language, personalized feedback, and individual attention; while nonverbal behaviors include facial expressions, body posture, gestures, and physical proximity (Schutt et al., 2009). Although, research has established social presence can be established in a text-based environment (Anderson et al., 2001), significant nonverbal behaviors are absent (Garrison et al., 2000); and concern surrounding the potential for misinterpreted written communication may be raised (Tu & McIsaac, 2002).

Tu and McIsaac (2002) argued the complicated nature of the online environment requires the selection of "appropriate computer-mediated communication medium" (p. 131) to optimize social presence and interaction within a course. When instructors utilize video to create presence in an online course, gaps surrounding immediacy, belonging, and interaction are reduced. Video can be used to set course climate, establish relationships, and facilitate community. The resulting consequence of establishing social presence through video humanizes instructors. Students reported the use of video allowed them to view and connect to instructors as real people, in their homes or offices (Borup et al., 2011; Borup et al., 2014). Emotions such as humor and affection can also be communicated more easily and authentically in video than in text (Borup et al., 2014; Schutt et al., 2009).

Social presence is not limited to student social presence. In fact, Swan and Shih (2005) reported social presence of instructors had a larger impact on student perceptions of learning than the presence of their peers. Borup et al. (2014) asserted social presence can be a prerequisite to cognitive presence. This assertion suggests that a course climate designed to reduce perceived distance and increase a sense of connectedness and belonging is a required element for students to engage in the learning process with others and course content. "Students who perceive a higher level of social presence in online learning are more willing to engage in the learning process and connect with other students in an online learning community, which in turn helps increase students' learning experiences" (Kuo, 2015, p. 14). The next section explores how video impacts cognitive presence and a learner's interaction with course content.

Video and Cognitive Presence

Garrison (2007) defined cognitive presence as, "the exploration, construction, resolution, and confirmation of understanding through collaboration and reflection in a community of inquiry" (p. 65). Knowledge is constructed when learners choose to interact with the presented or assigned content, as they progress through each of the developmental stages of inquiry (Garrison, 2007). This learner-to-content interaction is facilitated by the design of the course (Smyth, 2011) and appropriate tasks meant to move students from exploration to resolution (Garrison, 2007). Video can be utilized as a mode to introduce or support a learning concept. According to Guo, Kim, and Rubin (2014), "lecture videos usually present conceptual (declarative) knowledge, whereas tutorials present how-to (procedural) knowledge" (p. 48). Video content may either be instructor-created or curated. Examples of curated material include online video clips (Stephen, 2016) or video content posted on library databases or publisher websites. Common production styles of lecture or tutorial videos include PowerPoint slide presentations with voice over, video screencasts, Khan-style freehand drawing, lecture capture, studio recording, or close-up shots of an instructor's head (Guo et al., 2014). Baim (2015) also advocated for instructors to consider video-based digital storytelling, a combination of informational content and written, audio, image, and web sources presented in story form and shared in a video format, as a delivery mechanism beyond traditional text or talking head narratives (Xu, Park, & Baek, 2011).

In addition to viewing instructor-generated or posted videos, students may also engage with course content by creating their own video content. Sherer and Shea (2011) argued faculty should incorporate online video assignments as a way to engage students in the learning process. Recommended example assignments include view and respond, student produced videos such as presentations, podcasts, interviews or advertisements, in addition to collecting and sharing video content with classmates (Sherer & Shea, 2011).

The two previous sections have addressed how an instructor can establish social and cognitive presence using video in an online environment. Video can also be used to establish and support teaching presence as well.

Video and Teaching Presence

As previously discussed, Anderson et al. (2001) stated teaching presence includes three components: design and organization, facilitation, and direct instruction. According to Garrison (2007), "teaching presence is a significant determinate of student satisfaction, perceived learning, and sense of community" (p. 67). The use of video can be used to address all three components when attempting to establish teaching presence in an online course. When considering the design and organization of an online course, Anderson et al. (2001) stated, "building the course in a digital format forces teachers to think through the process, structure, evaluation and interaction components of the course" (p. 5). This includes the creation and integration of curriculum materials (Anderson et al., 2001), including instructor-generated video content (Draus, Curran, & Trempus, 2014) such as recorded lectures (Community College Research Center, 2013) and video tutorials illustrating concepts or the collection of external example videos. Discussion boards might also be designed to incorporate video rather than purely text based. Anderson et al. (2001) also suggested providing an overview or "grand design" (p. 5) of how the course layout is organized. One such example found in the Quality Matters (2014) Higher Education Rubric is the use of a navigational video to provide students with a tour of the course. Ekmekci (2013) suggested the design of a course should also include intentional "built-in teaching presence" (p. 34) where the instructor is visible and engaged with students throughout the course. Weekly videos are one way to achieve this objective. Similarly, research suggests that teaching presence may also help students adjust to becoming self-directed learners. This also helps instructors as they shift in their own roles as course facilitators (Cleveland-Innes et al., 2007).

The second component of teaching presence is facilitating discourse (Anderson et al., 2001). Research has shown that student sense of learning community is significantly correlated with perceived teaching presence (Garrison, 2007; Shea, Li, & Pickett, 2006). According to the Shea et al. (2006), "a strong and active presence on the part of the instructor—one in which she or he actively guides and orchestrates the discourse" (p. 185) is more significant to student sense of connectedness and learning than the design or organization of the online course. Video in this context may be used to engage students in participation, moderate discussions, and prompt dialogue to move forward (Anderson et al., 2001). Garrison (2007) suggested a distinction between facilitation and the final component, direct instruction, must be made clear.

Direct instruction, the final component of teaching presence, is the "intellectual and scholarly leadership [as instructors] share their subject matter knowledge with students" (Anderson et al., 2001, p. 8). Direct instruction includes "interjecting comments, referring students to information resources, and organizing activities that allow the students to construct the content in their own minds and personal contexts" (p. 9). Video examples of direct instruction may include providing individualized student video feedback (Borup et al., 2014), video annotation of an assignment, and clarifying misconceptions or referring students to video resources on the Web (Anderson et al., 2001).

Although a community of inquiry can be established in a text-based online learning environment, the use of video can be used to address identified gaps in establishing immediacy, connectedness, and presence. As the use of video continues to be examined as a potential technology innovation to establish a community of inquiry, it is equally beneficial to understand the evolution of video, current use and purposes, and best practices of video production.

History and Evolution of Digital Video

Digital video is a video recording system that uses a digital signal of zeros and ones as compared to an analogue system. Digital videos can be compressed, copied, rerecorded, and shared on multiple devices and systems, including the Internet (Pender, 1999). The convergence of several innovations ultimately resulted in the digital video discussed in this study. Therefore, the following section attempts to summarize a combined history of the inventions, techniques, and events that led to our modern day understanding and application of digital video in a virtual environment.

Film and television. In 1824, Peter Roget discovered the property of persistence of vision and the illusion of moving objects when drawn images are altered and shown in rapid succession (Pender, 1999). Thomas Edison is generally credited with inventing the kinetoscope, which was later used to create the sprocket system used to feed film through the movie camera's gate (Pender, 1999). By 1908, movie cameras and projectors were used in the production of the first silent films in the United States. Early sound was played on a separate mechanism synched to the projected film (Pender, 1999). By 1933, the Technicolor process afforded viewers to watch film in three colors. Animated films also began their start as storyboarded hand-drawn images in the late 1930s. By the 1940s, television was becoming a popular medium in households and classrooms. Over the next 2 decades, the emergence of video recording technology, tapes, and cassettes enabled television to move from a live event to a recorded one. As iterations of video recording technology improved, camcorders, cassettes, and VCRs became more affordable (Pender, 1999). In particular, Bardosh (2007) attributed the dominant presence of video today to it being "affordably malleable" (p. 2), namely relatively cheap and easy to use.

Digital video. A significant shift in the history of video was the transition from analogue to digital video. Digital video comprised of binary zeros and ones can be compressed into a variety of file formats. Standard file format types include MPEG-3 (.mp3), MPEG-4 (.mp4), Flash (.flv), Windows Media (.wmv), and QuickTime (.mov) (IANA, n.d.; Malaga & Koppel, 2017). At first, specific players could only read particular file formats; but as technology became more sophisticated, data could be more easily converted to other file formats or read by a variety of video players. The development of digital video and varying file formats led to a shift from video cassette tapes to DVDs and later to networked computers, internet storage, and video conferencing (Bijnens, Vanbuel, Verstegen, & Young, 2006).

> In the mid-nineties, the web further reinforced the ideas of accessibility and interactivity, but added a new element, integration. This referred primarily to interlinking with other web materials including communication and collaborative tools, but also combining video with other teaching and learning activities – video is no longer seen in isolation. (Bijnens et al., 2006, p. 7)

The combination of digital video and the Internet resulted in a phenomenal explosion of video creation, sharing, and applications.

Video devices. Research findings also suggest that video tools are becoming more widely available to educators. For example, instructors who reported having access to easy-to-use tools for video capture increased from 32% in 2016 to 54% in 2017 (Kaltura Report, 2017). This increase may be attributed to the number of devices with video-recording capabilities. Such devices may include smartphones, tablets, external webcams, internal desktop cameras, flip, or HDMI cameras. Given the flexibility of file types, video recordings are easily transferrable to computers for further editing.

Video editing and features. According to Pender (1999), the editing process was initially discovered by George Melies in 1902. Early editing techniques included making objects disappear, superimposing scenes, and dissolving scenes into one another. Later editing including cutting and splitting clips and synchronizing sound clips together. Today editing includes advanced features such as layered tracks, special effects, computer graphics, and chroma-keyed virtual backgrounds. Popular video-editing software includes products such as Camtasia, Screencast-o-matic (Thomson, Bridgstock, & Willems, 2014), iMovie, Final Cut Pro, and Adobe Premiere Pro. Additional editing improvements in video technology now include advanced features such as mobility options, broadcast functionality, browsable chapters, in-video searching, in-video quizzing, polling, and closed captioning (Kaltura Report, 2017). Growth in how edited videos were stored and shared can also be observed.

Video storage. Initially, video was stored on film; magnetic tapes; and later, as well as more affordable, video cassettes. As digital and compression technology improved, larger recorded videos could now be stored on smaller storage devices such as DVDs and flashdrives (Pender, 1999). When the video was converted to a digital format, it could then be uploaded and stored online. As internet bandwidth increased and video storage capacity improved, the appearance, use, and sharing of online videos exploded.

Video sharing and distribution. The digitization of videos and integration with other multimedia made DVD distribution feasible and affordable (Laaser & Toloza, 2017). Later, with increased bandwidth and network connectivity, digitized video sharing transitioned from physical distribution to virtual. Video sharing sites have been noted as a driving force in the number of videos posted, watched, and downloaded online. According to the *Online Video 2013* report (Purcell, 2013), the percent of online adults who use video-sharing sites has grown from 33% in 2006 to 72% in 2013. Furthermore, “adult internet users who upload and post videos online has doubled from 14% in 2009 to 31% today [2013], … online adults who watch or download videos has also grown from 69% of internet users in 2009 to 78% today [2013]” (Purcell, 2013, p. 1). One significant improvement in this process is video streaming, or the ability to watch a video immediately online rather than waiting for the entire file to download (Malaga & Koppel, 2017). Streaming video on the Internet has become an alternative to TV. Examples of online video distribution include YouTube, Netflix, Amazon, and iTunes (Newman, 2014). One of the most popular video sharing sites is YouTube.

YouTube claims more than 400 hours’ worth of video content is loaded every minute and one billion hours watched daily (YouTube for Press, n.d.). According to their statistics page, the video giant now reports over a billion users worldwide, including 88 countries and 76 languages (YouTube for Press, n.d.). In the United States alone, an average of 180.1 million people watch YouTube. A quick Google search for video-sharing sites results in a host of free, subscription-based, and enterprise solutions. These websites and applications vary in their niche range of features from social networking to mobile responsiveness. Other popular, alternative video sharing sites include DailyMotion, Vimeo, Flickr, and MetaCafe among others (Devinder, 2017). Another driving force for creating, viewing, and sharing videos can be attributed to the development and capabilities of mobile devices.

Mobile devices. In the report *Video Use and Higher Education: Options for the Future* (Kaufman & Mohan, 2009), Google scientists predicted the evolution of portable mobile devices would enable users to “carry around all the media ever created in the world on an iPod or a device its size” (p. 4.) within 10 years. The widespread availability of mobile phones has also been credited for the increase in video uploads (Purcell, 2013). Mobile phones allow users to watch, record, and post videos anytime, anywhere (Purcell, 2013). According to the report, 41% of cell phone owners use their phones to record videos, 40% to watch videos, and 20% to post videos online (Purcell, 2013). Within an educational context, the portability of mobile devices (Malaga & Koppel, 2017) enables students to “de-tether[~~ing~~] learning from the bricks and mortar university classroom” (Thomson et al., 2014, p. 67).

Web conferencing. Another type of video communication is web or video conferencing. While initially these two terms were distinct from one another in regard to the focus and features of each meeting style, the lines are blurring and the terms are often used synonymously. Web-conferencing tools provide participants with real-time communication from different locations (Correia, 2015). Using a combination of webcams, telephony, or Voice over Internet Protocol (VoIP), users can virtually interact with one another. Characteristic web-conferencing features include audio, video, chat, screen sharing, file sharing, polls, whiteboard, and recording capabilities (Correia, 2015). Using the recording feature, participants who are unable to attend the live web conference can watch a recorded version posted online.

Web- and video-conferencing tools are plentiful online and have varying population types and applications ranging from individual personal use to business or education. Popular personal web- and video-conferencing tools include Skype, Facebook Live, Apple FaceTime, and Google Hangouts. Vendor products include names such as Adobe Connect, Blackboard Collaborate, GoToMeeting, WebEx, and Zoom.

Video in education. Parallel to the evolution of video, is the evolution of video in education. Historically, various forms of video have been used in classrooms since the 1930s (Casey, 2008; Syed, 2010) including televisions, live broadcasts, satellites, video cassettes, and DVDs as instructional resources (Caspi, Gorsky, & Privman, 2005). As video technology has improved and content become more accessible, instructors continue to find video a useful instructional resource. Example applications include lecture videos (Hegeman, 2015; McAlister, 2014; Miller & Redman, 2010); animated multimedia (Laaser & Toloza, 2017); digital storytelling (Baim, 2015); video tutorials (Thomson et al., 2014); just-in-time instructional support (Mayer, 2008); remote speakers and guest presentations (Kaltura Report, 2017); video simulations and complex explanations (Fernandez, Simo, Castillo, & Sallan, 2014); recorded events; and mass distribution channels (Koumi, 2006). In addition to instructor-created content, other video resources include textbook publisher multimedia materials, digital library databases, online clips (Stephen, 2016), and content published to the Internet such as TED Talks and Kahn Academy videos. Finally, videos may also be incorporated into a variety of student assignment types (Sherer & Shea, 2011) as well as instructor feedback (Borup et al., 2014).

With the development of flipped classrooms, MOOCs, and online learning platforms, video continues to be relevant in the educational space. Recent editions of *The State of Video in Education: A Kaltura Report* (Kaltura Report, 2015, 2017) not only forecasted a dominant future of video as a standard part of education but predicted its importance will become increasingly significant. Based on this predicted trajectory, it is necessary to further examine recommended best practices for producing engaging and interactive educational video content.

Production Best Practices

In addition to learning about how to produce video content, best practices should also be considered. Guo et al. (2014) conducted a large scale analysis of 6.9 million video watching sessions and interviews with video production staff, resulting in a seminal work for producing videos and engaging students online. Their findings offer recommended best practices to instructional designers and video producers for video production. Recommendations include engaging and connecting with users, video production quality, the use of preproduction scripts, and appropriate video length.

Video as an engaging medium. Guo et al. (2014) suggested, “what works well in a live classroom might not translate into online video, even with a high production value studio recording” (p. 46). Instead, Thomson et al. (2014) recommended only select content should be converted into a video medium, rather than the whole of the lecture or classroom experience. They also caution that lengthy straight-to-camera presentations or excessive text on recorded PowerPoint slides can disengage students and fail to capitalize on the strength of video to “show not tell” (p. 69). Based on their research, Thomson et al. stated the video tutorial is “arguably a better use of the medium than lectures because it exploits the visual strengths of video” (p. 70). Similarly, Koumi (2006) asserted the fundamental value and strength of video is the “rich symbol system” (p. 18) which includes features such as moving pictures, synchronized narration, chronological sequencing, visual effects, and an array of camera shot styles. He explained there are three domains under which video adds value: (a) cognitive value (learning and skills development); (b) experiential value (vicarious experiences); and (c) nurturing value (motivations and feelings; Koumi, 2006). Thomson et al. (2014) referred to this strategy as, “medium matching the message” (p. 71); for example, using video to demonstrate a specific skill, while other mediums such as text or audio should be used to convey nonvisual content. Along with selecting the right medium, Koumi also suggested a study guide, before or after viewing prompt, or reflective activity should be provided or required in association with each video assigned to the student to watch.

“Talking head” videos. An instructor’s face on video is affectionately known as a “talking head” and has been found to consistently engage users (Bijnens et al., 2006; Guo et al., 2014). According to Guo et al. (2014), interviewed video producers expressed “a human face provided a more ‘intimate and personal’ feel” (p. 45). As a result, students perceive that the video is personalized and directed right at them (Guo et al., 2014). The researchers went on to recommend that instructors should insert a talking head over the content slide at opportune times but suggested it should not distract from the content material (Guo et al., 2014). A study by Pi, Hong, and Yang (2017) confirmed instructor image size is not a factor when attempting to establish social presence; however, one potential distractor is the sustained monitoring of one’s own image on the screen rather than looking at the camera. Consequently, this results in a loss of connectedness with the audience (Thomson et al., 2014). Furthermore, although Thomson et al. (2014) agreed that the talking head overlaid on the main screen is useful for instructional demonstrations, they also noted that a downside of this split focus may distract some users, resulting in reduced viewer engagement.

Video production quality. Seemingly aligned with the connectedness found in a community of inquiry, personal videos were found to be more engaging than high-fidelity studio recordings. This suggests that instructors may be able to produce informal videos without the investment or support of high-dollar studio production (Guo et al., 2014). In their research using multiple cameras, angles, and shot styles, Thomson et al. (2014) found that while interest and viewer engagement increased, "it added little to the learning experience beyond what might have been achieved through a single camera lecture recording with PowerPoint slides" (p. 70).

Video scripts. Koumi (2006) recommended prerecording audio when writing a script so it sounds more conversational. "In an effective video design, words and pictures need to be carefully interwoven, in order to create synergy between them, resulting in a whole that is greater than the sum of two parts" (Koumi, 2006, p. 95). Koumi offered a procedural formula for writing educational video. First, he recommended teachers consider (a) the target audience, (b) the learning context, and (c) the intended purpose such as the aforementioned value domains. Second, Koumi recommended following 10 structural steps: (a) hook, (b) signpost (or information about what is coming next), (c) facilitate attentive viewing, (d) enable individual construction of knowledge, (e) sensitize, (f) elucidate, (g) texture the story, (h) reinforce, (i) consolidate/conclude, and (j) link.

Video length. Although some researchers advocate for entire course lectures to be recorded and posted online for viewing, Guo et al. (2014) found that shorter videos are more engaging. This recommendation is based on data findings indicating that "students often make it less than halfway through videos longer than 9 minutes" (Guo et al., 2014, p. 44). Likewise, Thomson et al. (2014) noted the practice of converting 1-hour classroom lectures to 1-hour videos was entirely too long. Quality Matters (2014) rubric standards suggest breaking up videos longer than 15-20 minutes into smaller segments or making the video searchable. Guo et al. (2014) reduced the number by half, asserting that videos should be segmented into 6 minutes or less.

Although the number of tools to support video adoption has grown, the use of video in online courses varies. The following section will discuss perceived challenges related to video including Self concerns about quality and performance, Task concerns about technical knowledge, available time, resources, and support as well as concerns about others accessing and absorbing video content.

Perceived Challenges of Video

Quality. In a study conducted by Borup et al. (2014), instructors reported rerecording their videos in an effort to produce error-free takes. Likewise, instructors who are accustomed to editing text comments may also desire the ability to edit their videos in order to produce a more polished product (Borup et al., 2014). Instructors concerned about presenting a flawless video could be hindered by the recording or editing process. Instructors may also share concerns over the permanency of video posted online. With the aid of software, videos can be downloaded, reposted, and shared without much difficulty. As a result, any performance or content error can easily be archived or disseminated in perpetuity.

Performance anxiety. Some instructors may express concerns about their appearance or recorded voice. According to Benzine (2015), people often perceive their recorded voice as higher pitched than their speaking voice, because the auditory nerve processes a speaking voice with external sound waves and vibrations heard by the ear as well as internal vibrations from the vocal cords and bone conducted sounds. Consequently, speaking voices sound deeper than they do in real life. In her article, Samuelson (2017) quoted University College London professor of laryngology Martin

Birchall as stating, “we get used to the sounds we hear in our heads, even though it’s a distorted sound. We build our self-image and vocal self-image around what we hear, rather than the reality” (p. 1). The phenomenon of preferring the familiar sound in our head over the more realistic sounds captured in a media recording is known as mere exposure effect (Zajonc, 1968). Mere exposure effect is “the observation that liking for a stimulus increases on repeated exposure to that stimulus” (Montoya, Horton, Vevea, Citkowicz, & Lauber, 2017, p. 459). This phenomenon can also be observed in an individual’s preference for their mirror-image self over their true image which others see in reality (Mita, Dermer, & Knight, 1977). The aversion to seeing the reverse of our preferred mirror-image may result in users avoiding mediums that capture this distorted view of ourselves.

Availability of tools. Deciding to adopt video may also result in a financial investment of digital software and equipment. Users must locate and purchase video and audio recording devices such as videocassette or digital recorders, external or internal desktop webcams, and a microphone (Bijnens et al., 2006). Web-conferencing tools and mobile devices such as smartphones and tablets also serve as possible solutions. In addition to recording devices, investment may also be required for editing software and video storage solutions. Several considerations include level of editing features and skills required, software and storage costs, and storage size capabilities and degree of privacy.

Although Smyth (2011) suggested video communication improvements in connectivity, bandwidth, and computing, concerns surrounding accessibility and the digital divide still exist. The digital divide refers to the inequitable access to digital technology, skills, and knowledge shared locally and globally through digital channels (Rogers, 2016). According to Rogers (2016), the digital gap “exists for people of color, the economically disadvantaged, and other marginalized groups" (p. 1). Rye (2008) acknowledged offering distance education assumes access to technology and the Internet; however, users may access course content from their place of business, public computers, or mobile phones. Additionally, some areas in the country still have limited Internet options and low bandwidth (Perrin, 2017).

Digital literacy. Digital literacy is defined as, "the ability to locate, organize, understand, evaluate, analyze, create, and communicate information using digital technologies" (Kaltura Report, 2015, p. 5). When creating or posting online videos, users may have to utilize technical troubleshooting skills diagnosing and resolving issues. Users must also be familiar with well-known video file formats and video editing terminology. There are also a number of devices that play video content such as desktop computers, laptops, tablets, and smartphones—each with varying knowledge and operational requirements. In addition to file formats and platforms, users must have a working knowledge of individual browser settings and limitations, variance in operating systems and software requirements, and understanding key networking terms such as bandwidth, uploading, downloading, and streaming (DeCesare, 2014). When challenged with resolving a video issue, users must also possess the appropriate research skills to locate a solution and follow technical instructions. In order to increase a user's digital literacy, adequate training and support should be provided.

Training and support. According to *The State of Video in Education 2017: A Kalutra Report*, the degree of instructor access to video tools and training varies widely across institutions (Kaltura Report, 2017). For those who do offer training, Thomson et al. (2014) cautioned that the mere provision of digital tools and technical training only will most likely fail. Instead, they suggest a more comprehensive training approach combining the technological, pedagogical, and curricular sides of developing effective educational video content.

Time commitment. Time is often noted as a major barrier for not adopting video. Thomson et al. (2014) suggested the most effective video involves rigorous planning, scripting, and storyboarding. Guo et al. (2014) concurred, noting that more engaging preproduction videos are strongly preferred over traditional, lecture-style classroom recordings. When examining library video resources, 43% of faculty reported difficulty in spending time locating high-quality, appropriate video material (Kaufman & Mohan, 2009).

Legal concerns. While the digitization of video allows for easy distribution to a mass audience, other concerns such as ownership, permission, and accessibility may also arise. Additionally, there may be variance among different institutional policies as well as perspectives pertaining to the interpretation and spirit of these laws.

Copyright, intellectual property, and fair use. Copyright law is defined as the exclusive legal right to reproduce, publish, sell, or distribute the matter and form of something including literary, dramatic, musical, artistic, and certain other creative works, whether printed, audio, or video (U.S. Copyright Office, 2016). Given the ease in which content can be controlled on the Internet (Bijnens et al., 2006), instructors may be wary of posting intellectual property that can be copied and distributed without their knowledge. Questions may also arise regarding ownership between the instructor and institution when instructional content is created for courses assigned by the institution or using institutional resources. The U.S. Copyright Office (2016) referred to this as, "work made for hire" (§ 101, p. 7), or work that has been prepared by or assigned to an employee under the scope of his or her employment. Other copyright concerns may center around adhering to copyright laws when using video materials. In these situations, instructors must identify whether material is marked as free use, such as "creative commons," or if written permission from the content owner is required (Bijnens et al., 2006). When locating video material posted online, DeCesare (2014) cautioned instructors that copyrighted material posted illegally is subject to be removed from a site and may not be considered a stable multimedia resource; however, there are occasions where the use of copyrighted material for educational purposes is permitted. This is known as fair use.

Fair use specifies that

> use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright. (U.S. Copyright Office, 2016, p. 19)

Fair use, however, does not afford permission to edit or modify copyrighted material (Bijnens et al., 2006). Historically, fair use cases center around the transformative nature of a work and its economic impact on the original copyright owner (Jaszi & Aufderheide, 2008). If identified as meeting the criteria for fair use, attributing credit is still recommended to lessen potential violation claims (Jaszi & Aufderheide, 2008).

In addition to respecting copyright law, users may also express concerns over protecting their own content. According to the American Association of University Professors (AAUP), institutions may have differing intellectual property policies regarding institutional ownership versus faculty ownership of instructor-created content. They went on to state that according to the 1999 *Statement of Copyright,* "courseware includes work that is published on the web and in other digital forms" (Ramsey &

McCaughey, 2012, p. 5); however, they caution that technology availability easily enables recording and distributing digital content posted online (Ramsey & McCaughey, 2012). Consequently, video content owners must decide how their video material will be shared with users. Some may choose to make video content public, while others may choose to use privacy and permission settings. Creators may also choose to apply a Creative Commons license to their content, clarifying and granting in advance the terms of use (Creative Commons, 2017).

Accessibility. Making content accessible to all users may also inhibit video creation or usage. Federal laws such as ADA-AA and Section 504 as well as WCAG compliance standards produced by the World Wide Web Consortium (WC3) establish guidelines for ensuring and evaluating accessible content (WC3, 2008). As a multimedia format, accessibility refers to both users who "cannot hear audio or see video" (WC3, 2008). Meeting compliance standards may mean creating transcripts, captions/subtitles, or audio descriptions. This applies to work created by the user or work "produced or published by others" (WC3, 2008). In order to produce accessible multimedia, users must consider investing in appropriate software or outsourcing to a third-party company (WC3, 2008). As a result, time, labor, and financial resources are related concerns.

A relative advantage of producing accessible multimedia is the benefit to users other than those with specific disabilities. Examples of users who may benefit from this universal design approach include English Language Learners, low digital literacy users, or those who have limited bandwidth, hardware, or operating systems (Bijnens et al., 2006).

Cognitive load. Cognitive Load Theory refers to "how the mind processes multimedia information" (Homer, Plass, & Blake, 2007, p. 787). According to Homer et al. (2007), the mind competes for available working memory to process visual and verbal information. Mayer and Moreno (2003) suggested the mind is divided into two separate channels to receive audio and visual information, each with a limited amount of capacity at any one time. A significant amount of cognitive processing of both channels is required to result in meaningful learning (Mayer & Moreno, 2003). Cognitive load is divided into three categories: intrinsic, extraneous, and germane load. Intrinsic load is the content under study, while extraneous load is the “mental effort imposed by the instructional activities, their design and presentation” (Homer et al., 2007, p. 787). Finally, germane load refers to the mental effort required of the learner to process and incorporate the new material. Cognitive overload occurs when “the processing demands evoked by the learning task may exceed the processing capacity of the cognitive system” (Mayer & Moreno, 2003, p. 45). According to Homer et al. (2007), “learning materials should be designed to reduce extraneous load in order to allow for the greatest amount of mental resources to be dedicated to germane load” (p. 787).

When designing in an online environment, “multimedia instruction that is sensitive to cognitive load” (Mayer & Moreno, 2003, p. 43) should be considered. As a result, Mayer and Moreno (2003) have developed a theory that addresses the concern for multimedia learning and cognitive capacity. This theory is referred to as Cognitive Load in Multimedia Learning and suggests that the active processing of “selecting words, selecting images, organizing words, organizing images, and integrating” (Mayer & Moreno, 2003, p. 45) places significant demands on an individual’s cognitive capacity. Researchers caution that multimedia presentations, such as recorded video lectures, may negatively affect extraneous load by overloading the learner with unnecessary information and consequently should be removed (Homer et al., 2007). Further study has identified other challenges such as the inclusion of distracting extraneous details or complex content that overloads and overwhelms the user (Ibrahim, Antonenko, Greenwood, & Wheeler, 2012). One way to address this issue is through the process of weeding or segmenting (Mayer & Moreno, 2003). Weeding refers to eliminating nonessential, extraneous material in order to lessen distractions and help the viewer focus on essential information (Mayer & Moreno, 2003). Segmenting refers to breaking down the content into smaller sections (Mayer & Moreno, 2003).

Conversely, however, the addition of multimedia elements may positively influence a learner's sense of social presence. Homer et al. (2007) acknowledged video may improve learning outcomes for students and increase their engagement, despite the increase in cognitive load. In a study conducted by Lyons, Reysen, and Pierce (2011), findings supported previous research that course videos aided in the positive perception and evaluation of social presence and learning but suggested instructors "omit their images in video lectures to avoid overloading students with low technological efficacy" (p. 185). Whether viewed as an advantage or not, the appropriate use of multimedia must be considered when student learning is the desired goal.

This section presented a comprehensive review of the CoI and how technology innovation, specifically video, can address the gap in instructor, content, and social presences when facilitating online education. Both the merits and perceived barriers of video were also discussed, along with concerns related to cognitive load and multimedia learning. While the advantages and disadvantages of video can be debated in research, the focus shifts when attempting to facilitate the adoption of a technology innovation. The following section addresses facilitating the change adoption process, reviews change process models and theories, discusses adopter and change agent roles and factors identified as barriers or supports towards adoption and sustained implementation.

Change Adoption Process

Given the prolific avenues to produce, capture, and distribute video files, one might expect online instructors to readily adopt this innovation to address gaps identified in the CoI; however, adoption of innovations is not limited to mere availability. In order to fully understand why and how innovation adoption occurs or does not occur at the individual and organizational level, institutions must first delve into understanding the change adoption process: the innovation, the adopter, the adoption model, and the facilitating change agent. Second, institutions must also examine the intricate personal and social components of the change adoption process, acknowledging the desire of individuals to control themselves and their environment (Bandura, 1997), while accepting the significant influence of social behaviors and attitudes.

Innovation

The term innovation refers to any new or novel idea, practice, process, program, or artifact that is the focus of a change effort by an individual or group (Havelock, 1973; Loucks et al., 1975; Rogers, 2003). Rogers (2003) suggested users focus on the perceived newness, rather than actual, when determining the status of an innovation. "It may be a new strategy, program, or practice, or it may be something that has been in use for some time" (George et al., 2006, p. 7). Although often perceived positively as a desired improvement for an individual or social system, innovations may also be considered negative. Depending on a person's belief, perception of the same change or innovation as new or desirable will vary from user to user (Duke, 2004; Rogers, 2003). When innovations are introduced to an individual, organization, or social system, responses toward adoption will vary. In concerns research, George et al. (2006)

suggested innovation establishes “a frame of reference from which concerns can be viewed or described” (p. 7). In order to facilitate the adoption and implementation process, identify which factors or concerns might positively or negatively influence adoption, or hypothesize which innovations are more likely to be successfully implemented widespread, change agents utilize innovation-decision process models and theories (Rogers, 2003).

Adoption Theories and Models

“It is common for newly adopted technologies to fail to be widely used by members of an organization or to be used inappropriately or ineffectively” (Surry, 2015, p. 584). As a result, much research has been conducted to investigate and learn about the change adoption process. Although theorists have attempted to predict, describe, and document the adoption process, there is no single, unified, widely accepted theory or model (Surry, 2015). This section will review several well-documented adoption theories found in the literature used to understand the process by which new technology innovations are adopted. While the process models may vary from one theory to the next, the general change process of an innovation involves moving from innovation adoption, implementation, diffusion, and then finally institutionalization. Innovation adoption is the initial decision to adopt full use of an innovation (Rogers, 1962; Surry, 2015). Next, implementation is “the process of fostering the effective use of an innovation on a day-to-day basis” (Surry, 2015, p. 586). Diffusion then refers to “the process in which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 2003, p. 5). The final transition is institutionalization, in which the innovation is no longer new or in the process of being adopted or implemented. Instead, the innovation becomes “an accepted, stable, and routine part of the organization" (Surry, 2015, p. 586).

According to Straub (2009), regardless of the adoption theory or model, behavior change is traditionally used to understand whether adoption of an innovation has occurred. In some cases, actual behavior is studied, while other models focus on an individual's intention to adopt a new innovation. For the purposes of this literature review, the theoretical change models and frameworks discussed in this section focus on the intention to use and/or implemented usage of the adopted innovation. Some models are prescriptive and offer steps to follow, while others describe the developmental stages of individual experiences during the change process. These models either represent how the change process should or does take place (Duke, 2004).

Social cognitive theory (SCT). Although the SCT concept is more theoretical than other change process models, it reflects a behavior change perspective. Furthermore, Bandura (2002) has written recent work that demonstrates the contemporary application of his theory on subjects such as the adoption of electronic technologies. Bandura (2006) stated that the "social cognitive theory adopts an agentic perspective toward human development, adaptation, and change" (p. 164). This means that humans are self-organizing and self-regulating during times of change. According to Bandura (2006), human agency consists of four core properties: intentionality, forethought, self-reactiveness, and self-reflectiveness. Combined, these properties reflect an individual who engages in action-planning, sets purposeful outcomes and goals, is self-motivated and directed, and demonstrates a strong self-awareness through observation and reflection (Bandura, 2006). Central to an individual's ability to self-regulate is their level of self-efficacy, or self-belief in their ability to reach a desired goal or outcome. As a result, this internal belief system guides an individual's decision-making process, motivations, and behavior choices (Bandura, 2002). These individuals also operate within three modes of agency: personal, proxy, and collective (Bandura, 2006). This means that individuals influence their own personal experience but also experience external, or proxy, influences as well. In addition, an individual does not live in isolation, and therefore must function within an influential, social context (Bandura, 2006). By adopting this theoretical perspective, change agents can predict how an individual may respond or behave towards a particular change innovation.

Conditions of Change. Conditions of Change refers to environmental factors that influence adoption beyond the characteristics of the innovation itself. Ely (1990) suggested change agents examine both the context in which the change occurs and the unit of analysis. The aforementioned context refers to the existing cultural values and norms held by the individual or organization, while the unit of analysis is the potential adopter or user (Ely, 1990). Based on a review of literature at the time, Ely (1990) proposed a set of eight conditions that facilitate change and the implementation of educational technology: (a) a dissatisfaction with the status quo, (b) knowledge and skills exist, (c) resources are available, (d) time is available, (e) rewards or incentives exist for participants, (f) participation is expected and encouraged, (g) commitment by those who are involved, and (h) leadership is evident. Ely (1990) believed these conditions may be used as a screening tool to identify potential problems, support the change process during implementation, or identify a cause when implementation does not occur. In a later article, Ely (1999) indicated further study is required to investigate the influencing role the setting and nature of the innovation play in "the degree to which each condition is present" (p. 8).

Kotter's eight-stage process. Kotter (1996) believed eight fundamental errors occur when managing organizational change. In response to these errors, Kotter produced an eight-stage change process model (see Figure 5). The model includes the following eight steps: (a) establishing a sense of urgency, (b) creating a guiding coalition, (c) developing a vision and strategy, (d) communicating the change vision, (e) empowering broad-based action, (f) generating short-term wins, (g) consolidating gains and producing more change, and (h) anchoring new approaches in the culture (Kotter, 1996, p. 21).

Figure 5. Kotter's Eight-Step Model (Kotter International, 2018).

According to Kotter (1996) the first four steps of the process model establish the groundwork for introducing the change; steps five through seven introduce the change; and step eight addresses sustained implementation. Kotter also advocated the steps should be followed in a linear sequence and that subjectively selecting steps will result in problems during the change process. In comparison to other change management processes, this model emphasizes a top-down leadership style to influence and effect change on an organization (Duke, 2004; Pollack & Pollack, 2015). Calegari, Sibley, and Turner (2015) noted the advantage of Kotter's model as one that provides change agents with clearly outlined procedural recommendations and expected behavior outcomes. They also highlight the model's inclusion of behavioral, cognitive, and affective factors in response to change (Calegari et al., 2015).

Havelock's linkage model. Havelock's linkage model differs from other models in several ways. First, the model specifically focuses on the process of educational change (Duke, 2004). Havelock (1973) directed the linkage model to change agents who traditionally facilitate change at their site. Second, the model takes a systems perspective, where both the user system and resource system are considered (Havelock 1973). Havelock articulated the user system focuses on solving a problem, while the resource system is the information used to solve the problem. According to Duke (2004), "the crucial factor in this model is the transfer of information from the resource system to the user system" (p. 24). Last, the model for change is presented as Havelock's ideal sequencing order, rather than a description of the actual change process as it occurs (Duke, 2004). Havelock's Model for Planned Change Implementation includes six stages: awareness, interest, evaluation, trial, adoption, and integration (Havelock & Zlotlow, 1995).

Havelock (1973) referred to Lewin's 3-Stage Model and the process of unfreezing and moving; however, they suggested his model is primarily concerned with the final refreezing stage, where innovation acceptance and sustained implementation is at greatest risk. The Stages of Planned Change (see Figure 6) is a seven-stage process cycle (0-6) represented by seven letters, C-R-E-A-T-E-R, with corresponding terms: care, relate, examine, acquire, try, extend, and renew (Havelock, 1973). The authors suggest that these terms form a "coherent progression" (p. 2) with each stage of the process representing different concerns about the system (Havelock, 1973).

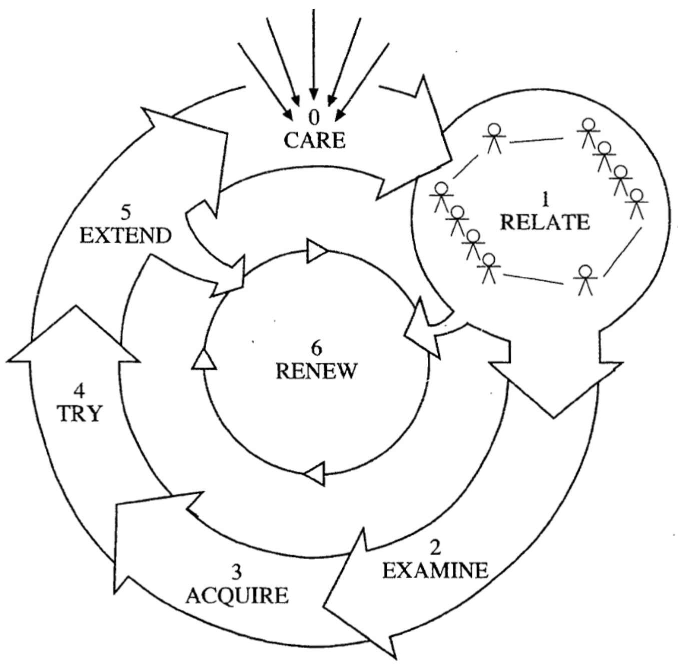


Figure 6. The Stages of Planned Change (Havelock & Zlotolow, 1995, p. 11).

Lewin's planned change. Kurt Lewin is credited for stating that "you cannot understand a system until you try to change it" (Schein, 1996, p. 64). He also believed resolving social conflict was at the center of improving the individual (Sarayreh, Khudair, & Barakat, 2013). To resolve this social conflict, Lewin proposed a planned approach to change comprising of four components: field theory, group dynamics, action research, and the three-step model of change (Burnes & Cooke, 2013). According to the authors, field theory and group dynamics were formed to explore social groups, while action research and the three-step model were designed to change the behavior of these social groups (Burnes & Cooke, 2013). The following section will explore each of the four components of Lewin's unified approach to planned change.

Field theory. Field theory is a holistic approach, influenced by gestalt psychology (Burnes & Cooke, 2013), towards understanding individual or group behavior and perceptions within the environment or field in which the behavior takes place (Burnes, 2004). Lewin developed a formula to represent his belief surrounding the individual and the environment: $B = f(p, e)$. "Behaviour B is a function of the interaction between the person p (or group) and their environment e" (Burnes & Cooke, 2013, p. 412). By taking account for both the individual and environment, this gestalt-based approach constructs what Lewin referred to as one's "life space" (see Figure 7; Burnes & Cooke, 2013, p. 412).

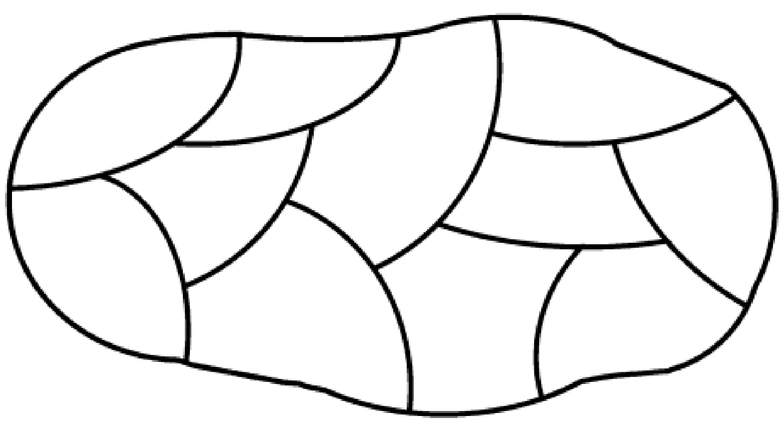


Figure 7. A Lewinian Life Space (Burnes & Cooke, 2013, p. 413).

According to Burnes and Cooke (2013), an individual can have many life spaces, and understanding the environmental and psychological forces of a person's life space can help in understanding their behavior and, more importantly, how to bring about behavioral change. In order to bring about change, Lewin proposed a force field analysis to account for which forces to alter in the life space (Burnes & Cooke, 2013). The force field referred to the external forces that either drive or hinder change. Lewin believed driving and restraining forces are always at work to maintain equilibrium, or status quo (Biech, 2007; Burnes, 2004). As a result, in order to disrupt the status quo and effect change, the driving forces, those favoring the change, must be strengthened; and the restraining forces, those resisting the change, must be weakened (Biech, 2007).

Group dynamics. Group dynamics is the second element of planned change. Burnes (2004) suggests that Lewin emphasized the influence of group behavior, or dynamics, on the individual and their desire to conform to group norms or roles. According to Burnes and Cooke (2013), understanding group dynamics "and why group members behave in the way they do when subjected to these forces" (Burnes, 2004, p. 984) is a necessary component to understanding the environmental factors influencing an individual's life space.

Action research. The third element of planned change is action research. According to Biech (2007), action research can be considered "both a model and a process" (p. 25). Lewin's model, the action research spiral (see Figure 8), is depicted as a progression of action steps, interwoven with fact finding, planning, evaluation, and modification (Mertler, 2009). As a process, Lewin refers back to the influence of group dynamics and stresses the importance of collaborating on a group level (Burnes, 2004). Further discussion of action research as both a model and a process, including Lewin's contribution, is presented in more detail later in this chapter as well as in Chapter 3.

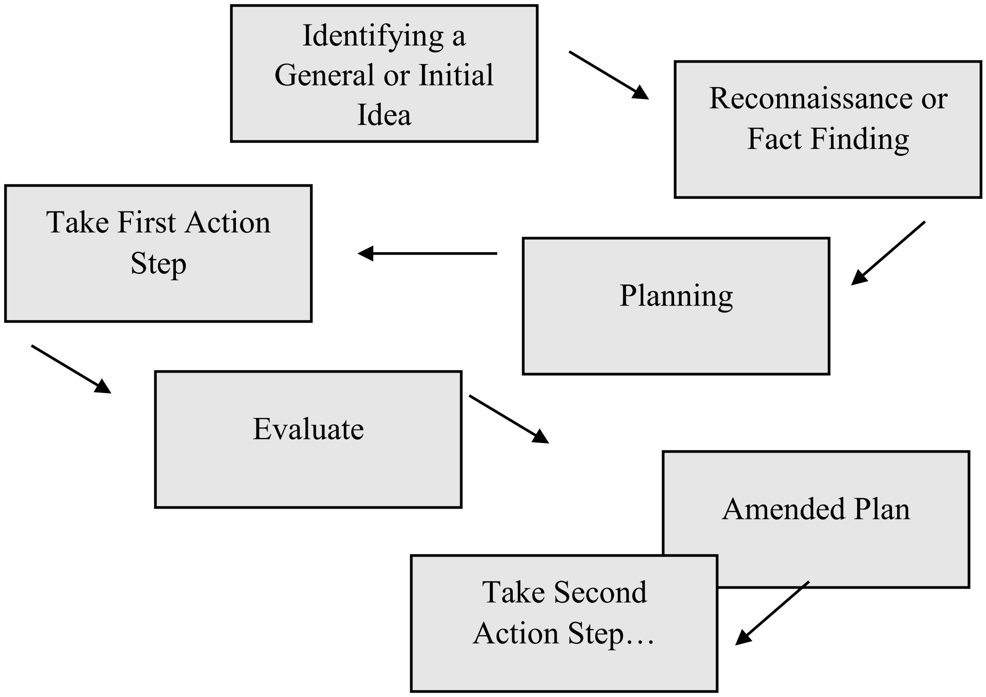


Figure 8. Adapted from Lewin's Action Research Spiral (Mertler, 2009).

Three-step model. The final and most notable element of Lewin's planned change approach is the three-step model, which Schein (1996) considered, "a theoretical foundation upon which change theory could be built solidly" (p. 59). Lewin's (1947) model is comprised of three steps (unfreezing, movement [or change] occurs, and freezing [Figure 9]) to motivate, explain, and sustain change (Burnes & Cooke, 2013).

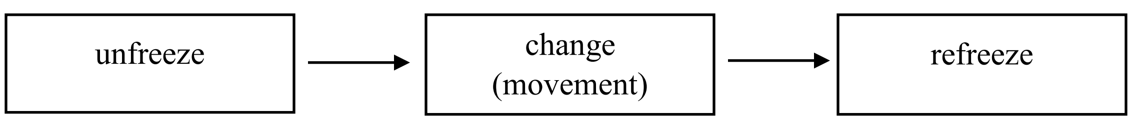


Figure 9. Adapted from Lewin's Change as Three Steps (Lewin, 1947).

Step one, unfreezing, refers to the disruption of the status quo or equilibrium. As previously stated, Lewin believed behavior is maintained by a set of driving and restraining forces (Biech, 2007; Burnes, 2004). Unfreezing can occur by increasing driving forces, weakening restraining forces, or finding a combination of the two (Burnes, 2004). Schein (1996) suggested unfreezing is comprised of three basic processes: (a) disconfirmation or dissatisfaction with the status quo, (b) induction of guilt or survival anxiety, and (c) the creation of psychological safety. This step is considered the most complex because the unfreezing refers to the breakdown of previous beliefs or actions (The psychology book, 2012).

The second step in Lewin's three-step model is movement. This step represents the movement away from the old behavior towards a new behavior; however, Schein (1996) noted the direction of movement is difficult to predict or control. Instead, all influencing forces must be identified and evaluated (Schein, 1996).

The third and final stage, freezing, occurs when the change has stabilized and settled back into a new equilibrium or status quo (Burnes, 2004). Burnes (2004) noted that for this behavior change to be sustained, Lewin argued it must occur within the influential context of group dynamics. Schein (1996) also suggested if the new behavior is not congruent with the individual, "it will simply set off new rounds of disconfirmation that often lead to unlearning the very thing one has learned" (p. 63).

While Lewin's work is now well-known, most of it was not published or highly regarded until after his death (Burnes, 2004). Consequently, there are some disputes surrounding his original theories and recognition. Some refer to his models as overly simplistic (Kanter, Stein, & Jick, 1992), while others argue that his work has been inaccurately attributed. Cummings, Bridgman, and Brown (2016) argued that Lewin should only be credited for the term "unfreezing" and that the remainder of his work is a "post hoc reconstruction" (p. 35) of others' interpretations and extensions of his original theory. Despite this argument, Lewin's three-step model and planned change approach continue to be widely referenced and influential in understanding behavior and motivating change. Another seminal and well-documented model is Rogers's (1962) innovation-diffusion theory.

Innovation-diffusion theory. Rogers's (1962) groundbreaking work studying rural farming and the diffusion of several agricultural innovations resulted in the innovation-diffusion theory, innovation-adoption process, adopter categories, and innovation characteristics widely cited today. Later iterations of his work expanded to include the Internet and modern-day technology innovations (Rogers, 2003). The processes and categories discussed in his research have been influential in the social sciences field and beyond.

Diffusion theory. Rogers (2003) defined diffusion as, "the process by which an innovation is communicated through certain channels over time among the members of a social system" (p. 10). Rogers (1962) investigated how new ideas spread through social relationships with those who did not know about the innovation. According to Rogers (1962) some innovations are communicated and adopted as a group decision, while other conditions allow for individual decision-making. Rogers (1962) also explored the social system and norms that influence the communication about an innovation. Rogers (2003) stated, "an innovation can be compatible or incompatible with (1) sociocultural values and beliefs, (2) previously introduced ideas, and/or (3) client needs for the innovation" (p. 240). In addition to social norms, innovation attributes that influence the rate of diffusion were also explored. These attributes are discussed in more detail in the next section. Rogers's (1962) also acknowledged the individual nature of the adoption process when deciding whether or not to reject or cease using one innovation in order to adopt a new idea or innovation.

Adoption process. Rogers (1962) posited the adoption of an innovation was a process, specifically an adoption process of decision-making.

> The innovation-decision process is the process through which an individual (or other decision-making unit) passes from first knowledge of an innovation, to the formation of an attitude toward the innovation, to a decision to adopt or reject, to implementation and use of the new idea, and to confirmation of this decision. (Rogers, 2003, p. 20).

Rogers (1962, 2003) described a sequence of stages in the innovation decision-making process "with a different type of activity occurring during each stage" (Rogers, 1962, p. 78). The five stages in the adoption process initially included (a) awareness, (b) interest, (c) evaluation, (d) trial, and (e) adoption (Rogers, 1962). As shown in Figure 10, these terms were later updated to (a) knowledge, (b) persuasion, (c) decision (adopt or not), (d) implementation, and (e) confirmation (Rogers, 2003).

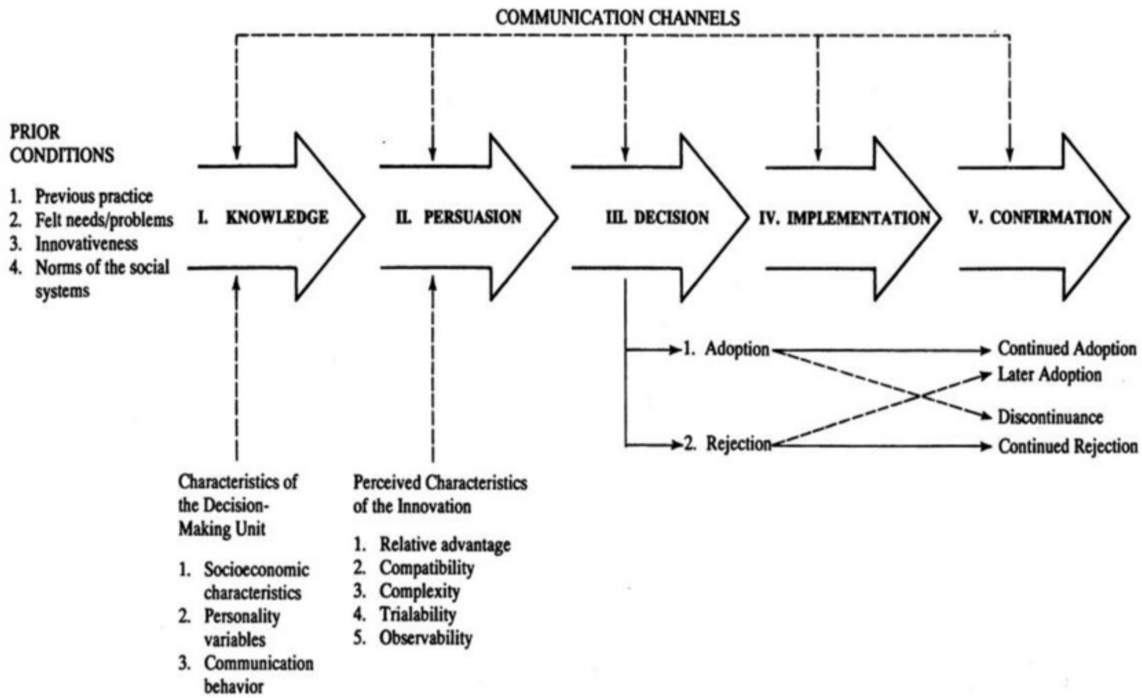


Figure 10. A Model of Five Stages in the Innovation-Decision Process (Rogers, 2003, p. 170).

Rogers's (1962, 2003) overall theory involves multiple components incorporating innovation attributes, social norms, the individual decision-making adoption process, and the diffusion of an innovation over time. An innovation or new idea is adopted by an individual and spread through a social system's communication channels. As new individuals learn about the innovation, they engage in a decision-making process to adopt or reject the innovation. The spread of the innovation across the social system is referred to as diffusion. This process repeats itself as new ideas and innovations are individually adopted and shared and either are rejected in favor of or replace the existing innovation within the social system (Rogers, 1962, 2003).

Technology Adoption Model. The Technology Adoption Model (TAM; Davis et al., 1989) is best understood through the influential lens of the Theory of Reasoned

Action (TRA) developed by Ajzen and Fishbein (1980). TRA suggests the significant and progressive influence of beliefs and perceptions on attitudes, attitudes on intention, and intention that generates behavior (John, 2015; Straub, 2009). Based off the TRA, Davis et al. (1989) proposed the Technology Adoption Model (TAM) attempting to explain and predict the impact of beliefs and attitudes on individual behavior (Agarwal & Prasad, 1999; Brosnan, 1998). According to Straub (2009), Davis's research was one of the earliest examinations between an individual's perceptions of a technology innovation and subsequent use or adoption. In his research, Davis (1989) identified perceived usefulness and perceived ease of use as two predictive factors influencing technology adoption (Brosnan, 1998; John, 2015). Usefulness is defined as, "the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context" (Davis, 1989, p. 985), while ease of use refers to the projected degree of effort expected by the prospective user (Davis, 1989). Although predictability is noted as a strength of this adoption model (Brosnan, 1998), other criticisms are raised. Agarwal and Prasad (1999) suggested individual differences are noticeably absent as possible factors influencing adoption. The authors list such factors as personality traits, demographic variables, role with regard to technology, level of education, and situational differences including training and experience (Agarwal & Prasad, 1999). Their work attempts to clarify the influence and relationship between individual differences and TAM constructs (Agarwal & Prasad, 1999).

Unified Theory of Acceptance and Use of Technology. Based on a comparative study of eight mainstream models, Venkatesh et al. (2003) formed a unified and synthesized model on individual acceptance of information technology (UTAUT). As a result, Venkatesh et al. (2003) identified four key factors of user intention and usage as well as four moderators of key relationships. Key factors influencing user acceptance include performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003), while moderators include items such as age, gender, and voluntariness (Venkatesh, Thong, & Xu, 2012). Venkatesh et al. (2003) defined performance expectancy as, "the degree to which an individual believes that using the system will help him or her attain gains in job performance" (p. 447). Performance expectancy is considered the strongest predictor of intention, although gender and age factors should be considered (Venkatesh et al., 2003). Another common theme identified was effort of expectancy, or associated ease of use. Venkatesh et al. (2003) pointed out that effort of expectancy may vary based on task, gender, and age. A third factor identified is referred to as social influence or how an individual perceives others' opinions towards the innovation. Social influence is most salient when use of an innovation is mandated (Venkatesh, et al, 2003). Finally, facilitating conditions is defined as, "the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system" (Venkatesh et al. 2003, p. 453).

While there is documented use of the UTAUT model over the past decade, the original model has been revised into a multi-level framework (Venkatesh, Thong, & Xu, 2016). This new framework maintains the original key factors effecting technology acceptance and use as a baseline but incorporates additional contextual factors such as environment, location, organization, and event as well as user, technology, and task attributes (Venkatesh et al., 2016). Straub (2009) suggested a strength of the UTAUT model lies in the attempt to incorporate willingness or voluntariness to use a new technology; however, he questions the validity of user technology acceptance when adoptions researched occur in a mandated environment (Straub, 2009).

Strategies of planned change. Zaltman and Duncan (1977) defined change as, "an alteration in the way an individual or group of individuals behave as a result of an alteration in their definition of the situation" (p. 9). This means that an individual determines when a situation necessitates a change in behavior; however, they also recognize that resistance is the common response to any proposed or advocated change. Consequently, Zaltman and Duncan (1977) believed resistance to change requires a set of strategic approaches. The four strategies identified (educative, persuasive, facilitative, and power) fall on a "continuum of degree of pressure exerted" (Zaltman & Duncan, 1977, p. 60) ranging from minimal to maximum external pressure. The proposed strategies can be used independently, combined, or in a sequence (Zaltman & Duncan, 1977).

While Rogers's (1962) change model explored positive innovation attributes, Zaltman and Duncan (1977) examined factors or barriers that negatively impact adoption. Zaltman and Duncan (1977) identified 18 resistance factors (Table 2) comprised of four major categories: cultural, social, organizational, and psychological barriers (p. 61). Using the identified resistance factors, change agents can determine which aforementioned strategy or combination of strategies might be most appropriate in response as well as use the list of resistance criteria to predict the likelihood of a successful change (Zaltman & Duncan, 1977). Although briefly mentioned here related to the Strategies of Planned Change model, other barriers to change, specifically technology adoption, will be discussed in a later section.

Table 2

Barriers to Change and Resistance Factors

Barrier Category	Resistance Factor
Cultural Barriers to Change	Cultural Values and Beliefs
	Cultural Ethnocentrism
	Saving Face
	Incompatibility of a Cultural Trait with Change
Social Barriers to Change	Group Solidarity
	Rejection of Outsiders
	Conformity to Norms
	Conflict
	Group Insight
Organizational Barriers to Change	Threat to Power and Influence
	Organizational Structure
	Behavior of Top-Level Administrators
	Climate for Change in the Organization
	Technological Barriers for Resistance
Psychological Barriers to Change	Perception
	Homeostasis
	Conformity and Commitment
	Personality Factors

Transtheoretical Model of Change. Although the Transtheoretical Model of Change (TTM) is most notably known for its application with health-related and addictive behaviors, it has also been applied to education (Mitchell, Parlamis, & Claiborne, 2015; Tyler & Tyler, 2006). TTM is comprised of three dimensions: a temporal dimension, a cognitive-behavioral dimension, and an individual difference dimension (Prochaska et al., 2008). The temporal dimension refers to the change that occurs as a process over time and in stages (Mitchell et al., 2015). The temporal dimension includes six stages of change, each with varying ranges of time: (a) precontemplation, (b) contemplation, (c) preparation, (d) action, (e) maintenance, and (f) termination (Prochaska et al., 2008). The second dimension, cognitive-behavioral, refers to the behavioral, cognitive, and emotional processes that occur during the change process. The 10 processes identified in the second dimension include (a) consciousness raising, (b) dramatic relief, (c) self-reevaluation, (d) environmental reevaluation, (e) self-liberation, (f) helping relationships, (g) counter-conditioning, (h) reinforcement/ contingency management, (i) stimulus control, and (j) social liberation (Prochaska et al., 2008). The third dimension of TTM is the individual difference dimension. This dimension includes two major factors: (a) decisional balance and (b) self-efficacy (Prochaska et al., 2008). "The TTM posits that self-efficacy can influence motivation to change and persistence in movement through the stages of change" (Kratochwill, 2005, p. 487). Change in the TTM is measured based on the intention to change prior to adopting a new behavior and the duration of behavior change once the target behavior has been reported or observed (Kratochwill, 2005).

CBAM. CBAM is a gestalt-based, theoretical framework comprised of three distinct dimensions used to understand and support an individual within the change process. An underlying component of the model is the emphasis on the individual experiencing the change—beginning with their concerns and moving outwards towards their knowledge; skill; behaviors; and ultimately, their ability to implement the change innovation with fidelity (Hall & Hord, 2015). In the following section, each component of the CBAM framework will be discussed in detail, including diagnostic instruments used to measure and determine a user's profile as well as critical understandings of each dimension. A brief history of the development of the framework, along with research studies using CBAM and criticisms of the model are also included. Central to the CBAM framework is the emphasis on the individual. As in this study, the individual is typically a teacher implementing a change in their classroom who is confronted with the arousal of concerns based on this change process. Examining and addressing teacher concerns is the foundational backbone to the development of this model.

CBAM history. The CBAM framework, like other concerns-based models, evolved from the pioneering work of Frances Fuller (George et al., 2006; Hall & Hord, 1987; Newhouse, 2001). Fuller (1969) proposed teachers experienced three clusters of concerns at varying developmental phases throughout their teaching careers: "a pre-teaching phase, an early teaching phase, and a late teaching phase" (p. 218). At the preteaching phase, teachers exhibited no discernible concerns, while those in the early teaching phase centered on concerns with self; however, in the late teaching phase, experienced teachers' concerns progressed to concerns with pupils and the impact of teaching. A later revision of this model would include concerns about tasks and situations. Fuller theorized as teacher experience increased, they consecutively progressed through each of the four concerns phases: Unrelated concerns, Self concerns, Task concerns, and Impact concerns (Hall & Hord, 2015). Based on Fuller's investigation of teacher concerns, two significant research strands have emerged: teacher development and the concerns-based model related to innovation adoption, CBAM (Conway & Clark, 2003).

Originally proposed in 1973, CBAM (see Figure 11) was developed by Hall et al. (1973) as part of their work at the University of Texas at Austin in the National Research & Development Center for Teacher Education (Hall, 2013). Referencing the work of Frances Fuller and observations from the piloted Personalized Teacher Education Program (Hall, 2013), the researchers developed the concerns-based framework with an emphasis on understanding the complex and personal side of change throughout the change process (Hall, 2010; Hall & Hord, 2015). Given the variance in how individuals experience, perceive, and respond to change, change facilitators use the CBAM framework to understand, describe, explain, and evaluate a user's change profile; predict probable behaviors (George et al., 2006); and recommend appropriate interventions to support implementation (Hall & Hord, 2015). "CBAM provides a sound understanding of the affective and behavioral dimensions of change, whatever the innovation, and the diagnostic tools provide ways to measure implementation from several different perspectives" (George et al., 2006, p. 2).

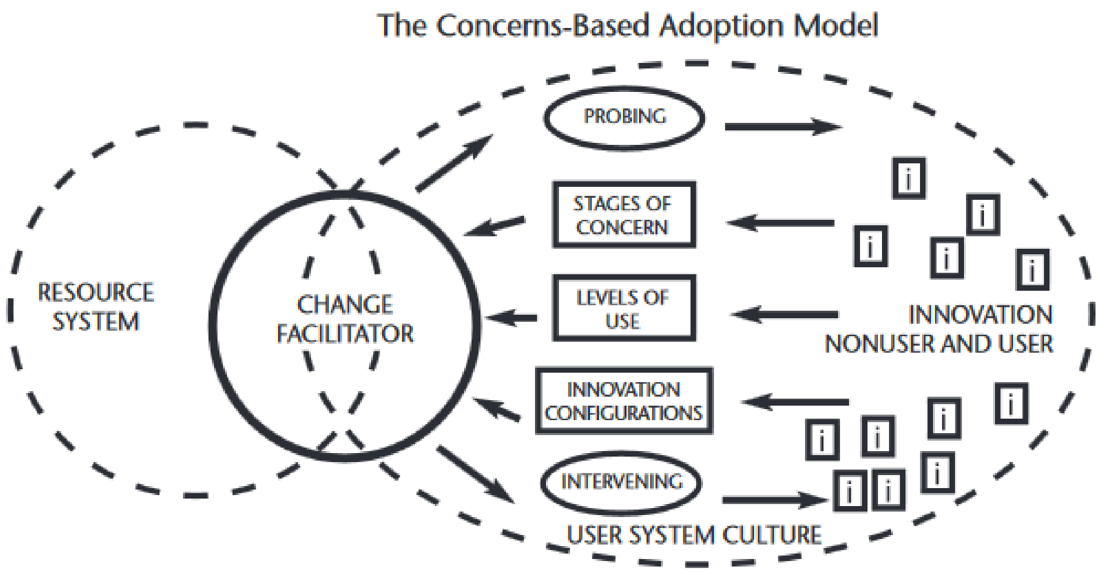


Figure 11. The CBAM (Hall & Hord, 2015).

CBAM diagnostic dimensions. CBAM is composed of three diagnostic dimensions: "Stages of Concern (SoC) address the personal side of change; Levels of Use (LoU) describe the behavioral profiles of nonusers and users; and Innovation Configurations (IC) represent the possible operational forms of the change" (Hall, 2013, p. 266). George et al. (2006) characterized the dimensions in simpler terms: "the Stages of Concern represent the who, the Levels of Use are the how, and the Innovation

Configurations are the what" (p. 5). The diagnostic dimensions can be used individually or collectively to measure a user's overall response to the adoption of an innovation and to demonstrate evidence of implementation (Hall & Hord, 2015). Figure 12 illustrates both the distinction and intersection of the diagnostic dimensions that make up the conceptual framework. The following sections will discuss each dimension individually.

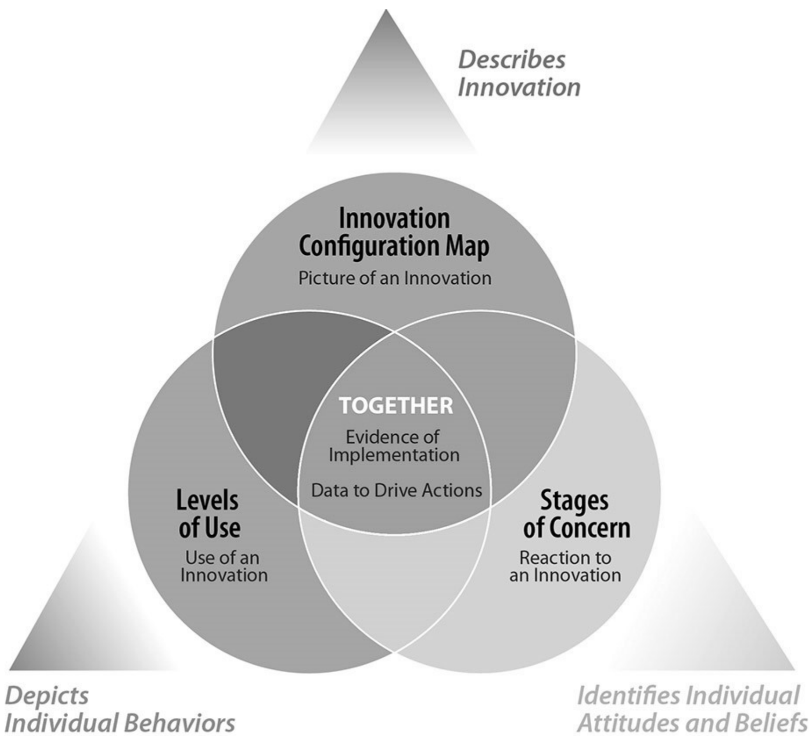


Figure 12. CBAM Diagnostic Dimensions (American Institutes for Research, 2018).

Stages of concern. The term *concerns* was originally attributed to teachers' feelings or perceptions (Fuller, 1969) and is defined by Hall and Hord (1987) as, "the composite representation of the feelings, preoccupation, thought, and consideration given to a particular issue or task" (pp. 58-59). Hall and Hord (2015) suggested the concerns identified by Fuller are not limited to only teachers: "the same *Unrelated, Self, Task*, and *Impact* pattern of concerns is found in people involved with all types of innovations and changes processes" (p. 84). In the context of CBAM, concerns result from an intense focus on a particular innovation. It is with this idea in mind that the hallmark dimension of CBAM, Stages of Concern (SoC), was developed.

While the SoC mirrors Fuller's original stages, it is further divided into seven additional categories of concern towards an innovation (Hall & Hord, 2015). Table 3 shows the four main stages of concern as well as the categorical divisions.

Table 3

Fuller and CBAM Stages of Concern

Fuller	CBAM Stages of Concern	CBAM Stages of Concern about an Innovation
Late Teaching Phase: Concern with Pupils	Impact	6 Refocusing 5 Collaboration 4 Consequence
Early Teaching Phase: Concern with Self	Task Self	3 Management 2 Personal 1 Informational
Preteaching Phase: Nonconcern	Unrelated	0 Unconcerned

Unrelated concerns indicate teacher concerns are focused on other innovations or initiatives; it is not a rejection of the innovation in question but an acknowledgement that concerns are directed elsewhere to an unrelated thing (Hall & Hord, 2015). As a user becomes involved with an innovation, they move into three progressive areas: self, task, and impact. Users concerned with how they are personally affected by the innovation are considered to be in the self area, which is further divided into two stages: informational (Stage 1) and personal (Stage 2). In these stages, user concerns may center on receiving additional information about the innovation or reveal concerns related to their skillset and ability to perform using the innovation or how it will affect their job status.

As users progress beyond concerns about self, they begin to encounter Task concerns related to how the innovation implementation will be managed. These management concerns (Stage 3) typically include concerns related to scheduling, organization, time and resources, and efficiency (Hall & Hord, 2015). The final area, impact, is divided into three stages: consequence (Stage 4), concerns about clients' learning; collaboration (Stage 5), concerns about using the innovation collaboratively with others; and refocusing (Stage 6), concerns related to widespread innovation applications, consideration of innovation refinement, or alternatives to replace the innovation altogether (Hall & Hord, 2015). The measurement of CBAM Stages of Concern about an innovation through a specific instrument, the Stages of Concern Questionnaire (SoCQ), is discussed in Chapter 3.

Levels of use. The second dimension of CBAM is the Levels of Use (LoU). In contrast to the SoC, which describes user feelings, thoughts, and concerns about an innovation, the LoU dimension describes user behavior and actions (Loucks et al., 1975). A user's Levels of Use is determined through a specific focused interview protocol and rating process using the LoU Chart (Appendix A). The interview protocol and rating process will be discussed in more detail in Chapter 3.

An abbreviated version of the LoU Chart is presented in Table 4. The LoU Chart is divided into eight levels ranging from nonuse (Level 0) to renewal (Level VI). Each level contains operationalized definitions describing the range of a user's behavior characteristics (Hall & Hord, 2015; Loucks et al., 1975). The LoU chart is further organized by seven behavioral categories: knowledge, acquiring information, sharing, assessing, planning, status reporting, and performing (Loucks et al., 1975). Seven Decision Points also serve as critical behavior markers that denote when a specific LoU action has occurred. The LoU chart is utilized postinterview in order to establish multiple data points of behavior, assign an overall LoU rating, and determine recommended interventions (Hall & Hord, 2015).

Table 4

Abbreviated LoU Chart Featuring LoU Categories, Levels, and Decision Points, adapted from the LoU Chart (Loucks et al., 1975, pp. 8-9)

Levels of Use	Knowledge	Acquiring Information	Sharing	Assessing	Planning	Status Reporting	Performing
Level 0 Nonuse							
Decision Point A: Takes action to learn more detailed information about the innovation.							
Level I Orientation							
Decision Point B: Makes a decision to use the innovation by establishing a time to begin.							
Level II Preparation							
Decision Point C: Begins first use of the innovation.							
Level III Mechanical Use							
Decision Point D-1: A routine pattern of use is established.							
Level IV-A Routine							
Decision Point D-2: Changes use of the innovation based on formal or informal evaluation in order to increase client outcomes.							
Level IV-B Refinement							
Decision Point E: Initiates changes in use of the innovation based on input of and in coordination with what colleagues are doing.							
Level V Integration							
Decision Point F: Begins exploring alternatives to or major modifications of the innovation presently in use.							
Level VI Renewal							

Innovation configuration. The third dimension of CBAM is the Innovation Configuration, used to describe the innovation itself and the operational forms it can take (Hall & Hord, 1987). While SoC and LoU address the concerns and behaviors associated with the innovation, the IC addresses what the implementation looks like in application, specific to the user and their setting. As users implement innovations, they may adapt or modify the innovation, customizing its use to accommodate their setting and clients;

however, too much modification may result in what Hall and Hord (1987) referred to as a "mutation," which no longer resembles the original innovation or its intended use. According to Hall (2010), "it is likely that a range of configurations will be found in practice with most technology changes" (p. 249). This hypothesis assumes changes in technology influence how the innovation is used. When the innovation is a technology change itself, adaptation and "mutation" are to be expected. He went on to state,

> Having more variation in configurations becomes a problem when there is a need to document results. Unless a particular configuration(s) associated with higher outcomes can be described, future implementers will not know which components and practices really are most critical to success. (Hall, 2010, p. 249)

In order to measure and maintain innovation fidelity, an Innovation Configuration Map is utilized. The development, organization, and use of the map is discussed further in Chapter 3.

Criticism of CBAM. Despite its well-documented use in research literature, some researchers suggest CBAM is lacking. Bailey and Palsha (1992) argued for a five-stage model; while based on a correlation between scores, Cheung, Hattie, and Ng (2001) recommended combining Stages of Concern 1 and 2. Straub (2009) confirmed the usefulness of the CBAM model when addressing individual concerns and the educational context but suggested that a limitation lies in its disregard for positive perceptions of an innovation. Rust and Freidus (2001) acknowledged the strength in CBAM as a powerful explanation of the process of leading and adopting innovations but argued that "it does not take into account the subtle and very powerful shaping effect of personal autobiography" (p. 33). This criticism asserts that CBAM overlooks how prior experience and self-reflection set the context for personal change to occur (Rust &

Freidus, 2001).

Despite the criticisms, the CBAM model endures as a rigorously validated and relevant model towards understanding teacher change (Anderson, 1997; Ellsworth, 2015a). This stable longevity aids in the model's reliability and widespread use by researchers. For the purposes of this research study, the use of the CBAM dimensions, diagnostic tools, and resulting stages, levels, and configurations is discussed more fully in Chapter 3.

As previously stated, there is no single, unified, widely adopted adoption theory or model (Ellsworth, 2015a). The purpose of this section was to present a variety of models, frameworks, and strategies used to predict and explain the change adoption process; however, the adoption theories and models are only one component of understanding the change process. The following section discusses those who adopt and implement innovations, adopters, as well as adopter types, and influencing factors.

Adopter Types

In understanding the whole change process, one must also understand the adopter. Understanding encompasses the predisposition of an individual to drive, favor, or resist adoption (Ellsworth, 2015b). It also provides insight on expected distribution, generalized adopter characteristics, and how an individual will respond and influence others within the organization. Although a simplified, three-category framework is more common today (Ellsworth, 2015b), it is worth reviewing the original five-category framework developed by Rogers (1962) to describe the types of adopters observed during the adoption process. Adopter categories on the adoption process continuum include innovators, early adopters, early majority, late majority, and laggards (Rogers, 1962, 2003).

Innovators. Innovators are the first category of users on the adoption continuum. Innovators are viewed as enthusiastic and open to try new ideas; however, their engagement at the earliest level often comes with a high risk of setbacks and failure (Rogers, 1962). Consequently, compared to other adopter categories, innovators must be able to tolerate a higher level of uncertainty surrounding the innovation and potential outcome (Rogers, 2003). Rogers (2003) noted that this role is viewed as a gatekeeper, one who is responsible for allowing new ideas to flow into the system.

Early adopters. Early adopters are viewed with great respect and often work in collaboration with change agents (Rogers, 1962). Their role serves as a "socially respected bridge between the venturesome innovators through which new ideas enter the organization and the skeptical late adopters who remain to be convinced" (Ellsworth, 2015b, p. 244). Rogers (2003) described the early adopter as one who has the highest degree of opinion leadership and whose advice is often sought out by potential adopters. Compared to the innovator who makes risky decisions, the early adopter makes judicious innovation decisions (Rogers, 2003). Early adopters' approval and subsequent adoption of an innovation decreases the perceived uncertainty about an innovation (Rogers, 2003). Since early adopters may advocate for or against a particular innovation, it is critical that change agents identify this group early in order to recognize and model strategies for resolving potential concerns that may arise with other adopter categories throughout the change process (Ellsworth, 2015b).

Early and late majority. Early majority adopters are described as adopting an innovation prior to the average user. Although they may demonstrate a longer adoption period, those in the early majority category hold "an important link in the process of legitimizing innovations" (Rogers, 1962, p. 170). According to Rogers (2003), the early adopters make up one third of all members in a system and serve as a peer influence to the following category of adopters, late majority.

Late majority adopters also make up one third of the system and typically adopt an innovation just after the average member (Rogers, 2003). Late majority adopters are heavily influenced by public opinion in order to adopt an innovation (Rogers, 1962). In addition to peer pressure and general consensus, Rogers (2003) noted most of the uncertainty surrounding an innovation must also be removed in order for adoption to occur.

Laggards. The final adopting category is laggards. According to Rogers (1962), laggards are primarily influenced by traditional values, generational precedent, and past practices. They are described as being apprehensive and skeptical of innovations, innovators, and change agents themselves. Although the term laggard may hold a negative connotation, Rogers (2003) claimed it is not meant to be disrespectful and instead suggests it reflects a pro-innovation bias on the part of the pro-innovation adopters. Laggards are described as extremely cautious in adopting innovations and must have assurance that a new innovation will not fail prior to adoption (Rogers, 2003). In the case of laggards, if and when adoption occurs, a new innovation may have already emerged to take its place (Rogers, 1962).

Other adopter types. Additional peripheral populations and behaviors not included in the five main adopter categories, but critical to the discussion of change adoption, are those who resist, reject, or discontinue an innovation. Resisters are defined as those who attempt “to maintain the status quo in the face of pressure to alter the status quo” (Zaltman & Duncan, 1977, p. 63). The authors went on to state, however, that resistance is not the opposite of acceptance but provides insight and data about the identity, attitude, norms, values, and beliefs of an organization towards innovations, change, established relationships, and outsiders (Zaltman & Duncan, 1977). Rather than viewing resisters and change agents in conflict with one another, Fullan (2007) argued resisters can be a source of learning. Resisters may have good, alternative ideas or perspectives that can shed light on implementation problems. Furthermore, resisters may even be right in their response towards the innovation change as a fad or misguided (Fullan, 2007). Zaltman and Duncan (1977) reasoned resistance can be viewed as a positive force when the objection to the advocated change may be harmful to society. Learning from resisters is one way to reduce pro-innovation bias and remain open to why an innovation might fail to be implemented (Rogers, 2003). Resistance may also force change agents to earnestly assess and modify their implementation plan or increase the compatibility of the change innovation that better aligns with the adopters' needs or organizational structure or culture (Zaltman & Duncan, 1977). As a result, Fullan (2001) stressed recognizing and acknowledging resisters is crucial in an organization such as a university.

Another group are those who reject a particular innovation. Rogers (2003) suggested there are two types of rejection behavior: active and passive rejection. Active rejection refers to the full consideration of an innovation prior to determining not to adopt it, while passive rejection suggests the innovation was never truly considered (Rogers, 2003). Finally, in contrast to active rejection, when an innovation is rejected prior to adoption, discontinuance is defined as, "a decision to reject an innovation after having previously adopted" (Rogers, 2003, p. 178); however, both rejection and discontinuance may be indicators of why an innovation fails to be adopted or implemented or that a new innovation is taking its place (Rogers, 2003).

Perceived Attributes of Innovations

Rogers (1962, 2003) also identified five factors that influence the rate of adoption, or length of time required for a percentage of the population to adopt an innovation. The five influencing factors include (a) relative advantage, (b) compatibility, (c) complexity, (d) divisibility (1962) or trialability (2003), and (e) communicability (1962) or observability (2003). According to Rogers (2003), nearly half of the variance in the rate of adoption of innovations can be attributed to these five factors.

Relative advantage is viewed as, “the degree to which an innovation is superior to ideas it supersedes” (Rogers, 1962, p. 124); however, Rogers (1962) contended an innovation’s actual advantage or comparative value is less important than its perceived relative advantage. The perception of relative advantage speaks to the individual nature of the adoption process. Zaltman and Duncan (1977) claimed relative advantage is most important at the interest and evaluation stages of the adoption decision process.

Compatibility refers to “the degree to which an innovation is consistent with existing values and past experiences of the adopters” (Rogers, 1962, p. 126). The more congruent an innovation is to a user’s values, experience, and perceived needs, the more likely the user will adopt the innovation (Ellsworth, 2000). Zaltman and Duncan (1977) believed that the compatibility or fit of a change includes psychological, sociological, and cultural factors. “An innovation can be compatible or incompatible with (1) sociocultural values and beliefs, (2) previously introduced ideas, and/or (3) client needs for the innovation” (Rogers, 2003, p. 240).

Another factor to be considered is the complexity of the innovation—in use or in understanding (Rogers, 1962; Zaltman & Duncan, 1977). “The greater the degree of difficulty in using or understanding a change, the less likelihood that it will be adopted voluntarily" (Zaltman & Duncan, 1977, p. 14). Ellsworth (2000) suggested complexity may also refer to the difficulty surrounding an innovation's intended use or application. For example, Rogers (2003) cited perceived complexity as a negative contributing factor in the rate of adoption of home computers. Given that perceptions, use, and understanding will vary from individual to individual, the degree of complexity will vary among adopters.

The fourth factor influencing rate of adoption is called trialability (Rogers, 1962, 2003). Trialability refers to the extent to which a prospective adopter may try out an innovation for a short period prior to full adoption (Ellsworth, 2000) or implementation on a limited scale (Zaltman & Duncan, 1977). This process allows individuals to determine how an innovation might work within their own conditions or environment (Rogers, 2003). Rogers (2003) suggested innovations with higher trialability will result in a more rapid rate of adoption.

A final factor, observability, refers to the ability to observe an innovation used by others. Potential adopters may benefit more from observing the innovation in application rather than simply reading or hearing about it (Ellsworth, 2000). Rogers (1962) believed the observable nature of an innovation and the ability to communicate and describe the innovation to others significantly impacted the rate of adoption. Rogers (2003) noted software components of technological innovations may be more difficult to observe than hardware components, potentially resulting in a slower rate of adoption.

Based on Rogers's (1962) findings, innovations displaying these influencing factors are more likely to be adopted in a shorter amount of time than those without; however, according to Hall (2010), "technology innovations add an additional complexity" (p. 247). While a variety of factors have been found to influence social and individual change, for the purposes of this paper, the following section will examine possible barriers and concerns that may specifically impact technology-related innovation adoption.

Barriers and Concerns to Technology Innovation Adoption

A review of literature over the past 20 years reveals that factors identified as concerns and barriers to technology adoption are consistent over time and technology innovation. Ribeiro (2014) pointed out that the historical phenomena of fears and concerns related to technology are hardly new. Furthermore, the mere provision and encouragement to use these new technologies is inadequate to ensure widespread adoption. Therefore, in order to facilitate the adoption process and continued implementation, administrators, change facilitators, and IT personnel, along with other stakeholders, must identify individual influencers and barriers to the adoption process (Surry, 2015, p. 584). Identified barriers and concerns related to technology adoption include fears, self-efficacy, mindset, time, infrastructure, support, and perceived value.

Fears. According to Fullan (2001), common responses to change include feeling “anxious, fearful, confused, overwhelmed, deskilled, cautious, and—if they have a moral purpose—deeply disturbed” (p. 40). Fear of failure is specifically noted as a barrier to the adoption of technology (Beggs, 2000). Concerns may manifest themselves as fear of making performance mistakes (Thatcher & Perrewe, 2002); fear of appearing incompetent (Rutherford & Grana, 1995); or as technophobia, referring to a fear, anxiety, or negative opinions towards computers and technology (Ben-Jacob & Liebman, 2009; Brosnan, 1998; Gupta, 2001; Linnell, 1992). Zaltman and Duncan (1977) referred to this barrier as, “saving face” (p. 70). The authors also refer to one’s inclination to assume risk and tolerate uncertainty as additional influencing factors (Zaltman & Duncan, 1977).

A second category of fear is presented as a fear of change (Matthew, Parker, & Wilkinson, 1998), specifically as it relates to change in technology. Fullan (2001) described expected responses about change to include negative terminology such as fear, danger, and anxiety. In an effort to avoid feelings of anxiety, individuals may avoid situations that invoke these feelings due to change (Fagan, Neill, & Woolridge, 2003). Ribeiro (2014) wrote about "a constant force that causes us to protect and isolate ourselves from the consequences of technological advancement" (p. 31). Consequently, individuals will avoid situations involving technology that invoke feelings of anxiety or fear. Ribeiro went on to state, "a philosophy of fear leads to an aversion to change among educators" (p. 33) and must be overcome in order to embrace technological change. Equally, fears may also feed into one's belief in themselves and their ability to perform. This is known as self-efficacy.

Self-efficacy. According to Bandura (2002), "people make choices and motivate and regulate their behavior on the basis of belief systems" (p. 3). This belief system, self-efficacy, refers to the belief in the self's capability to perform a particular behavior (Bandura, 1977). The degree of one's self-efficacy determines how a user believes they will perform at a task, thus influencing their behavior to act. Bandura (2002) suggested individuals with low self-efficacy negatively view risk as something to be avoided rather than to be embraced as an opportunity. Given the social influence on efficacy, one may also derive their own self-efficacy from their perceived collective efficacy of the organization (Hord & Roussin, 2013). Although Venkatesh et al. (2003) did not include self-efficacy and anxiety as significant determinants influencing behavior or intention, Hord and Roussin (2013) argued the strength of efficacy beliefs directly impacts individual and organizational decisions about future actions. In addition, lower self-efficacy may also impact adoption persistence, resulting in rejection of the innovation (Reid, 2017). When a person's efficacy belief system relates to their capability to perform using computers, it is known as computer self-efficacy (Compeau & Higgins, 1995).

Computer self-efficacy. Coined by Compeau and Higgins (1995), computer self-efficacy refers to an individual's self-efficacy as it relates to their computing behavior. In their influential work, Compeau and Higgins found significant relationships between computer self-efficacy and technology acceptance. Belief in one's computer self-efficacy is not limited to a set of skills. Instead, Compeau and Higgins suggested it applies to a greater application of those skills onto broader tasks. Computer self-efficacy magnitude refers to the level of capability or support expected to complete a difficult computing task (Compeau & Higgins, 1995). The strength of one's computer self-efficacy refers to the level of perceived and displayed confidence by the user, while generalizability reflects their ability to apply computing skills to other systems or applications (Compeau & Higgins, 1995).

While research suggests a positive correlation between computer self-efficacy and IT adoption (John, 2015), instructors may be reticent to adopt technology innovations due to negative past experiences related to their computer self-efficacy. Therefore, use alone is not an adequate indicator of a high computer self-efficacy. Technophobes or individuals with low computer self-efficacy may be required to interact with technology on a regular basis but still attempt to minimize interaction whenever possible (Brosnan, 1998). As a result, computer self-efficacy may also have a significant impact on continued or ongoing use (Deng, Doll, & Truong, 2004). Further study by Thatcher and Perrewe (2002) investigated the relationship between computer anxiety, computer self-efficacy, and other stable traits that relate to technology acceptance and use. Traits such as personal innovativeness, i.e., a willingness to try, and trait anxiety, or how a person confronts challenges, may also be sources that contribute to one's computer self-efficacy.

Skill and prior experience. "Change efforts most often require the acquisition of new content knowledge and/or additional instructional techniques and strategies" (Hord & Roussin, 2013, p. 15). Learning new skills may arise as a barrier before adoption or during implementation. This source of resistance demonstrates a concern regarding one's technical skills and ability to implement the change adequately (Zaltman & Duncan, 1977). Rutherford and Grana (1995) listed the challenge of understanding technology lingo and the skill of knowing where to start a task as two barriers that may prevent faculty from learning new technology. Deng et al. (2004) suggested users will struggle with the conflict between task and computer knowledge domains. Users must be able to apply skills learned to their work or task required. Furthermore, the authors stated that "user behaviour in training is often passive" (Deng et al., 2004, p. 398). This observation suggests that users may reflect confidence during the training session but are unable to apply those skills on their own in a self-directed environment. Another contributing variable to innovation adoption is a user's amount of prior experience (Talukder, 2014). "Prior experience refers to individuals' previous use of the same or similar innovation and general innovation skills" (Talukder, 2014, p. 43). Finally, Fullan (2001) also described an "implementation dip" (p. 40) in performance and confidence that occurs when grasping a new skill or understanding related to the innovation. In order to understand the implementation dip, Fullan (2001) suggested leaders must recognize co-occurring barriers—"the social-psychological fear of change, and the lack of technical know-how or skills to make the change work" (p. 41).

Positive and negative experiences such as previous technology use, training and professional development, and teaching and learning experiences all contribute to the formation of an individual's self-efficacy (Reid, 2017). Consequently, how past experiences are interpreted can have a significant influence on self-efficacy and one's belief about whether they will succeed or fail in the future (Siegle, 2000).

> When individuals have experiences that build their mastery of IT (instructional technology) applications and are in an environment with positive situation support, they tend to have higher levels of computer self-efficacy. Higher computer self-efficacy, in turn, is associated with usage. (Fagan et al., p. 101)

Reid (2017) suggested identifying these past experiences and hidden issues influencing one's self-efficacy and technology adoption can be challenging. Encouragement, support (Compeau & Higgins, 1995; Fagan et al., 2003), and training (Thatcher & Perrewe, 2002) are just some of the recommended sources to positively influence a user's computer self-efficacy. Computer self-efficacy may also be impacted by a user's exposure and access to digital technology.

Digital natives, immigrants, and the digital divide. When observing technology adoption and resistance, some are quick to note the age of the user. Generationally, age is used as a variable to separate users between those who were born in a digital era and those who were not. Prensky (2001) coined the term "digital native," as it refers to the generation of users who were born in the digital era and who "speak and breathe the language of computers and the culture of the web into which they were born" (Zur & Walker, n.d., p. 2). In contrast, digital immigrants refer to those who grew up prior to computers and the Internet and who have immigrated into the digital age in varying degrees.

Zur and Walker (n.d.) argued not all digital natives readily adopt technology and not all digital immigrants resist. Instead, they suggest that digital natives and immigrants each respectively fall into three distinct groups. According to Zur and Walker (n.d.), digital natives are either avoiders who severely contrast their digital native peers, minimalists who engage with technology as necessary, or enthusiastic participants who fully embrace technology into every facet of their lives. Digital immigrants on the other hand have their own avoider group who prefer to interact with technology as little as possible. The other two groups consist of reluctant adopters who may attempt to engage with technology but struggle as it does not come intuitively and enthusiastic adopters who demonstrate a high level of engagement and interest in leading a digital life (Zur & Walker, n.d.).

An additional contributing factor previously addressed is the impact of what is termed as the digital divide. This refers to an individual's relative advantage or disadvantage due to the Internet (Rogers, 2003). Digital divide typically impacts those who are economically disadvantaged, rather a specific age group, or decade an individual was introduced to technology. While age, access, and time of exposure may be a contributing factor, another psychological barrier to adoption is one's mindset and attitude.

Mindset and attitude. Research consistently shows that attitude contributes to the adoption or resistance of technology. Well known adoption models such as the Diffusion of Innovations Theory (Rogers, 1962), TAM (Davis, 1989), and CBAM (Hall et al., 1973; Hall, Loucks, Rutherford, & Newlove, 1975) equally include attitude as one of the contributing factors affecting a user's adoption behavior. Brosnan (1998) wrote about research findings in the 1980s correlating negative attitudes with resistance towards computers, a new technology at the time. In a study conducted by Bohlin and Hunt (1993), researchers found that previous computer experience correlated with positive student attitudes, surmising that successful experiences resulted in a favorable sense of achievement. In addition to positive attitudes, mindset plays a key part in the learning process.

Known for her seminal work on fixed and growth mindsets, Dweck (1999, 2012) believed in an individual's ability to become considerably more intelligent (growth mindset) through effort and education. In contrast, a fixed mindset refers to the belief that talents or intelligence are innate and fixed traits (Dweck, 2012, 2016). When considering mindsets and technology adoption, those with fixed mindsets may determine that their ability to learn a new innovation is fixed and therefore adoption or sustained implementation is futile. According to Dweck (2012), a fixed mindset results in avoidant behaviors and lower resilience when faced with challenges or appearing unintelligent. In contrast, however, even those who express a low confidence in their ability may still embrace challenging tasks when operating from a growth mindset (Dweck, 2012). Dweck (2012) also wrote that those with a fixed mindset tend to reject information when it does not align with their preestablished belief. On the other hand, those with a growth mindset are more comfortable with adjusting their beliefs based on new information or ideas.

Dweck (2016) suggested rather than individuals being of either an exclusively fixed or growth mindset, that instead it is a mixture of mindsets, "and that mixture continually evolves with experience" (p. 3). Dweck (2016) suggested in order to grow, individuals must identify our own personal "fixed-mindset triggers" (p. 3). She advocated pursuing a growth mindset results in deeper understanding and "a richer sense of who they are, what they stand for, and how they want to move forward" (Dweck, 2016, p. 4). Identifying fixed-mindset triggers can help determine appropriate strategies when the fixed-mindset is observed during the adoption process.

Time requirements. Reid (2012) listed time requirements as one of the leading barriers to technology adoption among faculty. In some cases, users may be concerned about the amount of available time a user has to learn an innovation. According to Deng et al. (2004),

> the time period required for users to acquire and assimilate knowledge of a specific software package and learn how to apply it successfully to their work will depend on (1) the complexity of the knowledge and skill base in both the software and task domains, and (2) the slope of the individual's learning curve. (p. 397)

A second time concern may surround current workload (Chen, 2009) or how much time the newly adopted innovation will detract from other existing areas of focus. Instructors may have to consider what will be lost or replaced when adopting a new technology innovation (Rutherford & Grana, 1995). Naisbitt (2006) called this mindset, "Don't add unless you subtract," stating that "when something new is introduced, something must be omitted or reduced" (p. 18). Even the rate of speed in which the change is implemented, either too quickly or too slowly, can be a factor (Zaltman & Duncan, 1977). A final consideration related to time is the investment of time to develop a product. Sammons (1994) listed faculty perception of lack of time as the second major deterrent to developing materials, updating a course, or learning new technology. Regarding developing multimedia lectures, professors reported spending an average of 20 hours per week, or 150-200 hours total, converting one course. Reid (2012) concluded time requirements occur at every stage of the adoption process and that sustained implementation may depend on administrative support and understanding. In addition to time, other institutional barriers may be contributing factors to technology adoption.

Institutional support. As already discussed, institutional support may be a critical component in the adoption process. Barriers such as infrastructure, financial and physical resources, incentives, and initial and ongoing training may all contribute to the success or failure of an individual's adoption of an innovation. Beyond the required initial infrastructure investment of internet and wireless systems, servers, and computer software and hardware, a considerable amount of research points to sustained financial support as a potential barrier and, in some cases, a predictor of success in technology adoption (Surry, 2015, p. 585).

Financial support. Based on reported growth, research has shown that institutions see the monetary value of the online education market (Allen & Seaman, 2011). Despite the earning potential, one significant institutional barrier is the availability of funds to use and maintain appropriate technology (Chen, 2009). Hargreaves and Fullan (2001) cited Levin who emphasized the need for adequate infrastructure and resources at all levels is required to fully support change across an entire system; however, the monetary investment required to support these programs is not always equaled. A study conducted by Bussey, Dormody, and VanLeeuwen (2000) found that inadequate budget, facilities, and resources were frequently cited as barriers to technology adoption. When funding and support expire, Rust and Freidus (2001) cautioned, teachers will revert to previous, more familiar patterns and practices. Without adequate, continuous support, the newly adopted innovation is abandoned and change is stymied.

Compensation and incentives. Institutions may also use incentives, rewards, or compensation as a way to encourage innovation adoption. Rogers (2003) defined incentives as, "direct or indirect payments of cash or in kind that are given to an individual or a system in order to encourage behavioral change" (p. 236). When describing the purpose of incentives, Rogers (2003) stated they may be used to increase relative advantage of an idea or speed up the diffusion of innovations. Rossman, Corbett, and Firestone (1988) referred to literature directly linking incentives and promoting sustained implementation, while Surry (2015, p. 585) included incentives and rewards as factors that influence the likelihood of an organization's successful technology adoption over other organizations. In a Babson Survey on the views of faculty teaching online, faculty gave the lowest ranking to their institution's incentives for developing and teaching online courses (Seaman, 2009). Incentives at the higher education level may include physical resources; monetary rewards or funding grants; flexible schedules, decreased teaching loads or higher release time; investment in equipment and programs; promotion and tenure; and verbal and written recognition (Reid, 2012). Research demonstrates that the use of incentives accelerates innovation adoption and diffusion; quality and sustainability are jeopardized if and when the incentive is removed (Rogers, 2003). While most incentives are perceived as positive motivating factors, negative incentives may also be utilized. Within academia, negative incentives might include loss of additional compensation opportunities, unfavorable course assignments and schedules, or lack of promotion and tenure advancement.

Training and support. Another commonly cited barrier to technology adoption is the lack of perceived or real support (Reid, 2012). Support may be required at varying times and degrees during the adoption and implementation process. "Support includes training, both initial and ongoing, for personnel who will use the technology; technical support to install, maintain, repair, and upgrade the new technology and related technologies; and ongoing, meaningful administrative support by both frontline and senior-level management" (Surry, 2015, p. 586). Support may come in the form of professional development, assistance with aligning pedagogy, introducing or replacing a new technology in the classroom, and troubleshooting for both faculty and students as well as technical support integrating the new innovation with existing systems and practices (Reid, 2012). A 2015 report on Educational Technology and Faculty Development in Higher Education revealed institutions providing instructional technologists and designers, designated centers for instructional technology and teaching/excellence, opportunities for technology experimentation, and technology specific training were all contributing factors to positive faculty perceptions about their institution's assistance with technology integration.

Perceived value. Another faculty concern reported is the perceived value of the technology innovation. Bandura (2002) posited, "ready access to communication technologies will not necessarily enlist active participation unless people believe that they can achieve desired results by this means" (p. 10). For example, research found that instructors are more motivated to integrate technology into their practice if there is evidence that it will positively impact student learning (Brooks, 2015). As a component of the Diffusion of Innovation Theory, Rogers (1962) referred to this evaluative position as relative advantage, while Davis's (1989) TAM model used the term, perceived usefulness. This reflects a position that a user must find value in the innovation to meet an outcome beyond its relative popularity or availability. Zaltman and Duncan (1977) also pointed out that perception relates to accepting that the status quo is no longer adequate and therefore necessitates a change. Without this realization, the innovation holds no perceived value. Users may also evaluate negative perceptions as well. For example, an innovation may be perceived as a source of additional stress (Lynch, 2002), work, or cost, causing the user to consider both the advantages and disadvantages of adoption.

While categorically consistent over time, specific barriers, concerns, and beliefs remain individual to the instructor (Reid, 2017). Barriers may also be overlapping and occur at various points during the adoption process. "Among the types of barriers that faculty face are their individual and personal preferences, beliefs, and comfort levels in how pedagogy, content and technology mix" (Reid, 2017, p. 381). Institutions can benefit from a complete understanding of barriers and concerns in order to provide appropriate, targeted support during the adoption process. Understanding the innovation from the users' perspective is key (Surry, 2015, p. 585). Levin is quoted as saying, "in reality, if a change is to have real and lasting impact, all of these elements have to be addressed. Implementation cannot be assumed or left to change; it must be carefully nurtured" (as cited in Hargreaves & Fullan, 2001, p. 264). Those who answer the challenge to lead, nurture, and facilitate individuals and organizations through the change process are referred to as change agents. The following section discusses the practice of change agency, the role and characteristics of change agents, and the advantages and disadvantages between, within, and external to an organization.

Change Agents

The term change agency is "a broad term describing the process, role, or paradigm associated with leading innovation or its diffusion in any context or setting" (Ellsworth, 2015a, p. 97). Individuals whose responsibility it is to guide the innovation-decision process are known as change agents (Rogers, 2003) or change facilitators (Hall

& Hord, 1987). Zaltman and Duncan (1977) described one of the main functions of a change agent as, "establishing a link between a perceived need of a client system and a possible means of satisfying that need" (p. 187). While some use the practitioner terms change agent and change facilitator interchangeably (Ellsworth, 2015a), others draw a clear distinction. Hall and Hord (1987) argued the difference between these two terms:

> The term [change] agent suggests a power-invested, one-way, coercive/ manipulative approach to change that from our research and experience, appears to be unreasonable and impossible. The [change] facilitator's job is to facilitate, which means to assist others in ways relevant to their concerns so that they become more effective and skilled in using new programs and procedures. (p. 11)

In contrast, Zaltman and Duncan (1977) and Havelock and Havelock (1973) focused less on the name and more on the roles of the change agent.

Change agent roles. Havelock (1973) described four main ways in which a person can act as a change agent: (a) catalyst, (b) solution giver, (c) process helper, and (d) resource linker. As a catalyst, a change agent is needed to overcome the inertia required to change the status quo (Havelock, 1973). Other change agents serve as solution givers, providing concrete ideas about how to effect change, when to provide solutions, and how to effectively support clients as they adapt solutions to their own context (Havelock, 1973). According to Havelock and Havelock (1973), the role of a process helper is often overlooked. This role aids clients during various stages of the problem-solving and innovation process (Havelock & Havelock, 1973). Finally, the role of a resource linker connects clients to knowledge, physical resources, solutions, and other people within and external to their organization (Havelock & Havelock, 1973).

Similarly, Rust and Freidus (2001) described the multi-dimensional sides of a change agent as (a) negotiators, (b) nurturers, (c) teachers and learners, and (d) curriculum developers. Negotiators are strategic in nature, identifying users' needs as well as constructing an intentional plan of action (Rust & Freidus, 2001). In addition, this role focuses on successful collaboration and what steps and dynamics must be considered in order to achieve the intended outcome (Rust & Freidus, 2001). Change agents as nurturers on the other hand attend to the personal and interpersonal factors influencing user motivation and willingness to learn, explore, and adopt innovations (Rust & Freidus, 2001). Agents in this role draw deeply on personal experience and their knowledge of adult learning. Key to the nurturer relationships is a solid foundation of trust (Rust & Freidus, 2001). The third role of a change agent is that of a teacher and learner. These agents are teachers of adults and view themselves and the adults with whom they work as learners. More importantly, they view "that adults construct new knowledge not by simple acquisition of skills and practices but by the process of drawing on prior understandings to make sense of the world" (Rust & Freidus, 2001, p. 7). This change agent role focuses on context and understanding the individual in order to motivate learners and facilitate innovation adoption and sustained implementation (Rust & Freidus, 2001). A final side of change agents is as a curriculum developer. According to Rust and Freidus (2001), this dimension requires an investment on behalf of the change agent to develop a deep understanding of the innovation, provide curricular strategies to support adoption and sustained implementation, and the ability to communicate the implementation plan.

In addition to understanding the possible roles a change agent may adopt, one must also understand the characteristics required of an effective change agent. The next section will describe characteristics that will benefit a change agent when working with adopters to implement change.

Change agent characteristics. Havelock and Havelock (1973) asserted change agents should possess particular attitudes and values demonstrating respect for themselves, clients, and organizations, knowledge of relationship dynamics, value systems, and change management as well as conflict-management, relationship building, and communication skills. The following section outlines critical characteristics that an effective change agent must reflectively self-assess and demonstrate.

Self-awareness. Self-awareness is defined as, "conscious knowledge of one's own character, feelings, motives, and desires" (English Oxford Living Dictionary, n.d.b). A change agent should have a clear understanding of their strengths and abilities and be open to suggestions and advice (Zaltman & Duncan, 1977). Drago-Severson (2009) challenged individuals to develop a greater awareness of their underlying assumptions that guide their thinking and behavior. Zaltman and Duncan (1977) also challenged change agents to examine their motives for engaging in the change process. Change agents may be motivated by their bias towards the innovation, change process, clients (Rogers, 2003), or for personal gain within the client system (Zaltman & Duncan, 1977). Bernard (2013) also suggested self-awareness contributes to empowering individuals to become their own agents of change.

Trust. As change agents embark on the journey of guiding individuals through the change process, trust is consistently identified as a critical and foundational component. Drago-Severson (2009) cited Barth's (2006) belief that trust and trusting relationships within a collegial atmosphere are critical for improvement, learning, and sustained change to occur. In fact, Rogers (2003) argued that a change agent's trustworthiness may even be valued over their technical competence or expertise.

"Change agents' success in securing the adoption of innovations by clients is positively related to credibility in the clients' eyes" (Rogers, 2003, p. 385). Havelock and Havelock (1973) suggested a change agent's credibility is associated with their reputation of previous successes or failures, along with their effectiveness as a worker. Change agents are requesting clients to engage in risk-taking by adopting a new innovation or idea (Zaltman & Duncan, 1977). Without a trust relationship, Rust and Freidus (2001) stated improvement efforts towards change were "halted, diverted, and invariably contentious" (p. 156). Therefore, trust is dependent on maintaining an honest and dependable relationship with clients (Rust & Freidus, 2001). One way change agents develop and maintain a trusting relationship with clients is to seek full understanding by practicing empathy.

Empathy. Rogers (2003) defined empathy as, "the degree to which an individual can put himself or herself into the role of another person" (p. 376), and posited that empathy has a direct, positive correlation with the successful adoption of innovations. Given our understanding that experiencing change can be personal, emotional, stressful, and painful (Hall & Hord, 2015; Hord & Roussin, 2013), change agents will be more effective in wide-spread adoption and implementation when demonstrating empathy towards clients throughout the change process. According to Stevens and Whittle (2013), empathy is demonstrated by an "appreciation for client fears and concerns and their ways of coping with them is gained by working with the client's transference" (p. 2). The result of demonstrating empathy is two-fold: (a) insight is gained towards selecting the best strategies and interventions, and (b) clients become more receptive to the change agent (Zaltman & Duncan, 1977).

Social skills. A foundational understanding of the change process is that it occurs within a social system (Rogers, 2003). Consequently, a change agent must possess strong social skills and the ability to establish and cultivate relationships within and external to the organization (Zaltman & Duncan, 1977). Hord and Roussin (2013) underscored the fundamental social nature of human beings and encouraged change agents to regularly engage in social conversations during the change process. They believed constant conversations "invite personal and social investment" (p. 3) to own the desired change. Similarly, Cels, Nauta, and Jong (2012) suggested change agents leverage their social positions and relationships in order to promote an innovation. Promoting and communicating a change across numerous populations, including those who may be in conflict with one another, requires political and social finesse (Zaltman & Duncan, 1977); however, change agents must be careful not to become comfortable in a homophilious network. Instead, they must exercise a high level of heterophilous communication when attempting to bridge dissimilar individuals, groups, and ideas together (Rogers, 2003; Zaltman & Duncan, 1977). Fullan (2007) concurred, noting the flaw in supporting only like-minded innovators.

Despite the requirement of social skills and relationship building, a change agent must also possess the ability to manage feelings of isolation and loneliness. Havelock (1973) highlighted the impact of new or shifting roles on a change agent's identity, while Rogers (2003) suggested an effective change agent is one who guides clients from reliance on the change agent to one of self-reliance, thus ending the change agent-client relationship. Rust and Freidus (2001) accurately captured the consequence of embracing this role:

> Perhaps the greatest paradox that successful change agents face is that while creating a community of teachers--with all the contradictions, stresses, and strains

> that are part of such an effort--they do not themselves belong to a community of their own. (p. 161)

Consequently, change agents must prepare themselves that adopting the change agent role may be limited by time and setting, effectively separating them from being a full member of the very community they are attempting to effect change upon, and may result in a change in their own identity.

Optimism, hope, and positivity. Despite the complexity of the role, McLagan (2013) wrote that change agents need to exercise persistence in the face of challenges and commit to the task at hand, even when the change outcome may not be reached during their tenure. The ability to persist despite challenges often goes hand in hand with one's sense of optimism. Fullan (2001) described successful leaders of change as individuals who require a combination of "energy, enthusiasm, and hope" (p. 44). Hord and Roussin (2013) noted the influential power of individual optimism, which encourages others to adopt a culture of self-belief within an academic environment. In turn, teachers pass along this realized potential of "academic optimism" (Hord & Roussin, 2013, p. 34) to their colleagues and students.

Flexibility and adaptability. Zaltman and Duncan (1977) listed flexibility as one of the key factors of an effective change agent when attempting to support innovation adoption. As change agents work with a variety of clients and innovations, they may be challenged to adapt to varying needs, expectations, norms, and behaviors (Rogers, 2003). Adaptability also applies to a change agent's ability to appropriately adapt complex and technical solutions to simple problems and client levels of understanding (Zaltman & Duncan, 1977). Adaptability may also be demonstrated in how a change agent creatively responds to organizational constraints; limited financial and material resources; or individual, cultural, or environmental barriers (Zaltman & Duncan, 1977). Despite Rogers's (2003) assertion that change agents adapt change programs to be compatible with client needs, he cautioned that they do not relinquish their change agency role in the process.

Expertise. Rogers (2003) stated, "change agents usually possess a high degree of expertise regarding the innovations that are being diffused" (p. 368). Zaltman and Duncan (1977) considered technical competence a critical change agent trait and cautioned against utilizing generalists or individuals in a somewhat related field. Beyond the innovation itself, change agents must develop comprehensive understanding and expertise of the change process, adopter profiles, and strategies to support adoption and sustained implementation. The successful change agent may also draw on multiple disciplines rather than centering on just one approach or perspective (Ellsworth, 2015a). Within the academic setting, Lane (2007) suggested a critical underpinning of managing the change process is "understanding the interplay of individual, departmental, and organizational factors" (p. 88). Despite the substantial knowledge required, Rogers (2003) cautioned technical expertise and know-how may also serve as a barrier for change agents, resulting in communication difficulties and further distancing them from potential adopters.

Knowledge of adult learning. As change agents design professional development and intervention strategies and encourage a change in behavior or affect, it is important to keep in mind key principles of adult learning (Drago-Severson, 2009; Rust & Freidus, 2001). Rust and Freidus (2001) pointed out that change agents must find a balance between achieving results and acknowledging that adult learning occurs and progresses in different ways and variable speeds. A leader in the field of andragogy, Malcolm

Knowles suggested there are six common principles applicable to all adults and adult learning situations: “The six principles of andragogy are (1) the learner’s need to know, (2) self-concept of the learner, (3) prior experience of the learner, (4) readiness to learn, (5) orientation to learning, and (6) motivation to learn” (Knowles, Swanson, & Holton, 2005, p. 3). Consequently, change agents must work to accommodate their colleagues’ individual “needs, preferences, and developmental orientations” (Drago-Severson, 2009, p. 14). In addition to general adult learning principles, change agents must also consider a digital literacy framework specific to adult learners. The dimensions of a digital literacy framework include operational, information, and strategic skills as well as attitudes towards learning, digital culture, and identity (Jimoyiannis, 2015). Given the significance of digital literacy, these skills may need to be assessed, developed, and supported when adopting and implementing a technology-related innovation. According to (Jimoyiannis, 2015),

> the key principles for the pedagogical design and the implementation of successful digital literacy programs for adults are (a) promote engagement through active and self-directed learning, (b) use cross-thematic and authentic learning activities, and (c) use purposeful and everyday life contexts to support adult learning and developing digital identities and practices. (p. 214)

Evaluation. A critical responsibility of an effective change agent is the ability to continually evaluate the change process. Early in the change process, a change agent must be able to evaluate and identify the felt or perceived needs (Zaltman & Duncan, 1977). Once determined, a change agent must again evaluate appropriate strategies which support innovation adoption and sustained implementation. Hall and Hord (2015) emphasized that evaluation must be ongoing. They argued that change efforts are lost when “leaders fail to routinely check on progress” (Hall & Hord, 2015, p. 34). Progress may be evaluated by gathering and analyzing data, collecting feedback, and interviewing users about their progress and concerns. Evaluation may also include observable and measurable results such as changes in behavior or the fidelity of an implemented innovation compared to the ideal (Hall & Hord, 2015). Overall, a major component of this process is facilitating the clients themselves to engage in evaluating the change innovation prior to, during, and after adoption (Rogers, 2003; Zaltman & Duncan, 1977). Evaluation may result in modifying the implementation plan or replacing the entire innovation and starting the process over again (Hall & Hord, 2015). Rust and Freidus (2001) noted determining the success of an innovation may vary depending on the goals or perspectives of the evaluator(s).

As change agents consider characteristics needed to lead individuals through the change process, they must also navigate the social structure, points of entry, dynamics, and culture of the organization where change is to occur. Change agents can be external or internal to the organization or social system where change is promoted or implemented (Zaltman & Duncan, 1977). These roles are more widely known as insider and outsider change agents respectively, and each hold their own advantages and disadvantages.

Insider and outsider change agents.

Insider change agents. Insider change agents have the strategic advantage of knowing the system, norms, language, and power structures. Moreover, insider change agents are perceived as members of the system (Havelock & Zlotolow, 1995) and will likely have established relationships at their site. Additionally, insider change agents will possess an advanced familiarity with the innovation being adopted or implemented at the site.

On the other hand, according to Havelock and Zlotolow (1995), insider change agents may lack specialized skills or training, making it more difficult to establish themselves as an expert. Zaltman and Duncan (1977) cautioned change agents may lack perspective and become too subjectively invested in the innovation they are trying to implement at their site. Hall and Hord (1987) concurred, stating, “the common practice of managing and facilitating only from the change agent's point of view restricts understanding” (p. 53). Change agents may also exhibit what is known as “technological determinism” (Ellsworth, 2015a, p. 97) or pro-innovation bias (Rogers, 2003) and must pause to examine the worthiness of the innovation itself (Ellsworth, 2015a). In response, Havelock and Zlotolow (1995) advised change agents encourage others to engage in objectively evaluating the innovation or implementation. Furthermore, change agents who emerge from inside the system must often shift from a previously held role to another (Havelock & Zlotolow, 1995). This shift may impact existing relationships and power structures. Change agent insiders may also experience difficulty navigating their system depending on past experiences (Havelock & Zlotolow, 1995).

Outsider change agents. Outsider change agents bring a level of objectivity that an insider may lack (Havelock & Zlotolow 1995; Zaltman & Duncan, 1977). This objective perspective extends to both identifying site needs and solutions (Havelock & Zlotolow, 1995). The outsider agent also has the advantage to not be aligned with any particular site group. Likewise, the outsider does not have to follow the same reporting structure as required by an insider. Consequently, outsiders do not risk their position at the site and have the ability to leave at any time.

Havelock and Zlotolow (1995) noted outsiders also experience disadvantages. One of the most significant challenges outsider change agents face is entering a site as a stranger without established relationships. They may lack insider knowledge, specifically unspoken values, norms, and language, which impacts overall understanding and their ability to recommend appropriate interventions (Havelock & Zlotolow, 1995). Without insider status, outsider change agents and the innovation(s) they represent may also be perceived as threatening or not vested in the system (Zaltman & Duncan, 1977).

The preceding section reviewed change agency, agent roles and characteristics, and advantages and disadvantages of working from within or external to an organization. Consistent in change agent work is the emphasis on working with individuals and groups in a social system. Second, change agents must approach change as a process, not an event (Hall & Hord, 2015); thus, when conducting research on the change adoption process, a socially inclined, process-based, methodological approach is warranted.

Action Research

Action research is an iterative, systematic, collaborative, and reflective inquiry to everyday problem-solving (Reason & Bradbury, 2008; Stringer, 2007) involving both the practitioner researcher and participatory organization stakeholders in the process. The primary goal of action research is to empower and engage participants in the research process in order to evaluate and improve current practice (Mertler, 2009). Action research is focused at local sites and aims to identify and investigate every day localized solutions to resolve specific problems and increase effectiveness (Stringer, 2007) and to generate knowledge and understanding to foster meaningful change (Argyris, Putnam, & McLain Smith, 1985) at the individual and organizational level. The action research process can be explained as an iterative spiral of action cycles of plan, act, observe, and reflect (Herr & Anderson, 2015). Kemmis (1982) described the action cycles as

1. [t]o develop a *plan* of action to improve what is already happening; 2. to *act* to

> implement the plan; 3. to *observe* the effects of action in the context in which it occurs; and 4. to *reflect* on these effects as a basis for further planning, subsequent action, and on through a succession of cycles. (p. 7)

History of action research. The formalized term and use of action research extends back to the 1940s when Kurt Lewin first theorized a method for solving real-life problems and improving professional practice (Edwards & Willis, 2014). Lewin's approach to problem-solving stemmed from his work with factory production workers (Anderson, Herr, & Nihlen, 2007). Fueled by a desire to solve real-life problems, Lewin wanted to engage workers by helping them identify both the problem and possible solution. "We wanted to know their line of thinking, their line of action, and the major barriers which they encounter" (Lewin, 1946, p. 34). He believed understanding the local context would support the change process (Edwards & Willis, 2014).

Lewin (1946) advocated researchers must engage in a "reconnaissance or fact-finding" (p. 38) which serves the four functions of his action research cycle: evaluating, planning, acting, and reflecting:

> First it should evaluate the action. It shows whether what has been achieved is above or below expectation. Secondly, it gives the planners a chance to learn, that is, to gather new general insight, for instance, regarding the strength and weakness of certain weapons or techniques of action. Thirdly, this fact-finding should serve as a basis for correctly planning the next step. Finally, it serves as a basis for modifying the "overall plan." The next step again is composed of a circle of planning, executing, and reconnaissance or fact-finding for the purpose of evaluating the results of the second step, for preparing the rational basis for planning the third step, and for perhaps modifying again the

overall plan. (p. 38)

Since that time, action research has taken a variety of different forms and applications such as education (Corey, 1953; Herr & Anderson, 2015; Mertler, 2009; Pine, 2009; Schmuck, 1997); participatory action research (Kemmis & McTaggart, 1988); theories of action and organizational learning (Argyris & Schön, 1974, 1978); social change (Greenwood & Levin, 2007; Lippett, 1965); and social justice (Freire, 1972). Researchers have also proposed their own action research cycles (Coghlan & Brannick, 2001; Mertler & Charles, 2008; Piggot-Irvine, 2006; Stringer, 2007).

Action research perspectives. Despite the varied and interdisciplinary applications of action research, Edwards and Willis (2014) proposed three foundational paradigms have developed over time: positivism, critical, and interpretive.

Positivism action research. Positivism action research emphasizes objectivity and relies on expert-based truths and tested quantitative data (Edwards & Willis, 2014). Consequently, the focus on objectivity results in the positivist researcher maintaining a neutral and detached relationship with the setting and participants (Coghlan & Coghlan, 2002). In response to positivism, other more flexible action research models emerged (Edwards & Willis, 2014). Presently, more popular perspectives such as interpretive and critical action research are more widely used.

Interpretive action research. In comparison to a positivist approach and universal solutions, interpretative action research emphasizes customized solutions for the local context (Edwards & Willis, 2014; McCutcheon & Jung, 1990). Characteristics of interpretive action research include flexibility, accommodation of multiple perspectives, and an examination on the dynamics of social relationships (McCutcheon & Jung, 1990). According to Edwards and Willis (2014), participants of interpretive action research are often professionals focusing on improving professional practice. Interpretive action researchers collaborate with and rely on local stakeholders' knowledge in order to construct understanding and develop solutions (Stringer, 2007). Another hallmark of this collaboration is the emphasis on understanding multiple perspectives rather than relying on "the" expert perspective (Edwards & Willis, 2014). This also means that interpretive researchers are also open to multiple research methods rather than only one method or data type (Edwards & Willis, 2014). Interpretive action research also views the research process as a journey and views reflection as a means to develop understanding, knowledge, and discourse between the researcher and participants (Edwards & Willis, 2014).

Critical action research. Critical action research differs from the other two perspectives as it mainly focuses on social change (Carr & Kemmis, 1986) and barriers to equity (McCutcheon & Jung, 1990). According to Edwards and Willis (2014), critical action rationale and strategies often center around "concerns about authenticity, alienation, ownership of knowledge, hierarchical schooling systems, oppressive roles, and emancipatory actions" (p. 147). Additionally, in comparison to iterative cycles observed in other perspectives, critical action research is a continuous self-reflecting spiral (Mackay, 2016).

Despite the variance in cycles and perspectives, Herr and Anderson (2015) proposed,

> most traditions of action research agree on the following goals: (a) the generation of new knowledge, (b) the achievement of action-oriented outcomes, (c) the education of both researcher and participants, (d) results that are relevant to the local setting, and (e) a sound and appropriate research methodology. (p. 67)

In addition to the general goals of action research, several strengths are highlighted in the following section.

Strengths of action research. A strength of action research is that it is not a derivative of any one particular discipline. Instead, its foundation can be traced to a variety of disciplines including social sciences, psychology, education, management, and leadership; thus, it is not surprising to observe that action research is "inherently interdisciplinary" (Herr & Anderson, 2015, p. 2) and does not stem from any one specific research discipline, but rather aligns with many. In addition to its foundation, Stringer (2007) also proposed another strength of action research is its acceptance of diverse perspectives. This diversity stems from participants conducting their own research and finding appropriate solutions specific to their unique population, local situation, and setting (Mertler, 2012; Stringer, 2007).

Lewin's philosophical approach reasoned one only understands a system when one tries to change it (Schein, 1996). Consequently, in order to understand a system, one must also engage and collaborate with the users of the system (Greenwood & Levin, 2007). This is a foundational understanding required of the change facilitator when adopting an action research approach. Although Lewin advocated for learning about the local setting and history where the research took place, he himself was not a member of the organization. At the time, his approach still modeled the traditional practice of an outside researcher studying unknown subjects or practices. As professionals began looking internally to study, understand, and change their own organizations, a new branch of action research developed. Today, this practical, real-life study is referred to as "insider action research" (Coghlan, 2007, p. 336).

The preceding section provided a general review of action research, its history, founder, and fundamental beliefs. In addition, positivism, critical, and interpretative perspectives were also discussed. Last, differing views from traditional beliefs about engaging participants as collaborators in the research process were also presented. The intricacies of action researcher roles, insider and outsider roles and perspectives, and action researcher ethical considerations such as rigor and positionality will be discussed further in Chapter 3.

Summary

This chapter presented a multi-dimensional review of literature on distance and online education, digital video, the community of inquiry, change agency, and action research. The literature on distance and online education focuses on how education has been impacted by technology. The literature on community of inquiry focuses on establishing instructor, social, and cognitive presence in an online environment using video. The development, uses, benefits, and challenges of video were also discussed. The literature on change agency focuses on understanding the change process, various change models, users, change agents, and roles. The literature on action research focuses on the purpose and cycle of the action research process. Each review of literature contributes to the construction of knowledge and greater understanding of how a change agent may facilitate instructors' adoption and sustained implementation of video in their online courses. The review of literature also informs the methodology selected for this study.

Chapter 3: Methodology

Overview

Change in higher education is to be expected. Growth in online courses has challenged institutions to drastically shift how they address fostering a Community of Inquiry (CoI) within a virtual environment. As facilitators of these virtual environments, instructors are charged with facilitating elements of teacher, content, and social presence. While the acceptance of this new role may be adopted at the organizational level, implementation occurs at the individual level (Hall & Hord, 2015). Change facilitators must find ways of identifying where individual instructors are on the implementation spectrum, concerns that may be hindering adoption, and what interventions may support an instructor in the change process (Hall & Hord, 2015).

The goal of this case study was to examine the adoption of video as an innovation to facilitate a CoI in an online environment using the CBAM framework. The study addressed instructors' stages of concern towards the adoption of video, level of use of video as an innovation, and examples of innovation in application, or innovation configuration. The study also addressed engaging research participants in the action research cycle as well as the researcher's multi-faceted role as an insider action researcher. This chapter provides an overview of the description of the setting and participants, design of the study, role of the researcher, methodology, and instruments selected to collect and analyze data.

Relevancy

Online learning continues to show growth in higher education as students seek alternative avenues to pursue their educational experience. The shift in delivery method, however, does not lessen their desire to feel connected to their classmates, instructor, and institutional community. The CoI framework is a process model that directly addresses the learners' need to engage in a learning community. Institutions that resolve to offer interactive and engaging online courses must identify how to support faculty instructors in adopting innovations that support a Community of Inquiry in the online environment. Implementing an institutional policy across an organization does not address the individual who is adopting the change. Instead, it is necessary to examine individual concerns, behaviors, and current application of the innovation in order to support the individual in the change process and develop an appropriate plan of action.

Setting

This study focused on a small, private, faith-based, postsecondary institution located in western North Carolina. The institution offers a variety of academic degree programs at the undergraduate, masters, and doctoral levels. Overall student enrollment is approximately 4,000 students encompassing undergraduate, degree completion, and graduate programs. The faculty is comprised of nearly 150 full-time teaching faculty (tenure and nontenure track) and a contingent of adjuncts.

Historically, the institution is well known for being a pioneer in distance education. As enrollments fluctuated from traditional brick-and-mortar classrooms to virtual classrooms, the institution responded accordingly. Over the past decade, the institution reduced the number of satellite campuses in exchange for a substantial number of degree programs and courses offered online. Of the current full-time teaching faculty, approximately 65% have taught an online course in one or more of the degree programs.

Students attending the institution may be enrolled in online courses regardless of their residential status. Traditional residential, or on-campus, students are permitted to enroll in a maximum of two online courses per standard term (spring and fall) and an unlimited number per summer term. Degree completion students may enroll in a combination of on-ground and online courses depending on their discipline. Some masters programs are completely online, while others offer a hybrid format. Doctoral programs are offered as hybrid and web-enhanced formats.

Learning management system. The institution utilizes Blackboard Learn as their learning management system to support web-enhanced, hybrid, and online course delivery. Student and instructor data are managed in the student information system (SIS) database which processes enrollments and course delivery formats to the Blackboard LMS. Using institution credentials (username and password), users access the LMS through an intraportal or direct URL address. The Blackboard Learn LMS contains standard communication tools such as announcements, discussion boards, journals, blogs, and wikis. The LMS does have limited external email capabilities as well as internal mail but does not have a chat feature. The LMS also offers assessment tools such as assignments and tests with a variety of question types. In addition to URL links and HTML embedding capabilities, the LMS integrates with Kaltura, a cloud-based storage solution for audio and video files.

Research Design and Rationale

The research design selected was a qualitative, action research, single-site case study. Creswell (2014) defined a case study as one "in which the researcher develops an in-depth analysis of a case, often a program, event, activity, process, or one or more individuals" (p. 14). Stake (1995) described case study research as a way to investigate the complexity and uniqueness of a case of interest. The selection of a case study is appropriate because it explores a phenomenon that is "too complex for survey or experiential strategies" (Yin, 1994, p. 15). A phenomenon can be described as a concept or idea to be explored or understood (Creswell, 2014). The phenomenon this case study explored is instructors' adoption of video as an innovation in online courses. The researcher used CBAM diagnostic instruments, along with journals and field observations, to answer the following research and guiding questions:

RQ. How can adoption and implementation of video in online courses on a university campus be described?

GQ1: How can users' Stage of Concern adopting and implementing video in online courses be described?

GQ2: How can users' Level of Use adopting and implementing video in online courses be described?

GQ3: How can users' fidelity of creating a community of inquiry through adopting and implementing video in online courses be described?

Fitzpatrick, Sanders, and Worthen (2011) suggested case studies do not have a prescribed approach. Although complex, the researcher contends that the combination of multiple approaches strengthens the study and supports greater understanding of the research question(s). The major methodological components selected for this case study include qualitative data, action research, and CBAM. In the following sections, the researcher defines each component and discusses the relative connections. "We want to appreciate the uniqueness and complexity of Θ [the case], its embeddedness and interaction with its contexts" (Stake, 1995, p. 16). Participant selection, data collection instruments, and data analysis are discussed in further detail later in this chapter.

Case Study

A case study explores open-ended, phenomenological "how or why" questions (Yin, 2014, p. 2) within a contemporary, real-world, or everyday context (Yin, 2014) to obtain greater understanding of people or programs (Stake, 1995). Stake (1995) also acknowledged this type of study allows for investigation into unique aspects of an individual as well as shared commonalities among a group of persons. In this study, the researcher sought to gain a deeper understanding of instructors – their concerns, behaviors, and actions – within the context of their experiences adopting, implementing, and teaching using the innovation of video. Case studies, however, are not identified simply by their special topic of interest and instead must be defined as a “bounded system” (Creswell, 1998; Merriam, 1998; Yin, 2014). According to Merriam (1998), “if the phenomenon you are interested in studying is not intrinsically bounded, it is not a case” (p. 27).

Yin (1994) referred to this bounding as defining the case, which sets the parameters of the topic of the study, research questions, location, number of participants, data collection and analysis, and the distinct length of time the study will be conducted (Creswell, 1998; Hays, 2004; Merriam, 1998; Yin, 1994). Although, the parameters are researcher dependent (Creswell, 1998), bounding a case study also prevents a researcher from being tempted to investigate data outside of the scope of the defined study. Stake (1995) believed this is “one of the most serious problems in case study research” (p. 24). This case study was bound to the use of video in online courses offered at the institution during the 2016-2017 academic year taught by full-time teaching faculty. Three instructors were selected as participants in the study. Qualitative data were collected using CBAM diagnostic instruments, journals, and observational field notes. The study length was limited to five iterative action research cycles.

Case Study Rigor

Just like any research design, case study research is described by its relative strengths and weaknesses. Yin (2014) suggested a major strength of case study research lies in understanding contemporary, complex phenomena in a real-world setting. Merriam (1998) shared this observation and further acknowledged the benefit of using case study when investigating educational innovations. This benefit is described as the rich and detailed narrative (Creswell 1998; Merriam, 1998) from which multiple alternative perspectives are represented (Yin, 2014) and resulting analysis can be evaluated. Despite its popularity in the social science and educational field, case study is not without criticism. Researchers identify several specific concerns related to the level of quality, or rigor, in case study research. The following section acknowledges and responds to these concerns.

Subjectivity and bias. One concern related to the rigor of case study research lies in the subjectivity of the researcher, or propensity for bias. This is due, in part, because the researcher is considered the primary instrument for data collection and analysis (Merriam, 1998). As an instrument, the researcher cannot separate their human nature and potential influence from the study. Critics also point to the subjectivity of data collection when operational procedures are not made clear (Yin, 2003). Furthermore, the research design is flexible and adaptive, allowing the researcher to make a series of discretionary decisions along the course of study (Merriam, 1998; Yin, 2014). These judgments and the biased perspective(s) a researcher brings to a study must be carefully identified, documented, and evaluated. To address the issue of subjectivity, Yin (2003) proposed case study researchers use multiple sources of data and "establish a *chain of evidence*" (p. 36) during the collection process. Additionally, Creswell (2014) suggested using self-reflection and narrative as a way to clarify bias, while Stake (1995) advocated for the use of methodological triangulation and member checking.

Validity and trustworthiness. Validity refers to the accuracy of findings in a study (Creswell, 2014). Similarly, the term trustworthiness describes the confidence and trust placed on the researcher to report accurate procedures and findings. According to Merriam (1998), researchers must defend their findings by demonstrating detailed evidence of how data were collected, analyzed, interpreted, and presented. Validity is divided into two areas: internal validity and external validity. Internal validity examines the accuracy of reported findings compared to reality (Merriam, 1998). Yin (2003) stated the concern of internal validity in case study research rests in the inferences made by the researcher. To address the concern of internal validity, a researcher must explore whether all possibilities have been considered or if sufficient evidence has been presented (Yin, 2003). External validity, however, refers to the generalizability of results to new settings, people, or samples (Creswell, 2014).

Generalizability. In quantitative research, statistical generalizability is defined as taking the results of a sample population and inferring or extending the findings to another population or setting (Bogdan & Biklen, 2003; Creswell, 2014; Yin, 2014). According to Marshall and Rossman (2006), the inability to apply qualitative generalizations is "seen by traditional canons as a weakness in the approach" (p. 202). Furthermore, quantitative researchers seeking generalization view "uniqueness of cases as 'error,' outside the system of explained science" (Stake, 1995, p. 39); however, generalization is not the desired outcome of case studies (Hays, 2004; Stake, 1995), nor does the lack of generalization render a study weak (Wiebe, Durepos, & Mills, 2010). In lieu of generalizability, the strength of qualitative research lies in the detailed and descriptive nature, resulting in an increase of understanding (Patton, 1992). "The real business of case study is particularization, not generalization. We take a particular case and come to know it well, not primarily as to how it is different from others but what it is, what it does" (Stake, 1995, p. 8). Rather than viewing uniqueness as a weakness, the purpose of case study research is to discover and embrace the uniqueness to inform understanding. Yin (2014) referred to this understanding as "analytic generalizations" or "lessons learned" (p. 41).

Stake (1995) also proposed some generalizations may be drawn from single case studies, while Yin (2013) suggested generalized interpretations or theories constructed as a result of the case study may contribute to a larger cumulative body of knowledge. Stake concluded that knowledge of other similar cases, along with an individual's own experiences, form what he calls "naturalistic generalizations" (p. 85). Lincoln and Guba (1985) agreed with Stake's claims that naturalistic generalizations contribute to an individual's understanding by connecting to familiar and personal experience. In this approach, the generalizability of a case occurs when an individual recognizes similarities which they find useful in practice (Wiebe et al., 2010). Following Stake's recommendations, the researcher attempted to provide "a narrative account, a story, a chronological presentation, personalistic description, emphasis on time and place [to] provide rich ingredients for [a] vicarious experience" (p. 86-87) in presenting herself, the participants, methods, procedures, and data findings. In this way, other researchers may apply their own understanding and experience to that of the experiences described in the study.

Reliability. In contrast to validity, reliability refers to the ability to repeat or replicate a study or its findings (Creswell, 2014; Merriam, 1998). Merriam (1998) described reliability as the practice of repeatedly conducting a study in order to obtain the same results. A case study, however, is focused on understanding rather than replication.

Since understanding will result in multiple perspectives, it can be assumed a bounded qualitative case study cannot be replicated and yield the same results. Although results may not be replicated, documented research procedures may be shared with other researchers for similar, but not exact, studies. To address the concern of reliability of the case study, Yin (2003) suggested researchers explicitly document operational procedures and steps taken.

Completeness. Some case studies may lack specificity (Stake, 1995) and have an unlimited number of researcher-selected choices: phenomenon or case, setting, participants, and length of time. This infinite potential results in an ambiguous beginning and end (Creswell, 1998). Yin (2014) responded to this ambiguity by advocating that a case must be "complete" (p. 202). Completeness was addressed in this study by the bounding of the case study and the establishing of clear limits. Merriam (1998) posited case studies without finite parameters are not fully bound.

Completeness also refers to the data collected and length of study. Researchers should make every effort to collect extensive data relative to the phenomenon being studied (Creswell, 1998). Furthermore, the case study design should reflect a sufficient amount of time to adequately collect data (Yin, 2014). In this way, design should drive the particular data collection period. The bounded, finite parameters of this case study that demonstrate completeness include limiting and articulating the potential participant population, phenomenon being studied, and observation and data collection period.

Despite the limitations described above, the strengths of case study design make it the best option for answering complex research questions (Merriam, 1998). Yin (2014) suggested to overcome these limitations and make a stronger case study, researchers should utilize a variety of systematic procedures. As a result, the researcher used both qualitative and action research methodology to guide the case study research process. The following section describes the qualitative and action research nature of the study.

Qualitative

Case studies may also be identified by their alignment with qualitative research. According to Creswell (2014), qualitative research "is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem" (p. 4). Stake (1995) presented three major differences between qualitative and quantitative research that form the foundation of this particular case study: "(1) distinction between explanation and understanding as the purpose of inquiry; (2) the distinction between a personal and impersonal role for the researcher; and (3) a distinction between knowledge discovered and knowledge constructed" (p. 37). Using these categories, the researcher has organized a comprehensive description of the researched case study.

Explanation vs. understanding. Similar to case study research, a qualitative study seeks to gain deep understanding of an individual's beliefs, feelings, perspectives, and experiences (Bustamante, 2017; Patton, 1992). This approach starkly contrasts with quantitative research which focuses on conducting experiments, drawing conclusions, or solving a hypothesis (Bogdan & Biklen, 2003). Rather than make connections or provide a causal explanation for why something is occurring, the researcher instead offers a description of how it is occurring within the context of the study. In this way, qualitative researchers strive for establishing an "empathetic understanding" (Stake, 1995) of the experiences, perspectives, and "complex interrelationships" (Stake, 1995, p. 37) of the individuals and context being observed and represented in the study.

The concept of empathetic understanding, or *verstehen*, is also evident in Max

Weber's work related to the social science field (Tucker, 1965). The English Oxford Living Dictionary (n.d.c) defined verstehen as an "empathic understanding of human behavior," while Bustamante (2017) extended this definition to "a deep understanding of a social phenomenon" (p. 58). Patton (1992) set the context of this framework in application, stating,

> The verstehen tradition stresses understanding that focuses on the meaning of human behavior, the context of social interaction, and empathetic understanding that is based on personal experience, and the connections between mental states and behavior. The tradition of verstehen emphasizes the human capacity to know and understand others through empathetic introspection and reflection on the basis of direct observation of and interaction with people. (p. 11)

The Weberian concept of verstehen seeks to deepen the researcher's understanding and gain insight, while acknowledging that this insight derives from the participant's point of view and experience, not the researcher's (Meneses & Larkin, 2015). The researcher acknowledged the uniqueness of humans and the distinctiveness of engaging in human inquiry. Greenwood and Levin (2007) advocated this diversity should be celebrated within human society, research, and within group organizations. As the nature of this case study was to seek a deeper understanding of unique individual's concerns and behaviors within the context of their own real-world, daily experience, the researcher applied the practice of empathetic understanding to her interactions and reflections. As Patton (1992) emphatically stated, "The capacity for empathy, then, is one of the major assets available for human inquiry into human affairs" (p. 11). Examples of this approach-in-application are evident in qualitative data collection such as researcher-participant interviews, direct observations, and reflective journals. The understanding gained about the phenomenon, context, and participants is presented in a descriptive manner.

Consistent with most case study research, this case study was qualitative and descriptive in nature. Bogdan and Biklen (2003) argued the terms qualitative and descriptive are synonymous. The choice to utilize a qualitative approach lies in the belief that "a description and understanding of a person's social environment or context is essential for overall understanding of what is observed" (Merriam, 1998, p. 8). A qualitative approach allows the researcher to thoroughly describe the context of the study including observations and interpretations, while preserving the perspectives of those being studied (Stake, 1995). The selection of a qualitative approach, however, is not void of quantitative data altogether. In this case study, quantitative data were used to construct qualitative descriptions. Maxwell (2010) believed the use of numbers in qualitative studies helps to validate "internal generalizability" (p. 478) and "correctly characterize the diversity of actions, perceptions, or beliefs in the setting or group studied" (p. 478). According to Lincoln and Guba (1985), "it is the function of the case study, with its 'thick description,' to provide that essential judgmental information about the studied context" (217). In this study, the researcher describes the data collection procedures and case findings using rich, thick description (Creswell, 2014; Lincoln & Guba, 1985; Merriam, 1998). The use of rich, thick description allows readers to align their understanding of the study to that of their own experience (Merriam, 1998). This level of empathy and comprehensive understanding is only gained as a result of the researcher's personal involvement with the study and the participants.

Personal vs. impersonal. In order to conduct qualitative inquiry on complex subjects, an instrument equally sensitive to the human element is required (Merriam, 1998). Lincoln and Guba (1985) remarked on the strength of the human-as-instrument, noting an individual's ability to respond and adapt to human interactions and real-world environments. As a result, the researcher must become the instrument herself to collect and analyze data (Merriam, 1998; Patton, 1992) on a personal and multi-layered level (Lincoln & Guba, 1985). Stake (1995) argued qualitative studies are personalistic studies, while Merriam (1998) emphasized the important qualities of communication, rapport, empathy, and trust on the part of the researcher in order to conduct this type of research. This personalistic approach of engaging with study participants runs counter to quantitative research methods where the researcher attempts to distance themselves from participants in order to avoid influencing the data or introducing additional variables. Conversely, Lincoln and Guba (1985) argued that the complex nature of inquiry in a natural setting "*demands* a human instrument" (p. 187). They noted human behaviors of seeing, listening, speaking, reading, and observing, among others, as strengths of the human instrument (Lincoln & Guba, 1985). In order to engage in these behaviors, researchers must interact with participants in their natural setting by conducting what is known as fieldwork.

Fieldwork is defined as, "a common mode of data collection in a case study, whereby interviews, documentary evidence, and direct observations are all gathered in the real-world setting of the case being studied" (Yin, 2014, p. 239). Fieldwork is also considered representative of qualitative research (Merriam, 1998). Engaging in this practice involves the researcher physically going to the site or field of study to collect data "where participants experience the issue or problem under study" (Creswell, 2014, p. 185). Lincoln and Guba (1985) suggested meaning comes from both the phenomenon and the context. Creswell (1998) concurred, adding that removing participants from their natural setting "leads to contrived findings that are out of context" (p. 17). Thus, observing participant behavior in their natural setting is critical to the validity of the data. Bogdan and Biklen (2003) summarized these foundational beliefs:

> Qualitative researchers go to the particular setting under study because they are concerned with context. They feel that action can be best understood when it is observed in the setting in which it occurs. These settings have to be understood in the historical life of the institutions of which they are a part…. To divorce the act, word, or gesture from its context, for the qualitative researcher, to lose sight of significance. (pp. 4-5)

As researchers strive for greater understanding, data collected should be genuine and reflect natural participant responses, behaviors, and understandings (Fitzpatrick et al., 2011). Marshall and Rossman (2006) considered a qualitative study to be credible as one in which the description and data presented is substantial, so there is no doubt of the truthfulness of the study. As researchers engage with participants on a personal level in their own natural setting, understanding develops and knowledge is constructed.

Knowledge discovered vs. knowledge constructed. According to Stake (1995), "most contemporary qualitative researchers nourish the belief that knowledge is constructed rather than discovered" (p. 99). Constructivism is "the belief that knowledge is made up largely of social interpretations rather than awareness of an external reality" (Stake, 1995, p. 170). Since the purpose of conducting qualitative case study research is to develop a rich understanding, there is no pursuit of obtaining a universal reality (Stake, 1995) or confirming a hypothesis (Creswell, 2014). Rather, qualitative and case study researchers focus on the personal aspect of human experience and its influence on an individual's constructed reality or perspective. Garrison and Archer (2000) suggested construction of meaning extends beyond the individual, referencing that "ideas are generated and knowledge constructed through the collaborative and confirmatory process of sustained dialogue within a critical community of learners" (p. 91).

Constructivism is often paired with interpretivism in qualitative research (Creswell, 2014). According to Creswell (2014), researchers construct or interpret "the meanings others have about the world" (p. 8). Constructivists accept the belief that individuals may hold multiple realities or perspectives (Creswell, 2014) and that these realities are ever-changing and socially influenced by others' realities. Furthermore, Yin (2014) went on to describe that case study researchers who adopt an interpretivist perspective must also acknowledge the potential for "multiple realities having multiple meanings" (p. 17). To develop an understanding of these complex perspectives, researchers utilize broad, open-ended questions (Creswell, 2014). This practice allows focus to remain on the participants' views rather than the researchers' assumptions or perspectives. Creswell (2014) noted a characteristic of qualitative research is to "focus on learning the meaning that the participants hold about the problem or issue, not the meaning that the researchers bring to the research or that writers express in the literature" (p. 186); however, it is important to acknowledge that the researcher's interpretation is not limited to only external historical, cultural, and contextual influences shaping a participant's experience and perspective. Rather, the researcher must also examine how their own background, experience, and tacit knowledge influences interpretation of another's constructed meaning about the world (Creswell, 2014). Merriam (1998) noted the researcher brings their own construction of reality which then interacts with others' constructions and interpretations.

Based on the complexity described in conducting qualitative, case study research, a researcher must construct an understanding as it is shared, observed, experienced, and interpreted. Exploring the personal side of change also includes developing understanding of an individual's emotional experience as well. The researcher must be open to the possibility that multiple, multi-layered perspectives may exist which are continually shaped by past experiences, social and cultural influences, and present-day context in which participants and the researcher live and work (Creswell, 2014; Yin, 2014). Seeking understanding of this world and the meanings generated from engaging in that world is at the center of a constructivist's approach to qualitative research.

Primary Themes

In addition to the qualitative nature of this case study, several primary themes are also reflected. Although these primary themes are presented to more richly describe the qualitative aspect of the study, themes of process, reflexivity, and holism are similarly embedded within the action research cycles and CBAM diagnostic dimensions discussed later in this chapter.

Process. Process is a main theme found throughout this case study, evident in both the theoretical framework and methodology of the change adoption process and action research cycles. According to Merriam (1998), "case study is a particularly suitable design if you are interested in process" (p. 33). Just as Hall and Hord (2015) articulated change is a process, not a product, Greenwood and Levin (2007) echoed the same belief that action research is a process, not a thing. Similarly, Merriam (1998) and Bogdan and Biklen (2003) agreed in their description of qualitative researchers whose attention and interest is more in the process than outcomes. Consequently, the product of qualitative work is a rich description of "process, meaning, and understanding" (Merriam, 1998, p. 8) as a result of the research conducted. One significant component to the process of change adoption and qualitative research is the reflective aspect of the researcher.

Reflexivity. Creswell (1998) defined reflexivity as, “self-awareness” (p. 9), while Ravitch and Riggan (2012) referred to the process of “reflexive engagement” (p. 143). Beyond the research question(s) being studied, Marshall and Rossman (2006) advocated a qualitative researcher must reflect on her “identity and one’s sense of voice and perspectives” (p. 58). This reflection includes considering one’s background, experiences, values, biases, assumptions, and sensitivities (Creswell, 2014; Marshall & Rossman, 2006) which may influence or shape the researcher’s role, questions, and decisions as well as research design, collection, and analysis. Stake (1995) suggested developing expertise as a qualitative researcher rests largely in their decision to engage in reflective practice. Mertler (2009) agreed, stating that engaging in reflection is a primary way to critically examine one’s own practice; therefore, the researcher adopted this reflective practice throughout the study.

Parallel to the researcher engaging in reflective practice is encouraging case study participants to do the same. The intentional decision to involve participants in the research process requires them to engage in their own self-study and exploration for understanding. As will be discussed later in this chapter, research participants had an opportunity to engage in self-reflection within each action research cycle. Mertler (2009) maintained the process of teacher self-reflection on practice is not limited to the end of the action research cycle but occurs at all phases. Greenwood and Levin (2007) described this collaborator-researcher relationship as, “an ongoing process of experimentation and reflection, in which mutual learning is the driving process both for sustainable change and for knowledge generation” (p. 27). The collection of this reflexive, qualitative data and knowledge generation ultimately contributed to an overall greater understanding of the phenomenon and context being studied. This in-depth understanding is referred to as holistic.

Holism. Stake (1995) highlighted holism as one of the defining characteristics of a qualitative study. In a holistic analysis approach, the researcher examines and analyzes the case in its entirety (Stake, 1995; Yin, 1989) and “presents description, themes, and interpretations or assertions related to the whole case” (Creswell, 1998, p. 250). This approach contrasts with quantitative research, which examines parts or components of a phenomenon. Conversely, qualitative researchers investigate “how all the parts work together to form a whole” (Merriam, 1998, p. 6). Applicable to theory or design, a holistic approach values the whole system over the comprising parts or subunits (Patton, 1992; Yin, 2014). In valuing the impact context has on understanding (Patton, 1992), the holistic view is embraced as qualitative researchers affirm the complexity of human situations and the portrayal of multiple perspectives and factors (Bogdan & Biklen, 2003; Creswell, 2014). The strength of a holistic emphasis is equally attributed to the researcher as a human instrument. “The world of any phenomenon and its surrounding context are ‘all of a piece,’ and the human instrument is the only one available capable of grasping all this buzzing confusion in one view” (Lincoln & Guba, 1985, p. 194).

Holism is also represented in the visual models (Creswell, 2014) of the action research process cycle, CBAM dimensions, and CoI framework. The strength of each approach lies in its wholeness, rather than as individual components. According to Greenwood and Levin (2007), “A[ction] R[esearch] is ‘holistic and context bound’” (p. 51). The authors argued that without the combination of action, research, and participation, it is not truly action research (Greenwood & Levin, 2007). The action research cycle involves a series of iterative learning cycles of planning, acting, observing and reflecting. The work of action research is also collaborative in nature when attempting to understand local context and knowledge, the problem, and possible solutions (Edwards & Willis, 2014).

CBAM is comprised of three separate but interrelated dimensions that describe affective and behavioral domains (Hall, Dirksen, & George, 2013). Although the dimensions can be used individually, a more holistic picture is obtained when all three are used in combination (Hall & Hord, 2015). In this way, researchers can construct a richer understanding about how an individual is feeling, behaving, and achieving fidelity of an innovation. CBAM further aligns with a holistic perspective, as an individual's profile is not measured by a single diagnostic or instrument. G. Hall (personal communication, August 8, 2016, February 2, 2017) referred to this holistic understanding as "gestalt," meaning "a 'shape,' 'configuration,' or 'structure' which as an object of perception forms a specific whole or unity incapable of expression simply in terms of its parts" (English Oxford Living Dictionary, n.d.a). Similarly, the Community of Inquiry (CoI) also reflects a holistic model with three overlapping segments of learner interaction. According to Garrison et al. (2000), all three core elements are critical towards contributing to the wholeness of a community of inquiry and student experience.

A holistic approach permeates throughout the entirety of a study, influencing theory, research design, data analysis, and threaded narrative, resulting in a rich, descriptive understanding of the phenomenon and context (Lincoln & Guba, 1985; Merriam, 1998). This case study attempted to reflect elements of holism from theory to analysis. An effort was made by the researcher to present a holistic description of the entire case study including the phenomenon, context, research design, and process as well as fully describing both researcher and participant perspectives and interpretations.

Action Research

This case study may also be described as one reflecting an action research process. Developed by Kurt Lewin, the purpose of action research is to change or improve one's practice (Mertler, 2009). Stringer (2007) defined action research as, "a systematic approach to investigation that enables people to find effective solutions to problems they confront in their everyday lives" (p. 1). While some action research models are designed to produce solutions, other contemporary models focus on greater understanding of a problem (Edwards & Willis, 2014). This approach closely aligns with case study research where examining context setting and dynamics contributes to greater understanding (Maruyama, 1996).

Action research is also a social process (Kemmis, McTaggart, & Nixon, 2014). Thus, a hallmark characteristic of action research is the inclusion of participants in all phases of the research process (Carr & Kemmis, 1986; Cochran-Smith & Lytle, 1993). The action research process values collaboration where knowledge is cogenerated between participants and the researcher (Coghlan, Shani, & Roth, 2016). In this way, both participants and the researcher reflect on newly constructed knowledge and understanding, allowing for multiple perspectives and solutions to be considered. Pine (2009) further advocated participating in action research empowers teachers to develop an understanding about themselves and the change process. As a result, teachers become collaborators and contributors in action plan development and the decision-making process.

Rigor in action research. Similar to qualitative and case study research, interpretative action research does not seek a singularly correct or generalizable truth.

Instead, localized solutions (Edwards & Willis, 2014; Stringer, 2007) and understanding are emphasized. Mills (2003) acknowledged the "highly contextualized nature" (p. 96) of action research and provided rationale for why research findings would not be applied to settings and contexts outside of the localized case study. Concerns for rigor and bias in action research were addressed by utilizing multiple sources of data, checking for accuracy and clarification, and ensuring that multiple perspectives were reflected (Mertler, 2009; Stringer, 2007). Action research accommodates these protective measures by incorporating reflection and collaboration into the research process.

Action Research Process

According to Mertler (2009), "the basic process of conducting action research consists of four steps: 1. Identifying an area of focus; 2. Collecting data; 3. Analyzing and interpreting the data; 4. Developing a plan of action" (pp. 4-5). A variety of models (Lewin 1946; Mertler, 2009; Stringer, 2007) has been created to visually represent the action research process. Although varying in complexity and shape, all models contain common elements of a central problem, observation of practice, collection and analysis of data, and some type of action planning (Mertler, 2009). Often these cycles are part of an iterative framework, continually building off each stage of action and reflection.

The action research process model (see Figure 13) used in this study consisted of four steps: planning, acting, observing and reflecting. Cycle 1, Development, represented the work conducted as a part of the proposal process; Cycle 2, SoC, included data collection of participant concerns about the innovation; Cycle 3, LoU, included data collection of participant behaviors and actions towards the innovation; Cycle 4, IC, addressed the fidelity of the implemented innovation; Cycle 5, Action Plan, includes recommendations based on the data analysis from Cycles 2-4. Recommendations are discussed in Chapter 5. Although additional reflection and action could continue, the boundedness of the case study addresses the potential for perpetual cycles beyond Cycle 5.

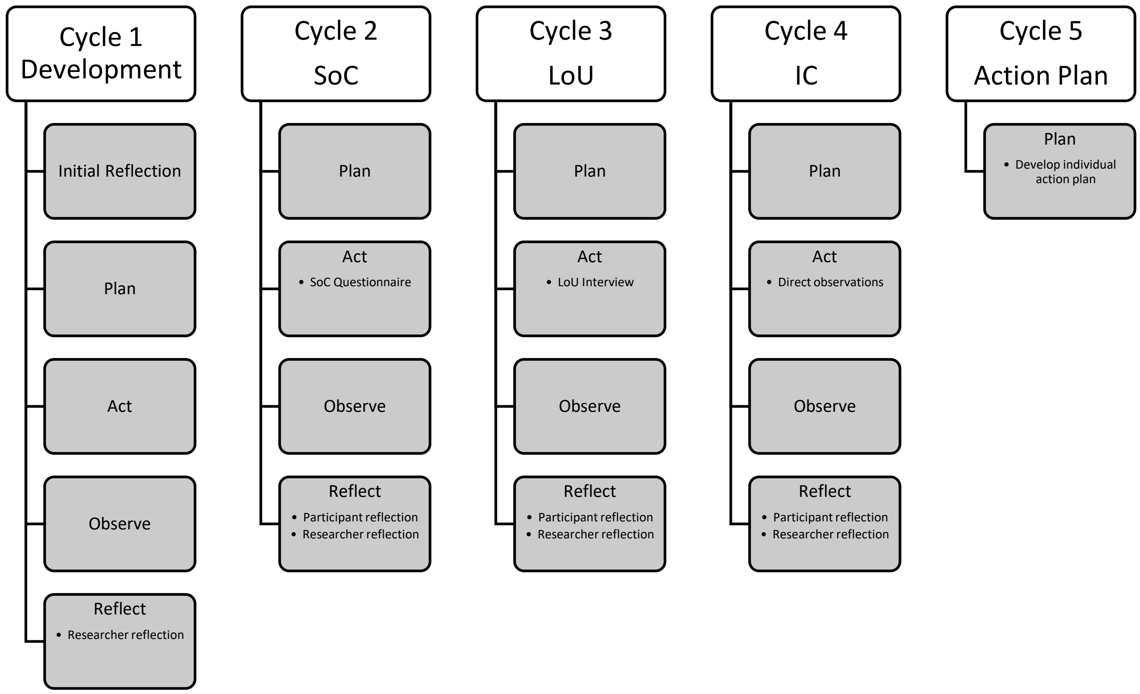


Figure 13. Case Study Action Research Cycles.

Action Research Cycles

Using an action research process, the researcher conducted four iterative cycles of planning, acting, observing, and reflecting, leading into the fifth action cycle: the development of an action plan. The following section details each action research cycle and CBAM diagnostic instrument used. These instruments are described in more detail later in the methodology section.

Cycle 1: Development. The first cycle depicts the researcher's initial reflection and observations of her site regarding the adoption of video as an innovation, followed by an exploration of current literature. Based on the literature findings stating that LoU raters must be LoU certified in order to conduct formal research, the researcher obtained certification through a correspondence course with CBAM theorist and researcher, Dr. Gene Hall. As a component of the dissertation proposal process, the researcher then developed the research design presented in this chapter. Reflections and decisions made regarding the design and data collection procedures were addressed during the proposal defense.

Cycle 2: SoC. The second action research cycle comprised of obtaining initial participants and collecting SoC profiles. This preliminary data collection resulted in identifying potential organizational concerns as well as provided the pool from which Cycle 3 and Cycle 4 participants were selected. Participant and researcher reflections examined individual and organizational concerns profiles, identified concerns, and potential recommended interventions.

Cycle 3: LoU. The third action research cycle included participant LoU interviews conducted by the researcher. Following this data collection, the researcher and a secondary LoU rater determined LoU ratings. The researcher then reviewed the ratings with each participant allowing for a period of reflection on the results. The researcher engaged in the reflection process on her own role as the LoU interviewer, rater, and change agent supporting participants in the change process.

Cycle 4: IC. The fourth action research cycle consisted of observations of the implemented use of video in online courses. The researcher conducted observations using a predetermined protocol on participant selected courses; however, both the participant and the researcher reviewed and reflected on the observational data together.

Cycle 5: Action plan. The data findings of Cycles 2-4, along with participant and researcher reflections, influenced the development of Cycle 5: an action plan. The researcher collaborated with each participant to develop an individual action plan containing accompanying action steps and recommended interventions. The concluding action plans are presented in the recommendations section of this paper. Additional reflections include reflection on the action research process, use of CBAM as a diagnostic instrument, and recommendations for future study.

Action Research and the Local Context

According to Edwards and Willis (2014), "Lewin was an early proponent of the need to consider local context and local history when trying to support change … local, context-sensitive change" (p. 11). Based on this belief, Lewin advocated researchers engage and collaborate with local stakeholders. Stringer (2007) underscored the locality focus of an action research study and the holistic goal of understanding stakeholder concerns, perspectives, and responses to the issue being studied. Similarly, Newhouse (2001) echoed this belief stating that "the CBAM requires the researcher to be immersed within the scene of the innovation and to continually refine judgments associated with the diagnostic dimensions" (p. 2). The belief in conducting action research at the local level aligns with the concept of collecting data in the participants' natural setting in case study and qualitative research. Therefore, the researcher conducted the qualitative case study using the action research process at the institution where the innovation is being implemented; however, as in this case study, a researcher who is also a member of the organization under study is considered as undertaking insider action research (Coghlan et al., 2016).

Insider Action Research

For the purpose of this study, the researcher selected to investigate her own site.

The benefit of conducting insider research is two-fold. To begin with, insider action researchers are uniquely situated to have what Coghlan (2007) referred to as "preunderstanding" (p. 339). Preunderstanding refers to the personal experience and knowledge of the setting, context, and organizational dynamics (Coghlan, 2007). Stringer (2007) acknowledged the value of insider researcher knowledge, stating that outsider researchers lacking preunderstanding and forcing their own theories "are likely to either misrepresent or misinterpret the situation" (p. 188). A second benefit of insider research refers to the researcher's role as a full organizational member. Unlike outsider researchers, the insider researcher has established relationships, trust, and entry into the organization (Herr & Anderson, 2015). Trust is considered an essential element in action research in order to elicit truthful participant responses about their concerns, perceptions, and opinions (Mertler, 2009). Additionally, the researcher holds multiple points of entry within the setting and does not require the aid of a liaison.

Although insider action researchers are well established within the site, they are also challenged to mutually balance the duality of an organizational member role and action researcher role at the same time. According to Coghlan et al. (2016), attempting to fully maintain these roles may cause conflict between "formal hierarchical and functional roles and informal roles of colleagueship and possible friendship" (Coghlan, 2007, p. 340). As a result, a researcher may need to practice detachment from familiar roles in order to maintain full researcher membership (Coghlan, 2007). Insider researchers may also need to explicitly clarify their role during the research process. This is primarily achieved through the use of informed consent, which is explained more thoroughly in a later section.

First-person, second-person, third-person inquiry. Action researchers cannot claim neutrality when conducting research, as their role and voice is an embedded component of the problem-solving process (Herr & Anderson, 2015). In action research, the researcher's voice is documented throughout the study, reflecting their context knowledge, personal reflections, observations, and collaboration with participants. While atypical for quantitative research, it is not uncommon for the qualitative, action researcher's voice to be written in the first person (Herr & Anderson, 2015). First-person inquiry refers to individual inquiry into one's own practice, beliefs, and behaviors and is often recorded in autobiographical writing such as journals (Coghlan, 2007; Herr & Anderson, 2015). Creswell (2014) suggested engaging in reflective practice goes beyond acknowledging the researchers' background or biases, by explicitly identifying how those elements "may shape the direction of a study" (p. 186). In this study, the action researcher utilized reflective journals to document inquiry into her own practice, actions, and observations. This first-person inquiry is written in the form of personal narrative, using "first person 'I' or collective 'we' pronouns" (Creswell, 2014, p. 206).

As previously discussed in Chapter 2, the role of an action researcher is also collaborative and participatory. Second-person inquiry refers to collaborative inquiry into a phenomenon of shared concern (Coghlan, 2007). In this study, second-person inquiry was documented through the use of researcher and participant reflective journals, and researcher field notes. Second-person inquiry demonstrates the reflective collaboration and dialogue that occurred between the researcher and participants during each action research cycle. Second-person inquiry also aligns with representing multiple perspectives consistent with case study research. Coghlan (2007) suggested third-person inquiry refers to the collection of understanding gleaned from first- and second-person inquiry during the study. This newly constructed knowledge is then shared with a larger audience for their own reflection and application. Herr and Anderson (2015) believed sharing insider accounts is invaluable to the research community who otherwise would not have access to this type of knowledge. In this study, third-person inquiry occurs in the concluding chapter.

Positionality. Just as interpretivist qualitative researchers must consider multiple participant perspectives and realities, insider action researchers must consider the lens from which they view reality (Anderson et al., 2007). Positionality is described as the balance between aiming for objectivity and mutually acknowledging our subjectivity (Bourke, 2014). Merriam et al. (2001) described positionality is determined based on "where one stands in relation to 'the other'" (p. 411). The authors went on to note that these positions are constantly shifting, depending on a researcher's background, culture, gender, education level, socioeconomic status, or length of time as an insider (Merriam et al., 2001).

Positionality was articulated through the researcher's self-examination and in-depth reflection of her role, insider status, and lens from which she approached and conducted research. Herr and Anderson (2015) criticized action researchers who avoid authentic self-reflection or explicitly addressing their insider positionality, stating that "to downplay or fail to acknowledge one's insider or participatory status is deceptive and allows the research to avoid the kind of intense self-reflection that is the hallmark of good practitioner research" (p. 58). Herr and Anderson (2015) suggested insider action researchers reflect about their positionality by responding to the following questions:

1. Who is the researcher to the research process?
2. What is the researcher bringing in terms of roles, values, beliefs, and experiences?

3. Is the researcher an insider to the research? An outsider? Somewhere on the continuum?
4. Who is the researcher in terms of hierarchy and status?
5. How do these multiple positions impact the research design and process? (p. 97)

The researcher's first-person inquiry response to these reflective questions follows.

Researcher Reflection

1. Who is the researcher to the research process? I am a Caucasian, cisgender, heterosexual female in her late 30s. I have northern roots but have lived in the southeastern United States for nearly my entire adulthood. I am divorced with two children and consider myself a Christian. I hold multiple roles at the site institution, as a student and employee. I received my undergraduate degree from the site institution, earning a bachelor's degree in sign language in a traditional on-ground program. I received my graduate degree in educational technology from a state institution in a fully online program and then returned to my alma mater to complete my doctoral work in curriculum and instruction, in a hybrid program. In total, I have a 19-year history with the institution.

2. What is the researcher bringing in terms of roles, values, beliefs, and experiences? As a product of two parent educators, the value of education has been ingrained in me since I was a child. I strongly believe that every person has the innate ability to learn and should be extended opportunity. I believe that no one should be devalued for trying to learn a new skill or seek help doing so. My experience working with disabilities has significantly influenced the way in which I work and interact with others. I also strongly believe in advocating for underrepresented groups and confronting prejudice and discrimination. I am cognizant of my White privilege and other social statuses and strive to be accepting of all peoples in both my speech and actions.

3. Is the researcher an insider to the research? An outsider? Somewhere on the continuum? I have chosen to conduct research at the institution of which I am a member; however, my status as an insider and outsider varies depending on the situation and individuals. My insider status comes from my long-standing with the institution as both an undergraduate student and staff member. In a former role as an interpreter, I was often present in faculty classrooms and meetings where I would otherwise not have had entry. When I transitioned into a new role, my position of power shifted. Previously, I was a conduit of language; while in my new role, I became a gatekeeper to technology. My new role afforded me greater access to both instructors' courses and insecurities or concerns. My ability to navigate both academic and technical jargon has been an asset in negotiating relationships. I have developed trustworthiness and collaborative relationships with faculty but also must maintain a balance when sharing my observations to senior administration about suggestions for improvements in regard to online course design and delivery.

4. Who is the researcher in terms of hierarchy and status? I hold the rank of instructor, which is at the bottom of the faculty hierarchy structure. I am considered an ABD as it pertains to my doctoral status. While in some circles my level of education is insignificant, in others, it carries weight. Although I am well-respected on campus, I do not hold full-time faculty status; do not have voting privileges; and work a year-round, time-sheet driven schedule, thus separating me from the traditional faculty experience. Furthermore, while I attend faculty functions, I do not report to an academic discipline specific department. I do not teach in a full-time capacity but rather serve as an adjunct instructor. Though I follow a different reporting structure, I am afforded regular, direct access and communication with senior administration.

Although I am not a full-member faculty insider, I am also both an insider and outsider in the staff community. In schedule and reporting structure, I am aligned with my staff colleagues; however, the nature of my role and interactions on campus afford me greater flexibility. When compared to my staff colleagues, a perceived increase in status is present as it relates to my interaction with faculty and senior administration. My status fluidity allows me access to both groups, but the opposite status keeps me from being a full-member of either. I deeply resonate with Liberman's (2001) remark about the paradox of change agents developing a community of teachers but they themselves are without a community of their own.

5. How do these multiple positions impact the research design and process? In my interactions with faculty, I have a range of collegial relationships ranging from business colleague to friend. Those participating in the study may have done so because of their willingness to support me in my research. This blur of friend-participant roles needed to be clearly defined in an effort to lessen the impact to the data collection and analysis process. Furthermore, I asked participants to articulate thoughts and feelings rather than relying on assumed knowledge based on relationships outside of the researcher-participant role. I also reestablished measures of confidentiality, regardless of whether a pattern of trust had been previously established. There may also have been faculty who were less likely to participate in the study due to the fact that I am a known technology advocate and a representative, in some ways, of administration.

As a component of case study and action research, the researcher continued to self-assess and reflect on her insider status, roles, and positionality as they impacted the research design, data collection, interpretation, and analysis. Researcher reflections were documented in the form of journals and thick description. The following section will address the researcher's methodology selections including participants, instruments, and data analysis.

Methodology Design

The methodology for this case study was selected to holistically understand user concerns, behaviors, and implementation fidelity of video in online courses. Action research was used to guide each action cycle of participant selection, data collection, reflection, and analysis.

Participant Selection

Insider action research alludes to the idea of studying and collaborating with participants from one's own site. As the goal of this case study was to seek understanding about the behaviors, concerns, and implementation of a particular representative group (Fitzpatrick et al., 2011), online instructors, purposive sampling was used. Operational criteria of qualified participants (Yin, 2014) identified for the purposive sample included full-time teaching faculty status, assigned as the primary instructor, online [or hybrid] course designation, hosted in the Blackboard Learn LMS, and 12-month time period. Therefore, the selection of full-time teaching faculty instructors employed at the institution who were assigned to teach an online [or hybrid] course during the 2016-2017 academic term was appropriate. Using a database tool, a report of online courses taught between the Fall 2016 academic term through Fall 2017 was generated. Courses designated as online or hybrid were included; courses designated as dissertation, thesis, seminar, or internship were excluded from the study. Of the remaining 580 courses, a list of full-time teaching faculty instructors was generated.

Instructors who were no longer employed or associated with the institution, deceased, or no longer serving in a full-time teaching capacity were removed from the potential participant pool. Additionally, one instructor was removed due to a role-based conflict of interest. Adjunct instructors were not included in the eligible participant pool. The resulting eligible participant list was 82 full-time teaching faculty instructors. Eligible participants equally represented disciplines in both the arts and sciences, 49% and 51% respectively. All program levels (undergraduate, graduate, and doctorate) were represented in the participant pool.

Participant recruitment-Cycle 2. Participants who met the purposive sampling criteria were recruited to participate in the first cycle of data collection. An email was sent to participants containing a link to the Stages of Concerns Questionnaire. Data collected in Cycle 2 were used to create an overall organizational concerns profile, compare individual profiles to the organizational profile, and identify specific concerns related to adopting video as an innovation in online courses.

Participant recruitment-Cycle 3. Participants in Cycle 3 were a subset of eligible Cycle 2 participants. Cycle 3 participants met the original Cycle 2 purposive sampling criteria and completed the SoCQ instrument resulting in an individual concerns profile. Following the conclusion of Cycle 2, potential participants were contacted via email to inquire about their willingness to participate in Cycle 3. Cycle 2 participants were given the option of declining participation in Cycle 3. Cycle 3 data collection was more in depth in nature, including an LoU interview and collaboration with the researcher on data collected. Due to the in-depth, personal data collection, participant size was significantly reduced compared to Cycle 2.

Participant Ethical Considerations

When using participants to conduct research, it is incumbent on the researcher to protect the privacy, confidentiality, and well-being of participants. The researcher fully acknowledged her position and influence at the institution required clarification so participants did not feel exploited, pressured, or at-risk by electing or declining to participate in the study. As this paper has already addressed, change is personal. Individuals respond to change both in actions and feelings; therefore, it should be expected personal, intimate feelings and actions may be shared in the data collection process. Additionally, less than desired results that may be observed or measured could impact a participant's profession including salary, promotion, or tenure. A component of protecting participants' well-being is protecting the information that may be disclosed by the participant as well as how it is reported and shared. The researcher informed participants of how data would be collected, stored, and shared, prior to and during their participation in the study.

Confidentiality. Fitzpatrick et al. (2011) suggested the terms confidentiality and anonymity are often confused. As a result of the researcher's intention to collaborate with participants throughout the research process, anonymity was not assured. Confidentiality, however, refers to the protection of participant identifiers linking them to the study. For this study, the expectation of confidentiality encompassed participant names, demographics, discipline, course identification, data collection results, and even participation in the study itself. The researcher established protocols to ensure participant identifiers and data collected were kept confidential. Although participants were not asked to disclose any identifying demographic indicators during Cycle 2 data collection, they were given an option to enter their email address and submit a unique word or phrase if they desired to review their results or participate in further data collection cycles (3-4). Due to the potential of participants being matched with their Cycle 2 results, participants were not informed their data were to be considered anonymous. Cycles 3 and 4 data collection involved participant interviews, observations, and personal reflections. In order to protect the identity of participants, the researcher used pseudonyms when referring to each individual (Creswell, 2014); however, given the size of the institution and thus smaller academic departments, confidentiality must be seriously observed when sharing data and describing participants—even when using pseudonyms. For example, the combined use of gender, discipline, rank, or length of term could easily reveal a participant's identity, even if the name has been changed; therefore, the researcher refrained from including any participant demographic when reporting findings.

Power and exploitation. As a nature of her role at the institution, the researcher has administrative access to the Learning Management and Student Information systems, as well as other confidential information such as employee credentials. Based on this power imbalance, the researcher established two measures of accountability: (a) the researcher obtained permission of the instructor prior to accessing their course(s) in Blackboard, and (b) the researcher requested the Blackboard administrator create a "course level" researcher role in Blackboard, along with a list of courses to access. The purpose of using an alternate course role was to establish separation from employment duties where an administrative role is utilized to access the LMS and to maintain transparency with the instructor by documenting and displaying user enrollments; the system administrative role does not record user activity or display to the instructor as an enrolled user in the course.

A second power imbalance addressed was the act of coercion or retribution. The researcher clearly communicated to institutional members that their participation in the study was voluntary. Given that the researcher is in a position of power to grant or deny access to institutional systems, participants were informed that choosing to decline or stop participation in the study would not result in any retribution or consequence (Appendix B). Furthermore, the researcher acknowledged her direct access and regular contact with senior administration. The researcher clearly communicated identifiable data findings, observations, and information shared by participants would not be shared with anyone, including senior administration (including, but not limited to, program coordinators, chairs, deans, associate provosts, provost, or president).

An additional component of the researcher-participant relationship within action research that should not be overlooked is that of trust. Mertler (2006) stated that “trust involves vulnerability and risk” (p. 133). In establishing a relationship with participants as an aspect of the research process, the researcher risks the credibility and rigor of their study; however, Mertler (2006) referenced Glesne (2006), stating that the researcher must, “acquire the status of a ‘trusted person’ in the setting” (p. 80) in order for participants to be vulnerable, honest, and open with the researcher. Likewise, as participants risk sharing personal information, the researcher becomes vulnerable by sharing self-inquiry and allowing participants to engage in the action planning process. As already discussed earlier in this paper, the trust relationship between the researcher and participant(s) validates why the researcher was the most qualified individual to collect data for the study. The researcher has developed and established trust relationships with faculty instructors grounded in respect and understanding. Based on this mutual relationship of risk and vulnerability, researchers establish trust with participants by modeling transparency and exercising reciprocity.

Transparency. In attempting to exercise transparency with all stakeholders, the researcher must be explicit with her intentions, explanations, and descriptions. This intentionality extends to all facets of the study from the genealogy of preliminary observations and initial research questions to reporting data findings and conclusions (Marshall & Rossman, 2006). The researcher attempted to achieve transparency by clarifying her role, acknowledging power imbalance, and addressing researcher bias. Furthermore, Creswell (2014) recommended researchers avoid deceiving participants by reminding them of the purpose of the study. The researcher provided instructions and informed consent during each cycle of data collection. Consistent with action research methodology, the researcher made data collection, analysis procedures, and results "public, [and] not remain magical" (Marshall & Rossman, 2006, p. 205) to cycle participants.

Reciprocity. Creswell (2015) suggested one way to prevent participation exploitation is to incorporate some type of reciprocity back to the participants. Marshall and Rossman (2006) advised researchers to be sensitive to a participant's willingness to give of their time and return the courtesy in kind. They went on to suggest examples of reciprocity such as offering a service or gesture within the researcher's ethical boundaries (Marshall & Rossman, 2006). The action research method aligns with this approach by offering to genuinely listen (Marshall & Rossman, 2006) to concerns about an innovation, what instructors are doing in their online courses, and by inviting participants to engage with the data as collaborators. This reciprocal relationship prevents participants from feeling used or exploited for their data (Creswell, 2015). As a result, the researcher extended an invitation to Cycle 3 and 4 participants to review and discuss collected data and to collaborate on the formation of an action plan. This offer served as an exchange for the information and time participants have provided to the researcher (Creswell, 2014). Cycle 2 participants were anonymous to the researcher; but upon submission of the SoCQ survey, they were thanked accordingly for their participation and informed of their ability to access results at any time during or after the study.

Instrument Selection

In order to obtain a holistic understanding of instructors' behaviors, concerns and implementation fidelity of video in online courses, the researcher used a multi-modal approach. Case studies are not bound to a particular research method and may employ both qualitative and quantitative methods to obtain a rich description and understanding (Fitzpatrick et al., 2011). Creswell (2014) asserted in order to develop a complex understanding, qualitative researchers utilize multiple sources of data rather than a single data source. Common qualitative methods include conducting interviews, observing behavior, and studying documents and audiovisual information (Creswell, 2014; Fitzpatrick et al., 2011; Yin, 1989). Data for this study was primarily collected from CBAM diagnostic instruments. The CBAM instruments were used to gather qualitative data about participants' concerns and behaviors. Data were supplemented by direct observation, researcher and participant journal entries, and researcher observational field notes. As discussed earlier in this chapter, research was conducted in a series of action research cycles. Research instruments were presented in a data collection matrix (Creswell, 1998), Table 5, along with their associated action research cycle.

Table 5

Research Question and Alignment Chart

Research Question	Action Research Cycle	Instrument	Data Collected
How do you describe the adoption and implementation of video in online courses?	Cycle 2	SoCQ (Quantitative and Qualitative)	Concerns profile; identification of specific concerns; comparison to organizational stages of concern.
	Cycle 3	LoU Interview (Qualitative)	LoU Behavior profile; qualitative descriptions of how innovation is or is not currently (last 3 months) being used to substantiate rating.
	Cycle 4	IC Direct Observations (Qualitative)	Evidence of how an adopted innovation has been implemented in select online courses; examples of CoI dimensions represented in select online courses.
	Cycles 2, 3, 4, 5	Reflective Journal (Action Researcher) (Qualitative)	Documented data collection procedures, observations, thoughts
	Cycles 2, 3, 4, 5	Reflective Journal (Participant) (Qualitative)	Documented thoughts, observations, action plan/steps

CBAM Diagnostic Dimensions

Three diagnostic dimensions were used to holistically measure a participant's concerns profile, behavior profile, and current application uses of video in online courses. Stages of Concern were measured using the Stages of Concern Questionnaire (SoCQ); Levels of Use were measured using the Levels of Use Interview; and Innovation

Configuration fidelity was collected through observational data. The following section describes each diagnostic dimension and diagnostic instrument, steps to ensure confidentiality and informed consent, collecting and storing data, analyzing and sharing data results, and instrument reliability and validity.

Stages of Concern Profile

As previously discussed, change is personal; therefore, it is appropriate to expect that a user's concerns would be personal and individualized based on how they were responding to a particular innovation. In the SoC dimension, the way a user's response to change is described is as a SoC profile or concerns profile. Individual user SoC profiles indicate the intensity of concerns for each of the seven stages (SEDL, 2011) represented graphically as peaks and valleys. Although specific concerns may vary from user to user, the categories in which they are organized are less diverse. Researchers may then use individual profiles to suggest targeted "concerns-based interventions" (Hall & Hord, 2015, p. 88). Collectively, individual profiles may be used when comparing one concerns profile with the organization or group profile; however, Hall and Hord (2015) cautioned against dismissing individual concerns based on the average group profile.

Measuring a SoC profile. SoC user profile data may be collected through several assessment methods including brief verbal exchanges called One-Legged Interviews (OLI) or by means of written responses called an Open-Ended Concerns Statement. OLIs allow for SoC assessment to be inserted into any type of conversation but rely on the evaluator's ability to hear and interpret the user's words accurately (Hall & Hord, 2015). Alternatively, Open-Ended Concerns Statements allow evaluators to accurately capture a user's words but rely on the user to disclose sufficient details in order to rate the stages of concerns appropriately (Hall & Hord, 2015). Although one-legged interviews and open-ended concerns statements are practical for informal, conversational use, a more formal and rigorous assessment measure, the Stage of Concern Questionnaire, is essential for research purposes.

Stages of Concern Questionnaire (SoCQ)

The Stage of Concern Questionnaire is a self-reported, quantitative instrument designed to measure how an individual user is feeling about an innovation (George et al., 2006). The quantitative scores are then used to identify and describe users' concerns. The individual concerns profile can be used to address individual users' concerns or, when grouped together, can be used to create an overall concerns profile for the organization. Furthermore, the individual concerns profile can thus be compared to the organizational profile.

In its original 1979 version, the SoCQ comprised of 195 items, or concerns statements; but after further study identifying 60% common variance among items (Hall, 2013), that number was reduced to 35, five items per scale (George, Hall, & Stiegelbauer, 2013). A recent revision in 2006 (SoCQ Form 075) added items specifically designed to address Stage 0, unconcerned. Prior to 2006, Stage 0 was not included in the diagnostic assessment due to the belief of external consultants that Stage 0 did not exist (Hall, 2013). The researcher will utilize the online version of the SoCQ (Form 075), which is available by the Southwest Educational Development Laboratory (SEDL), an affiliate of American Institutes for Research (AIR). Copyright permission and use of the SoCQ Online was granted by SEDL/AIR (Appendix C).

SoCQ confidentiality and informed consent. Participants accessed the online SoCQ (075) by clicking on a customized link from within a personalized email (Appendix D) sent out to qualifying faculty; no login credentials were required.

Additionally, each participant was given a numeric ID; no identifying information such as name or email address was required. “The Stages of Concern Questionnaire (SoCQ) has four parts: the cover letter; the introductory page; two pages of statements, or items, for the respondent to evaluate; and the demographic page” (George et al., 2006, p. 23). Although the questionnaire has a demographic section for subgroup categorization, the researcher did not request demographic information. This decision was made in order to maintain participant confidentiality as much as possible.

An introductory statement informed participants of the purpose of the survey and outlined participant rights and explanation of confidentiality. Prior to beginning the survey, participants were asked to submit their consent to participate in the study. A prompt message appeared if a participant attempted to proceed with the SoCQ survey without providing their consent. A prompt also appeared if a participant attempted to submit an unfinished survey.

SoCQ data collection. SoC data may be collected using a paper or web-based survey (George et al., 2006). For the purposes of this study, an electronic version of the questionnaire was used (SoCQ 075). Prior to the beginning of the survey, participants were provided an explanation of the purpose of the SoCQ and how data were collected. The explanation uses a generic example, *pizza*, as the innovation studied, which does not threaten or influence the research results of this study (American Institutes for Research, 2018). In order to validate the results using this instrument, the authors strongly recommend that only the innovation term under study should be modified; therefore, for the purposes of this study, the term “innovation” was replaced with “videos in online courses.” The electronic version of the SoCQ automatically replaces the term “innovation” with the term or phrase designated by the researcher.

The SoCQ instrument is divided into seven scales, which align with the seven stages of concerns about an innovation. Using a 0-7 Likert scale, respondents indicate "how true the item seems to them at the present time" (George et al. 2006, p. 23). Responses range from "irrelevant" to "very true of me now." Each stage has five items with a scale of 0-7, resulting in a possible raw score of 0-35 for each scale. Based on a predetermined percentile table, the raw score is converted for each scale individually. Rather than an individual score, these calculations result in a concerns profile, "showing their intensity of concerns on each of the seven stages" (SEDL, 2011). In addition to the concerns profile, an open-ended question collects qualitative respondent statements.

SoCQ data results. Once submitted, a participant has the opportunity to review their submitted responses and a graph displaying their concerns profile (American Institutes for Research, 2018). The participant may copy the results or download the chart for future reference. Optionally, the participant is prompted to send results to an email address of their choosing. The email address entered is not shared with the survey administrator. In this study, the researcher included a customized prompt asking the participant to enter a unique word or phrase. This unique word or phrase was known only to the participant and was used to identify and pair the user with their SoCQ results upon their participation in further cycles of study.

Concerns profiles were stored on the AIR website. In addition to the survey administrator (researcher) and individual participants, access to survey results are limited to AIR site administrators. AIR maintains that data is not shared with third parties and is not viewed or used without permission. AIR attempts to maintain participant confidentiality by establishing a series of system security features (Appendix E).

SoCQ reliability and validity. According to George et al. (2013), the SoCQ has been “tested for estimates of reliability, internal consistency, and validity with several samples and 11 innovations” (p. 11). A comparative analysis conducted by Cheung et al. (2001) tested the validity and reliability of the SoCQ when used with teachers (George et al., 2013). Critical to the reliability and validity of this instrument is the generic wording of the 35 statements. Beyond the allowance of exchanging of the term “*the innovation*” for the actual name of the implemented innovation or initiative, researchers are adamant that the wording and order of items must not be changed (George et al., 2013). In order to maintain the validity of this instrument, adaptation of the instrument is strongly discouraged. “Even the slightest modification of the SoCQ could result in invalidation of the scoring and norms and lead ultimately to misinterpretation of the results” (George et al., 2006, p. 55); however, the survey language may be modified to denote the specific innovation being studied. Therefore, again, for the purpose of this study, the researcher only replaced the term *innovation* with the phrase *videos in online courses*.

Levels of Use Behavior Profile

In contrast to a concerns profile, LoU behavioral profiles indicate how a user is acting or behaving in relation to an innovation. According to Hall and Hord (2015), “Levels of Use provide planners with an evidence-based metric for understanding the status of each group and individual, and for determining appropriate support for advancing the change process” (p. 119). The following section details how LoU behavior was collected and measured.

Measuring LoU behavior profile. In the shift from measuring attitudes and perceptions to actions and behaviors, Hall (2013) argued that a self-reporting questionnaire, like the SoCQ, cannot accurately or reliably measure an individual’s behavior. Despite other researchers’ attempts to identify a paper-and-pencil method to determine a user's LoU behavior profile, Hall and Hord (2015) advocated only two reliable assessment measures: "long-term observation or use of a specially designed Focused Interview Protocol" (p112). Furthermore, the authors make clear that of the two configuration interview styles used to measure LoU, the LoU One-Legged Interview should be used informally by facilitators and is not acceptable for formal research studies. Only the LoU Focused Interview should be used for research and evaluation purposes (Hall & Hord, 2015), as was the case in this study.

LoU Focused Interview

The LoU interview is a focused interview incorporating a combination of required branching questions and interviewer probing questions (Loucks et al., 1975). The 20-30 minute interview is guided by a series of interview protocols, decision points, and operational definitions to measure "what the interviewee is doing (or not doing) in relation to a change/innovation" (Hall, 2013, p. 273). The focused interview is a more structured style than traditional, open-ended, qualitative interviews but offers flexibility in comparison to a rigid, standardized, and highly structured interview style that does not allow for complex responses and follow-up questions (Creswell, 2014; Loucks et al., 1975).

Creswell (1998) recommended the use of protocols when conducting an interview. Protocols aid the interviewer in documenting notes and organizing interviewee responses. Based on the significance of obtaining accurate descriptions of interviewee behavior for each of the eight behavior profile categories, it is critical that the researcher follow interview protocols when conducting an LoU interview. The LoU Focused Interview protocol is preestablished by researchers, and exact wording is to be used worldwide.

Focused interview protocol. The focused interview protocol is a set of required questions that "measures teachers' actions in eight behavioral profiles along a continuum of use" (George et al., 2006, p. ix) as they become more experienced in adopting an innovation (American Institutes for Research, 2018). The protocol follows a branched format (Appendix F) depending on the interviewee's response to interview questions. One critical distinction within the LoU interview is determining whether an individual is a user or nonuser of the innovation (Hall & Hord, 2015). Once identified, further inquiry reveals the degree of current or planned use in the future. Using the focused interview protocol, interviewers ask specific questions to measure and record examples of use. In addition to the focused interview questions, the interviewer may ask clarifying or probing questions in order to collect sufficient examples to validate level of use.

LoU informed consent and confidentiality. Cycle 3 participants were informed of the purpose of the LoU interview, participant rights, and expectations of confidentiality. Participants were asked to sign a consent form indicating an understanding of their rights and decision to participate in the LoU interview. Due to the necessity of a second rater, the informed consent also included a requirement that the interview be audio recorded. It was made clear that the recorded interview was only shared with the second rater. In order for confidentiality to be maintained, the researcher used participant IDs in lieu of participant names. This also helped the second rater preserve and organize participant data and results. Recorded audio files were saved to a web-based file folder, which was shared directly with the second rater.

LoU reliability and validity. As previously indicated, a self-rating questionnaire is not a valid or reliable instrument to measure behavior (Hall, 2013). Instead, an LoU interview is used to measure what an interviewee "is doing (or not doing) in relation to a change/innovation" (Hall, 2013, p. 273). As an insider action researcher, the researcher elected to assume the role of interviewer. Merriam (1998) acknowledged the advantage of the researcher-as-instrument when conducting interviews. The delicate skill of adjusting probing questions results in additional details, clarification, and examples. Loucks et al. (1975) suggested that having an intimate knowledge of each LoU, categories, and innovation helps to elicit important information that contributes to an overall LoU rating. Therefore, Cycle 1 reflects the action taken by the researcher to become LoU certified under the tutelage of Dr. Gene Hall. The information generated from the LoU interview contributes to the researcher's overall understanding and substantiates the validity of her findings; however, despite the strengths of an insider researcher conducting interviews, a human element exists on the part of the researcher-as-instrument. Measures were taken to ensure interviewer validity and reliability.

Utilizing trained interviewers ensures reliability of the LoU interview. According to Hall (2013), "a trained and certified LoU interviewer has three core skills: fully knows and understands the construct; uses the established interview protocol and can create appropriate follow up probes; and can reliably rate LoU interviews" (p. 273). Trained interviewers follow a branched interview format with specific questions at each point. Likewise, the interview questions are generic and do not vary between the innovation being studied (Loucks et al., 1975). In addition to the standardized interview, interviewers use an interview rating sheet to document evidence of behavior and decision points.

A further consideration in regard to validity and reliability is interviewer fatigue. According to Creswell (1998), "conducting interviews is taxing, especially for inexperienced researchers engaged in studies that require extensive interviewing" (p.

130). Loucks et al. (1975) referred to this as interviewer “brain-fade” (p. 16) severely impacting one’s ability to concentrate on the interview process. To avoid human-as-instrument fatigue (Hall, personal conversation quote; Yin, 2014) and to ensure accurate results, the researcher limited herself to conducting one interview per day; thus, the use of these reproducible procedures aims to maintain consistency from one interview to another. Merriam (1998) also suggested interviewers should “assume neutrality with regard to the respondent’s knowledge” (p. 84). As previously discussed, the researcher avoided assuming knowledge solely based on existing relationships and understanding of institutional history and culture.

In addition to a trained interviewer, reliability is also dependent on trained LoU raters. In order to obtain a reliable LoU rating, interrater reliability is required. Both raters reviewed the audio recorded interview(s) and, using the LoU rating sheet, determined a single, overall LoU rating. “The overall assessment is determined through a holistic view of the Categories along with full consideration of rating of behaviors that are indicative of a certain Decision Point" (Hall et al., 2013, p. 9). Raters must agree when determining an overall LoU rating. When agreement does not occur, a third rater must be acquired. This process continues until two raters agree on the same overall LoU rating (Loucks et al., 1975). This practice demonstrates reliability of both the instrument and analysis. Additionally, an LoU rater must adopt a gestalt perspective when determining a user’s Level of Use rating (G. Hall, personal communication, August 8, 2016, February 2, 2017). A rating is more than tally marks or a singular example. Instead, a rating is determined through multiple indicators and operationalized decision points. According to Hall and Hord (2015), “Levels of Use provide planners with an evidence-based metric for understanding the status of each group and individual, and for determining appropriate support for advancing the change process" (p. 119). This process was followed to determine a participant's LoU overall rating, describe reported behaviors, and suggest support interventions.

Innovation Configuration Map

While the SoC Questionnaire and LoU Focused Interview are designed to identify a user's concerns and behavior profiles, the innovation configuration map (IC Map) is used in "identifying the major components of an innovation and then describing the observation variations of each component" (Hall & Hord, 2015, p 60). Similar to a rubric (see Figure 14), the IC Map has a series of components, or category statements, and sequenced variations describing the different ways in which an innovation could be operationalized. Each category statement defines the ideal, observable outcome and must be written to "represent the innovation implemented fully and successfully" (Newhouse, 2001, p. 3).

Component 1:		(dimension 1, dimension 2, dimension 3)	
a	b	c	d
Component 2:		**(dimension 1, dimension 2, dimension 3)**	
a	b	c	d
Component 3:		**(dimension 1, dimension 2, dimension 3)**	
a	b	c	d
Component 4:		**(dimension 1, dimension 2, dimension 3)**	
a	b	c	d
Component 5:		**(dimension 1, dimension 2, dimension 3)**	
a	b	c	d

Draft Version: ______________________________ Date: ____________________

Figure 14. Innovation Configuration Map.

Hall (2010) underscored the importance of instituting clearly written descriptions of the ideal configuration and expected outcomes. Without such descriptions, Hall (2010) argued that implementers will struggle with identifying "which components and practices really are most critical to success" (p. 249), resulting in configurations that "range from high fidelity to drastic mutations of what the developer envisioned" (p. 249).

These "word picture" descriptions (Hall & Hord, 2015) create an observable and measurable rubric from which a user can assess how close their implementation aligns with the ideal; however, the IC Map is distinctly different from a traditional rubric in two ways.

First, the placement and sequence of variations is displayed in reverse where the ideal *a* Variation is shown first and the *e* Variation is located on the far right. Hall and Hord (2015) explained the purpose of the reverse order as users work towards achieving the ideal variation:

> As one moves from the *e* Variation toward the *a* Variation, the behaviors and practices described increasingly approach the more ideal practices as viewed by the innovation developer or some consensus group, usually those who developed the IC Map…. Laying the component variations along such a continuum from more to less desirable can be very helpful. (pp. 61-63)

Second, a mature IC Map features two distinct lines, one solid and one dashed, separating variations of components.

> A solid line signifies that all of the variations to the right have been judged to be "unacceptable" ways of doing that component; all of those to the left of the dashed line are considered "ideal" practices, whereas those between the solid and dashed lines are viewed as "acceptable." (Hall & Hord, 2015, p. 63)

The fidelity lines layered on top of the variation descriptions provide benchmarks to the instructor indicating whether implementation of the innovation falls within the ideal or acceptable range or has mutated to an unacceptable degree; however, the authors made clear that because of its iterative development, fidelity lines "should not be added until after the IC Map has been through several revisions and has been used in data collection"

(Hall & Hord, 2015, p. 63). As a result, IC Maps are developed after a series of observations and collaborative discussion.

Innovation Configuration Map Preliminary Development

Traditionally, an IC Map draft is developed by studying available materials and interviewing experts or the developer in order to ascertain a description of the ideal configuration (Hall, 2010). Research on IC Maps (Donovan, Green, & Mason, 2014; Swain, 2008) underscore that the development of an IC Map is both an interactive and iterative process that should be conducted by a team rather than an individual. This approach aligns with the action research process where cycles of observation, planning, action, and reflection are not done in isolation. A stakeholder team, knowledgeable about the innovation, should work together to develop a preliminary draft of an IC Map (Hall & Hord, 2015). The researcher used the IC Mapping Process (Appendix G) to guide the innovation configuration collection process (Hall & Hord, 2015); however, due to the bounding of this case study and in order to protect participant confidentiality, the researcher limited the IC Mapping Process to observations, interviews, and key documents (Hall & Hord, 2015). The researcher used a combination of direct observation and participant reflections to document existing operational forms of the innovation at the institution. The result of these observations contributed to the development of an action plan (Cycle 5) later in the future.

Direct Observation

According to Fitzpatrick et al. (2011), observation includes "observations of program context and activities, participant behaviors, and environments" (p. 442). Hays (2004) advocated direct observations are vital to case studies researching classrooms or schools. She went on to state that "interaction of individuals cannot be understood without observation" (Hays, 2004, p. 229). Creswell (1998) further added to this understanding, indicating that direct observation allows researchers to learn about participant activities in a natural setting. Therefore, the researcher used direct observation to gather data about how participants are currently using video in their respective online courses.

Informed consent and confidentiality. Cycle 4 participants were informed of the purpose of direct observation, participant rights, and expectations of confidentiality. Participants were asked to sign a consent form (Appendix H) indicating an understanding of their rights and decision to participate in the Cycle 4 data collection. In order to include participants in the decision-making process, the researcher asked to observe two online courses of the participant's choosing; however, courses selected were required to meet the researcher's criteria as fully online courses taught by the instructor. Once permission was granted by participating instructors, the researcher submitted a request to the Blackboard Administrator for access to the course(s) using a customized role. As previously discussed, the researcher's access to Blackboard courses was clarified with participants. The purpose of using an alternate, customized course role was to further establish separation from administrative employment duties requiring access to the LMS and to maintain transparency with the instructor by documenting and displaying user enrollments. Access to these courses was terminated at the conclusion of the study.

Direct observation data collection. Using a priori categories, observations were guided by the Community of Inquiry framework: social presence, instructor presence, and cognitive presence. While research has shown that the incorporation of video supports gaps in social and instructor presence (Garrison et al., 2000), concern for split attention and cognitive load (Homer et al., 2007; Mayer & Moreno, 2003) must also be considered. Therefore, evidence of cognitive load theory and theory of multimedia cognitive load found in observed videos were also noted.

Hays (2004) recommended researchers clearly indicate the number of observations that will be conducted, along with establishing observational protocols to guide the data collection. The use of observational protocol serves two purposes. The first purpose is to limit the researcher's observations to specific components of the class. Second, it is important to accurately describe what the researcher will be looking for during the observation period. Given that the observation took place in a virtual classroom without the presence of the instructor participant, the researcher had to acknowledge her invisibility within the course(s) (Nørskov & Rask, 2011). Although consent was sought prior to conducting observations, specific steps were taken to address any heightened instructor participant concerns as well as concerns surrounding reliability and validity.

Reliability and validity. The researcher established an observational protocol and protocol form (Appendix I) to increase reliability and validity. Creswell (1998) suggested dividing the observational protocol into two separate columns: descriptive and reflective notes. Descriptive notes indicate a description of the setting, participants, and activities (Creswell, 1998), while reflective notes refer to the researcher's personal reflections about what she has observed or perceived.

Member checking. After observation concluded, participants were provided an opportunity to confer with the researcher on the accuracy of data findings and provide additional comments. Creswell (2014) recommended utilizing member checking as a way to support the validity of the study. This additional dialogue allowed participants to have some power in determining whether the researcher had collected an accurate representation of their virtual classroom (Hays, 2004).

Multiple data points. Fitzpatrick et al. (2011) suggested observations can also be used to document reliability and validity when compared to self-reports. Course observations were compared with participant self-reports from the LoU interview. While observations did not influence a participant's LoU overall rating, they did serve as evidence in demonstrating validity of the participant's perspective and/or the researcher's understanding.

Reflective Documentation

Herr and Anderson (2015) stated, "the most powerful action research studies are those in which the researchers recount a spiraling change in their own and their participants' understandings" (p. 69). As this study primarily focuses on the change process, opportunities for reflection were used to document changes and understandings for both the participants and the researcher. Dewey (1933) referred to this critical self-examination as reflection-on-action. This practice also aligns with the action research cycle. Engaging in reflective practice results in professional growth (Dewey, 1933) and expertise (Stake, 1995).

Participant research reflection. Participants were asked to reflect on data findings shared by the researcher. The purpose of collecting participant reflections was to accurately represent their perspectives as well as provide additional evidence to confirm other findings. Consistent with the action research progress of involving participants in reviewing data, participant reflections were also used to collaboratively develop individualized action plans presented in Chapter 5.

Researcher research journal. As participants shared their reflections about the change process, it is consistent that the researcher document her own experience along with the participants. According to Ravitch and Riggan (2012), “a research journal provides a space to engage in ongoing critical questioning as it relates to all facets and stages of the research process” (p. 156). Herr and Anderson (2015) advocated action researchers use a research journal as a self-reflection tool throughout the action research process. In this way, the research journal serves a multi-purpose: (a) to document the researcher’s “role, actions, and decisions” (Herr & Anderson, 2015, p. 98) as a facilitator; (b) to reflect on the researcher’s own “professional practice or personal experience” (Herr & Anderson, 2015, p. 97); and (c) to record any new understandings. Stringer (2007) cited the use of journals among other instruments, such as field notes and tapes, as a way to maintain researcher “confirmability” (p. 59) and to demonstrate the trustworthiness of the research study.

Field notes. Qualitative researchers collecting and documenting observational data are said to be using field notes (Bogdan & Biklen, 2003) or rich, descriptive data (Creswell, 2014). Bogdan and Biklen (2003) further distinguished field notes into two separate categories: descriptive and reflective. Descriptive field notes contain detailed observations recorded by the researcher. These details may include descriptions of the participants, research setting, activities, or sketches and drawings. These descriptive notes include summarized or quoted participant comments and responses and observations of participant behavior and actions, including the researcher herself (Bogdan & Biklen, 2003; Creswell, 1998). Additional observational field notes may include screenshot images and audio and video files. Reflective field notes (Bogdan & Biklen, 2003), however, refer to subjective researcher observations, reflections, or notes about the process (Creswell, 1998). Often these notes are recorded separately from the descriptive field notes and address the self-reflective side of the researcher’s journey.

Reflective field notes may be used to document research decisions, procedures, or analysis development. Conversely, they may also be used to capture more personal reflections such as researcher opinions, beliefs, attitudes, preconceptions, prejudices, personal concerns, and ethical or professional dilemmas (Bogdan & Biklen, 2003). For this case study, the researcher used a combination of field notes and journaling to document her observations and reflective thinking. To document Cycle 4 observations, the researcher recorded both descriptive and reflective field notes.

Data Analysis

The research question driving this study was, “How can video adoption be described?” As has already been discussed, analyzing CBAM dimension instruments separately does not result in a holistic picture about how an individual is adopting an innovation. Instead, each dimension represents a portion of the whole. Methods of member checking, through direct and written conversation along with LoU inter-rater reliability, support reliability and validity. Additional coding for themes and direct observation serves to further support and triangulate findings.

The purpose of analyzing data in a qualitative, case study is to deepen the researcher’s understanding of a phenomenon being studied. According to Merriam (1998), data analysis is “the final product of … yet another interpretation by the researcher of others’ views filtered through his or her own” (p. 23). Data collected from this case study, including participant and researcher reflections, were analyzed during each action research cycle and holistically at the conclusion of Cycle 4. The research question was answered by using thick description to describe a holistic understanding of a participant’s concerns, behaviors, actions, and reflections about adopting and implementing video in their online courses. Each description is presented with parallel reflections by the researcher. Specific data analysis for each diagnostic instrument is presented in the following section.

SoCQ data analysis. The SoCQ is a quantitative questionnaire indicating the degree of concern for self, task, and others in relation to the innovation being studied. Data are analyzed electronically when using the SoCQ online assessment. In addition to the resulting SoC rating, the researcher recorded the degree of concern and any additional participant comments shared. The range of high and low concerns (Table 6) indicates possible common concern categories. These findings are substantiated by member checking participant reflective responses. George et al. (2006) outlined each stage, high and low scores, and corresponding concerns from Stage 0 to Stage 6.

Table 6

Interpreting High and Low Scores for Stages of Concern

Stage	Concerns
High Stage 0	Indicates a person who is not concerned about the innovation
Low Stage 0- High Other Stages	Suggests intense involvement with the innovation
Low Stages 0-3	Indicates an experienced user who is still actively concerned about the innovation
High Stage 1	Indicates a person who wants more information about the innovation
Low Stage 1	Indicates respondents who feel they already known enough about the innovation
High Stage 2	Suggest that respondents have intense personal concerns about the innovation and its consequences for them. Although these concerns reflect uneasiness regarding the innovation, they do not necessarily indicate resistance
Low Stage 2	Indicates that the person feels no person threat in relation to the innovation
High Stage 1- Low Stage 2	Suggests that the person needs more information about the innovation. These respondents generally are open to and interested in the innovation
Low Stage 1- High Stage 2	Indicates a person who has Self concerns. These individuals may be more negative toward an innovation and generally are not open to information about it
High Stage 3	Indicates concerns about logistics, time, and management
Low Stage 3	Suggests that the person has minimal to no concerns about managing use of the innovation
High Stage 4	Indicates concerns about the consequences of use of the innovation for students
Low Stage 4	Suggests that the person has minimal concerns about the effects of the innovation on students
High Stage 5	Suggests concerns about working with others in relation to use of the innovation. A person scoring high on Score 5 and low on all other stages is likely to be an administrator, coordinator, or team leader. Coordinating others is the priority
High Stage 5 With Some Combination of Stages 3, 4, and 6 Also High	Suggests concerns about a collaborative effort in relation to the other stages with high scores
High Stage 5- High Stage 1	Suggests a desire to learn from what others know and are doing rather than a concern for leading the collaboration
High Stage 6- Low Stage 1	Indicates a person who is not interested in learning more about the innovation. The person is likely to feel that he or she already knows all about the innovation and has plenty of ideas for improving the situation.

(continued)

Stage	Concerns
High Stage 6- High Stage 3- Low Stages 0-2	Indicates a person who has become frustrated with not having Management concerns resolved and has developed strongly held ideas about how the situation should be changed. The high Stage 6 score indicates that the person has ideas about how to change the innovation or situation from his or her point of view.
Stage 6 Tailing-Up for Nonusers	Suggests the person has strong ideas about how to do things differently. These ideas may be positive but are more likely to be negative toward the innovation.

LoU rating and analysis. In contrast to the SoC rating that describes a user's feelings and concerns towards an innovation, the LoU rating is descriptive of a user's current overall behavior towards the innovation. A single, overall rating is assigned to a user when two raters assign the same LoU rating. To ensure interrater reliability, two raters must agree on the same LoU. When raters are not in agreement, a third rater is used. This process continues until two raters agree on the same LoU rating (Loucks et al., 1975). When reviewing an interview, raters indicate marked decision points and evidentiary examples of demonstrated category behaviors on the rating sheet. Each of the seven categories are assigned a rating level, but only one overall LoU rating is assigned to the user. Raters are cautioned from making assumptions or averaging category levels when determining a user's overall rating (Hall et al., 2013). Rather, they emphasize a gestalt approach seeking to capture "how the interviewee is currently using the innovation or what s/he is doing at the present time in regard to future use" (Loucks et al., 1975, p. 43). In this case, the single LoU rating is more than a mere sum of LoU category assignments but, instead, speaks to the whole configuration of the individual and their use of the innovation.

LoU decision points. Layered within the LoU chart are seven decision points (A, B, C, D1, D2, E, F) that describe a timely action or behavior. Decision points are significant indicators for both the interviewer and raters (Hall & Hord, 2015).

Interviewers are trained to listen for cues that a decision point has occurred and then ask probing questions to support that event. Likewise, raters are also trained to identify and indicate when a decision point has occurred. Each decision point description (Table 7) clearly separates it from the other decision points and behavior profile levels.

Table 7

LoU of the Innovation with Decision Points

Levels of Use and Decision Points	Descriptions
LoU 0 Nonuse	State in which the user has little or no knowledge of the innovation, has no involvement with the innovation, and is doing nothing toward becoming involved.
Decision Point A	Takes action to learn more detailed information about the innovation.
LoU I Orientation	State in which the user has acquired or is acquiring information about the innovation and/or has explored or is exploring its value orientation and its demands upon the user and the user system.
Decision Point B	Makes a decision to use the innovation by establishing a time to begin.
LoU II Preparation	State in which the user is preparing for first use of the innovation.
Decision Point C	Begins first use of the innovation.
LoU III Mechanical Use	State in which the user focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.
Decision Point D-1	Establishes a routine pattern of use.
LoU IVA Routine	Use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.
Decision Point D-2	Changes use of the innovation in order to increase client outcomes, based on formal or informal evaluation.
LoU IVB Refinement	State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients
Decision Point E	Initiates changes in use of the innovation for the benefit of clients, based on input from and in coordination with colleagues.
LoU V Integration	State in which the user is combining own efforts to use the innovation with the related activities of colleagues to achieve a collective effect on clients within their common sphere of influence
Decision Point F	Begins exploring alternatives to or major modifications of the innovation presently in use.
LoU VI Renewal	State in which the user reevaluates the quality of use of the innovation, seeks major modifications or alternatives to present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self and the system

Loucks et al. (1975).

According to Hall (2013), "each of these describes a concrete action that if taken strongly suggests that the person is at the LoU" (p. 272). Using decision points to direct the branched focus interview and determine a behavior profile rating are two critical components of the LoU dimension.

IC data analysis. As already discussed, and because it has not yet been developed, an IC Map was not used in this study to evaluate how actual implementations compare to the ideal. Instead, observational data of present implementations were collected. Data were organized and analyzed by theme and type. Observed data were also compared to identified participant concerns and reported behaviors, along with expressed reflections.

Reflective documentation analysis. Participant reflective responses and researcher journals and field notes were analyzed. Reflective documentation was analyzed and coded for similar themes. It was also used to substantiate SoC and LoU ratings and observational findings. This information contributed to the overall understanding and allowed the researcher to capture participant thoughts and feelings in their own words.

Summary

The purpose of this study was to develop a holistic understanding of user concerns, behaviors, and actual implementation of video innovations in online courses during the change adoption process. This collaborative case study reflects a qualitative, constructivist approach guided by an iterative action research cycle. CBAM dimensions, along with reflective documentation, were used to collect data. The role of the researcher was an insider action researcher. The researcher served as the primary instrument for both data collection and analysis. Multiple perspectives were represented, including the researcher's. Data findings and understandings are described in Chapter 4. Recommendations for further study and the action plan, the final step in the action research cycle, is presented in Chapter 5.

Chapter 4: Results

This study explored a holistic view of individuals' concerns, behaviors, and implementation fidelity related to their adoption and implementation of video in online courses. CBAM was used to develop an overall profile and understanding. Secondary to CBAM, the Community of Inquiry (CoI) model was used to determine presence in online courses. Data presented in this chapter include both quantitative and qualitative results. The data findings were drawn from CBAM instruments, the Stages of Concerns Questionnaire (SoCQ) and Levels of Use (LoU) interview. Direct observation and thick description were also used. Quantitative data were used to determine stages and ratings and indicate examples of use. The quantitative data were then used to construct qualitative descriptions of users and their concerns, behaviors, and implementation fidelity. The resulting descriptions answer the overarching research and guiding questions.

The data are presented following the action research cycle selected for this study: Cycle 2, Stages of Concern (SoC); Cycle 3, Levels of Use (LoU); and Cycle 4, Innovation Configuration (IC). Consistent with action research, researcher and participant reflections were included in the data collection process and are presented in the results of the study. Following the summary of each cycle and instrument, the chapter concludes with a summarized holistic profile of research findings for each individual participant.

Research and Guiding Questions

This study had one overarching research question supported by three guiding questions. The purpose of the guiding questions was to align the methodology used and to develop a holistic understanding that more fully answered the overall research question.

RQ. How can adoption and implementation of video in online courses on a university campus be described?

GQ1: How can users' Stage of Concern adopting and implementing video in online courses be described?

GQ2: How can users' Level of Use adopting and implementing video in online courses be described?

GQ3: How can users' fidelity of creating a community of inquiry through adopting and implementing video in online courses be described?

Description of Participant Data

Cycle 2 participants were selected based on established criteria as full-time instructors who were assigned to teach online during the 2017-2018 academic year. Of the potential 82 participants, 35 responded and completed the Stages of Concern Questionnaire (SoCQ). This yielded a return rate of 42.6%. Using a suggested guide, with 80% confidence level (Nulty, 2008), an expected response rate of 25% should be required for 80 participants. Cycle 2 participants completed the SoCQ, which determined a user's concerns about the studied innovation and overall concerns profile.

Of the 35 participants who completed the SoCQ in Cycle 2, three participants were selected for Cycles 3 and 4 of this study. Cycle 3 participants were interviewed using the Levels of Use focused interview to determine their behavior related to the innovation and an overall LoU rating. Cycle 4 participants' courses were assessed for presence through video usage based on the Community of Inquiry (CoI) model. Each participant selected two online courses of their choosing for the researcher to review. Due to the research occurring at the researcher's institution, no participant demographics were collected. This includes identifying markers such as gender, race, age, rank, department, or teaching experience.

Description of Researcher

The researcher of this study is considered an insider action researcher. Research was conducted at her institution, and she was personally familiar with all of the participants. Due to her CBAM knowledge and expertise with the studied innovation, the researcher also served as the LoU interviewer and as LoU Rater 1. As an action researcher, the researcher collaborated with participants to review data and determine recommended action steps. The researcher's reflections were documented as part of the data collection and are included in later sections of this chapter.

The following section introduces each guiding question, associated methodology, and data findings. Data are organized by participant and subsequently followed by the researcher's reflections.

Cycle 2 Guiding Question 1: How can users' Stage of Concern adopting and implementing video in online courses be described?

The SoCQ is used to determine a user's concerns or feelings towards an innovation. The 35-question online questionnaire generates a concerns profile for each participant as well as a group profile. Thirty-five SoCQs were completed by participants resulting in 35 individual concerns profiles. An overall group profile of the 35 participants was also generated to represent the varying concerns related to the researched innovation. Additionally, a profile comparing the three selected participants and the overall group was also manually generated.

SoC profiles. According to George et al. (2013), a concerns profile provides "a great deal of insight, not only into the types of concern that are most intense and least intense, but also into the affective stance that the respondent is taking toward the innovation" (p. 37). SoC profiles are determined by totaling quantitative raw scores for each concern and then converting to a percentage. The percentages are used to analyze the data (George et al., 2013). The highest percentage scores can be described as the peak, first and second highest scores. The percentage attributed to a particular stage of concern indicates the intensity of that concern. The higher a percentage score, the more intense a concern is considered to be at that stage (George et al., 2013). Stages and intensities are used to form qualitative descriptions of users and their concerns. The following section describes SoC profiles for both the overall group and select individual participants.

SoC group profile. The SoC group profile reflected concerns across the seven stages of concerns. Range of scores and percentages are displayed in Table 8. Of the 35 participants, 80% of participants reflected a Stage 0, 1, or 2.

Table 8

SoC Group Profile Scores and Percentages

Stage of Concern	Number of SoCQ Participants	Percentage of SoCQ Participants
0	23	65.7%
1	5	14.3%
2	2	5.7%
3	1	2.9%
4	1	2.9%
5	3	8.6%
6	0	0.0%

Stages of concern are also characterized based on the level of intensity (see Figure 15), which are reflected as percentages.

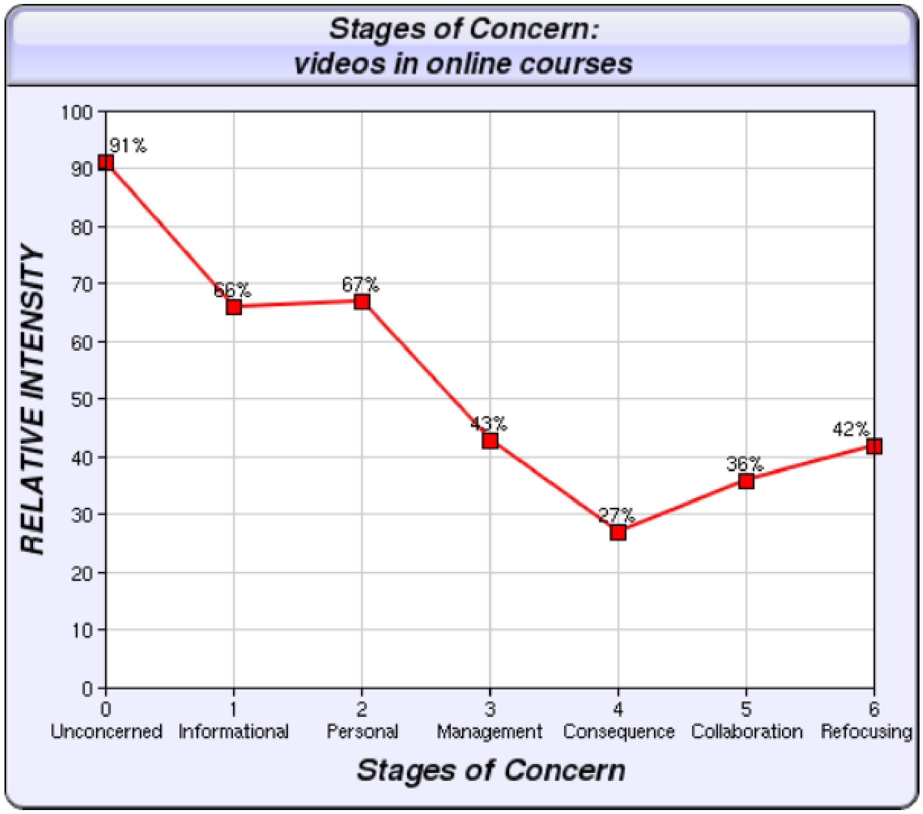


Figure 15. SoC Group Profile.

Data analysis of the group SoC profile revealed the highest intensity of concerns in Stage 0 Unconcerned (91%), Stage 2 Personal (67%) and Stage 1 Informational (66%). These concerns all reflect Self concerns (stages 0-2), in regard to how the innovation personally impacted the individual. Overall group data indicated little to no concern regarding the innovation studied and suggest that this group of faculty have other competing concerns compared to the innovation. "The higher the Stage 0 score, the more the respondent is indicating that there are a number of other initiatives, tasks and activities that are of concern to him or her" (George et al., 2013, p. 33). This is followed by strong Self concerns related to personal and informational stages. While research shows higher scores for Stages 1 and 2 often occur concurrently, the stages are distinct

(George et al., 2013). Higher scores in Stage 2 indicate concerns related to how the individual is personally impacted by the innovation, while higher scores in Stage 1 indicate the individual's concern for substantive information about the innovation structure and functionality (George et al., 2013). When Stage 2 is higher than the Stage 1 score, it is considered a "negative one-two split" (George et al., 2013, p. 40). The significance of the negative one-two split is described by George et al. (2013),

> When Stage 2 concerns override Stage 1 concerns, the concerns about an innovation's effect on personal position or job security usually are greater than the desire to learn more about the innovation. Experience indicates that when general, nonthreatening attempts are made to discuss an innovation with a person with this profile, the high Stage 2 concerns are intensified and the Stage 1 concerns are further reduced. An individual with this kind of profile probably will not be able to consider a proposed innovation objectively until his or her personal Stage 2 concerns are reduced. (pp. 40-41)

Low scores also provide information about participants' concerns towards an innovation. Stage 4 Consequence (27%) and Stage 5 Collaboration (36%) reflect lower scores indicating a limited concern about the effects of the innovation on students and minimal interest in collaboration. Overall, the SoC group profile reflected in the study is consistent with a typical nonuser SoCQ profile, where concerns are highest on Stages 0, 1, and 2 and lowest on Stages 4, 5, and 6 (George et al., 2013).

SoC Profile Participant 1. Data analysis of Participant 1 SoCQ (see Figure 16) revealed the highest concerns in Stage 5 Collaboration (98%), Stage 1 Information (96%), and Stage 6 Refocusing (94%).

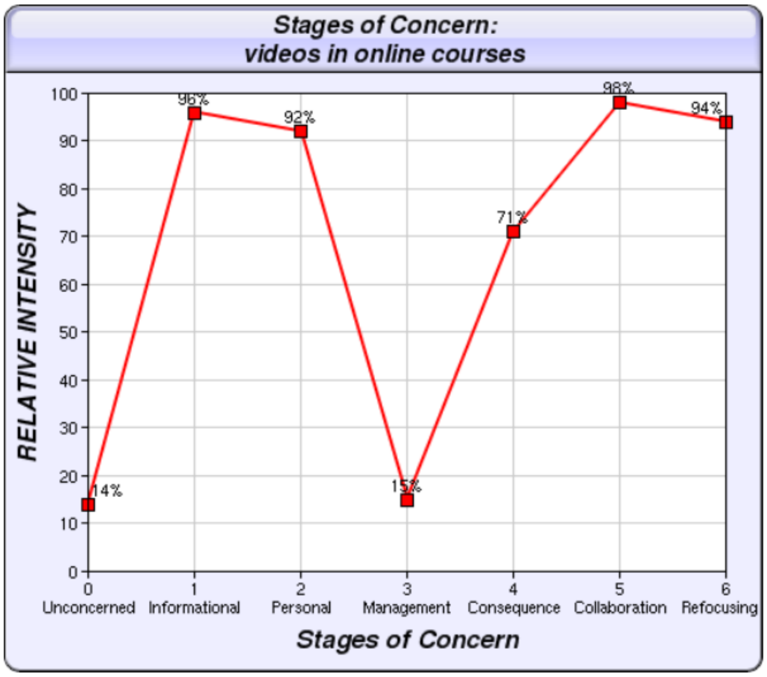


Figure 16. SoC Profile Participant 1.

The SoC Profile Participant 1 reflects a multiple peak user profile. This profile is often indicative of a team leader or administrator who is responsible for coordinating others (George et al., 2013). A profile reflecting high scores on both Stages 5 and 1 "suggests a desire to learn from what others know and are doing, rather than a concern for leading the collaboration" (George et al., 2013, p. 54); however, when Stage 4 (71%) is observed as less than Stage 5 (98%), it indicates a lower concern related to the direct effects of the innovation on students and a greater concern towards coordinating with others.

When compared to the SoC group profile (see Figure 17), Participant 1's relative intensity percentages vary significantly. This observation is illustrated the strongest at Stage 0 Unconcerned with a difference of 77%, and Stage 5 Collaboration with a difference of 62%.

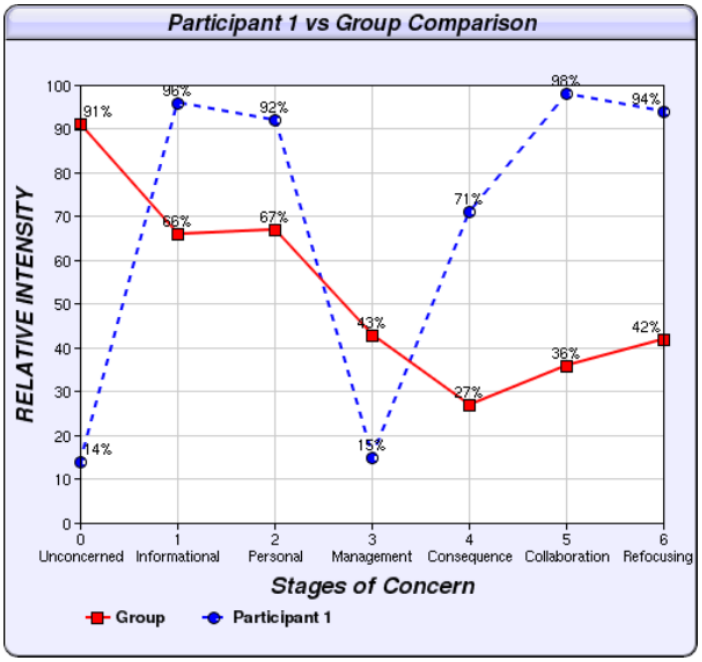


Figure 17. SoC Comparative Profiles Participant 1 vs. Group.

High intensity scores may indicate a multiple peak user, but extremely high total scores may also signal that the respondent did not carefully read or differentiate between questionnaire items (George et al., 2013). Further analysis of Participant 1's response distribution revealed an extreme response tendency (see Figure 18) with responses marked as either 1, "This statement is not at all true of me at this time" (George et al., 2013, p. 24) or 7, "This statement is very true of me at this time" (p. 24).

Stage 0	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
Q3: 1	Q6: 1	Q7: 1	Q4: 1	Q1: 7	Q5: 7	Q2: 7
Q12: 1	Q14: 7	Q13: 7	Q8: 1	Q11: 7	Q10: 7	Q9: 1
Q21: 1	Q15: 7	Q17: 7	Q16: 1	Q19: 1	Q18: 7	Q20: 7
Q23: 1	Q26: 7	Q28: 7	Q25: 1	Q24: 7	Q27: 7	Q22: 7
Q30: 1	Q35: 7	Q33: 7	Q34: 1	Q32: 7	Q29: 7	Q31: 7

Figure 18. Question/Responses Table Participant 1.

When used within a dataset, irregular responses should be excluded (George et al., 2013). For the purposes of this study, however, the researcher was focused on establishing a holistic perspective (George et al., 2013) and determined to retain data results.

SoC Profile Participant 2. Data analysis of Participant 2 SoCQ (see Figure 19) revealed the highest concerns in Stage 4 Consequence (96%), Stage 2 Information (90%), and Stage 5 Collaboration (84%). Participant 2 is also considered a multiple peak user with high concerns related to student impact and strong concerns related to information and collaboration.

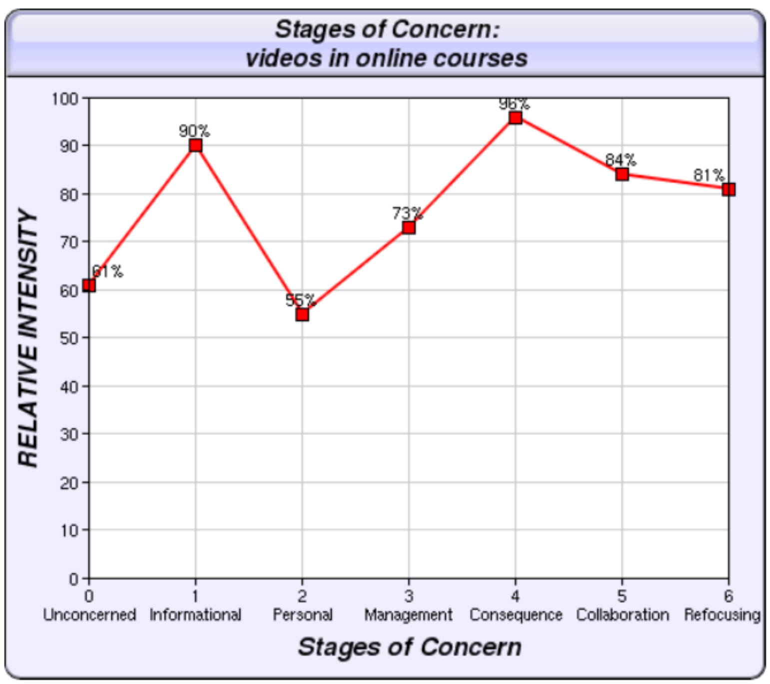


Figure 19. SoC Profile Participant 2.

A high Stage 4 score "indicates concerns about the consequences of use of the innovation for students" (George et al., 2013, p. 53). Although a high Stage 5 typically indicates an interest in collaboration, when paired together with a high Stage 1 as with

Participant 2 (84% and 90%), this suggests "a desire to learn from what others know and are doing, rather than a concern for leading collaboration" (George et al., 2013, p. 54).

When compared to the SoC group profile (see Figure 20), Participant 2's relative intensity percentages vary significantly in the higher-level impact stages. This observation is illustrated the strongest at Stage 4 Consequence with a difference of 69% and Stage 5 Collaboration with a difference of 48%.

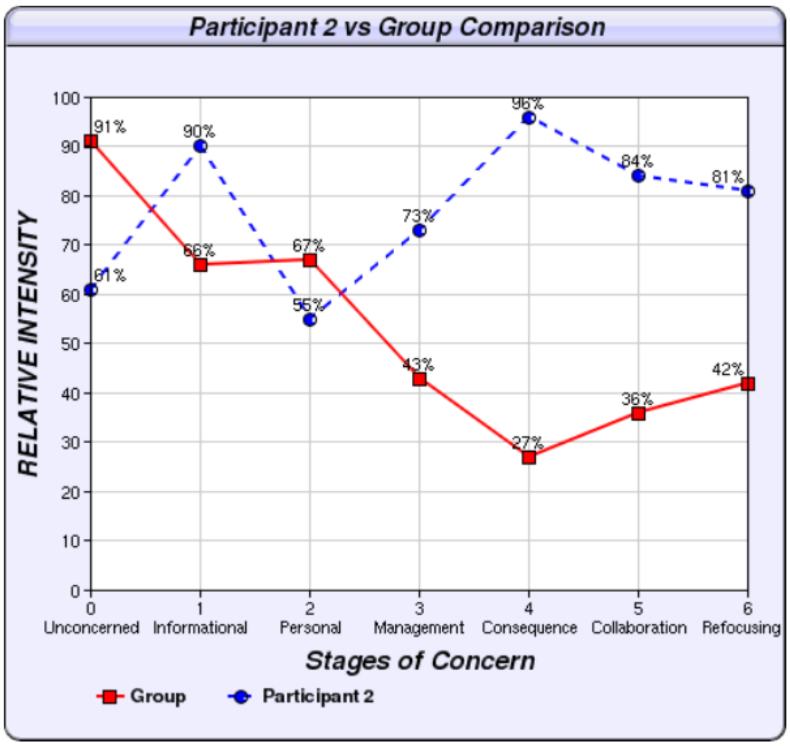


Figure 20. SoC Comparative Profiles Participant 2 vs. Group.

SoC Profile Participant 3. Data analysis of Participant 3 SoCQ (see Figure 21) revealed the highest concerns in Stage 0 Unconcerned (97%), Stage 2 Personal (70%), and Stage 1 Information (69%). The organization of highest concerns observed in Stages 0-2 and lowest concerns observed in Stages 4-6 suggests a nonuser SoC profile.

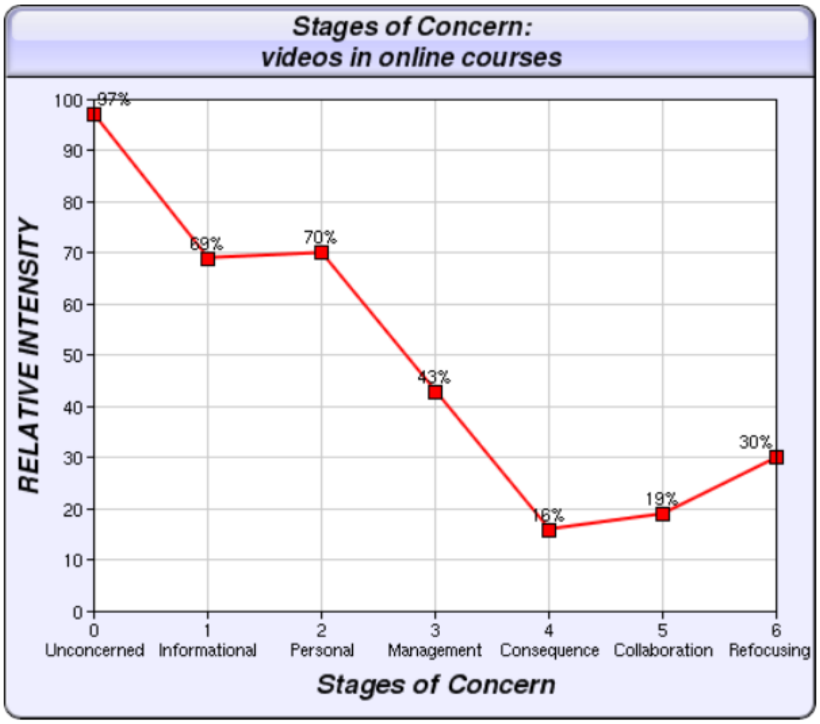


Figure 21. SoC Profile Participant 3.

Participant 3's profile reflects Stage 2 (70%) concerns higher than Stage 1 (69%). This nonuser profile is considered to be a "negative one-two split" (George et al., 2013, p. 40) and indicates "degrees of doubt and potential resistance to an innovation" (p. 40).

It should also be noted an 11% difference was observed between Stage 5 Collaboration (19%) and Stage 6 Refocusing (30%). When 7-10 percentile points are detected at Stage 6, this is known as "tailing up" (George et al., 2013, p. 42). The presence of tailing up in a nonuser profile provides insight about the respondent's attitude towards the innovation and "is a warning that the respondent might be resistant to the innovation" (George et al., 2013, p. 42).

When compared to the SoC group profile (see Figure 22), Participant 3's relative intensity percentages were observed as almost identical to the group data, with some difference noted between Stages 4-6. As a result, Participant 3 can be considered as representative of the majority of the group studied.

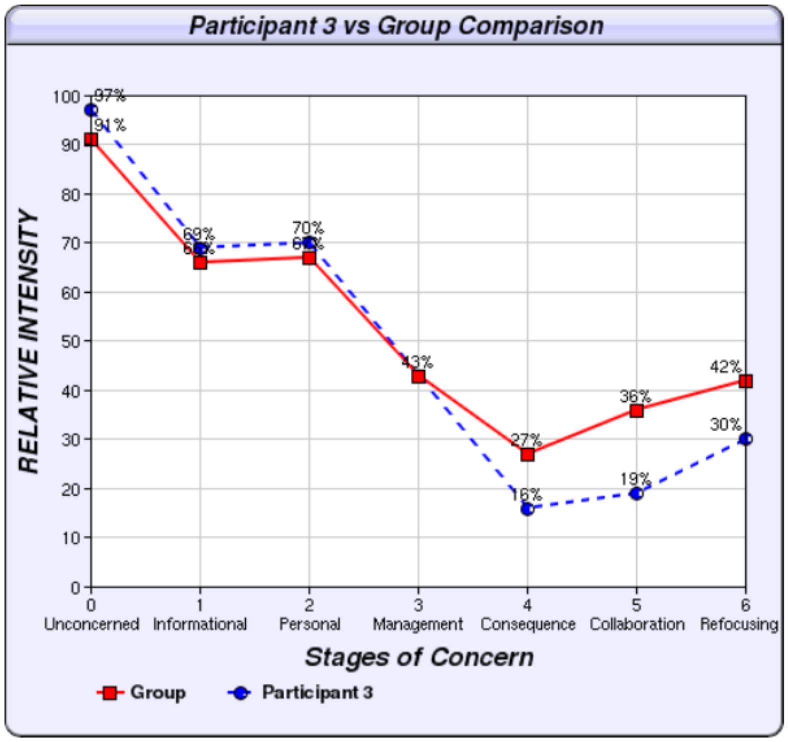


Figure 22. SoC Comparative Profiles Participant 3 vs. Group.

SoC profiles Participants 1-3 and group. The three participants and group profiles are depicted together as shown in Figure 23. Of the three participants selected for this study, one reflected the majority of the group studied, while two participants differed from the group. Participant 1 and Participant 2 showed high informational and collaboration concerns as well as strong refocusing concerns. Overall, the majority of participants indicated high or strong Self concerns, while Impact concerns were observed as the most disparate.

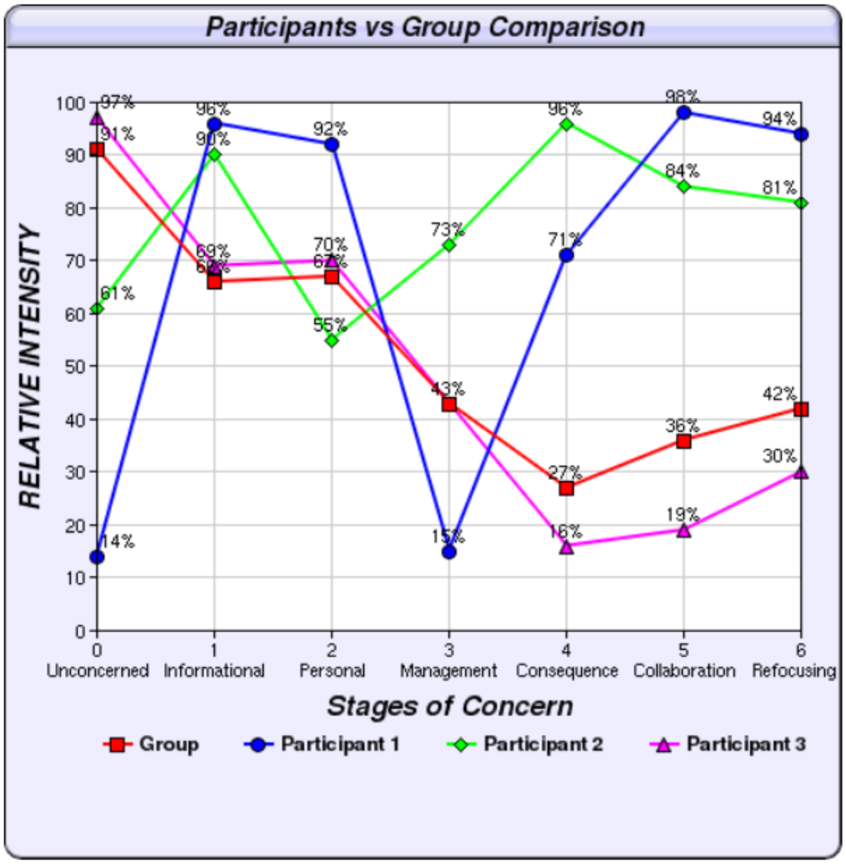


Figure 23. SoC Comparative Profiles Participants 1-3 vs. Group.

SoC Researcher Reflections

Following the action research cycle, researcher reflections about the group and individual SoC profiles are presented in this section. Based on my experience as an insider researcher, I was aware that instructors may not share the same concern surrounding video as I did; however, I did not anticipate that 80% would fall under the Self concerns. These data are both discouraging and informative; many of my current trainings are task-focused, how-to workshops. This type of workshop is inconsistent with the group concerns. Reflecting on the data, I found myself wondering how I could, as a change agent, move the majority of instructors who reported no concern for video to the next stage. Additionally, how could I attempt to resolve personal concerns that were out of my control? What additional information could I provide to instructors that would help them learn more about the benefits of video and consider adopting this innovation? It was affirming that Participant 1 and Participant 2's SoC profiles aligned well with what I know about them as individuals and their work responsibilities at the institution. One example relates to their shared interest in obtaining more information about how the innovation is being used by others. Upon reviewing Participant 1's profile more closely, some concerns were raised about the number of high peaks as this can indicate an invalid result or suggest that the user did not differentiate between the questions. Participant 2's SoC profile accurately aligns with my perspective of this individual as a student-centered instructor. I was surprised at how similar Participant 3's data mirrored the group profile, as it gave me a deeper understanding into a group where I am challenged the most as a change agent.

Cycle 2 profiled group and participant feelings and concerns identified through the SoCQ. The following section describes participant actions and behaviors towards the innovation.

Cycle 3 Guiding Question 2: How can users' Level of Use adopting and implementing video in online courses be described?

The LoU is used to determine a user's behaviors or actions towards an innovation. A focused branched interview is used to ask questions about a user's operational behavior over seven distinct categories. As previously discussed in Chapter 3, a single, overall LoU rating is assigned to a user when two trained raters assign the same LoU rating. To ensure interrater reliability, two raters must agree on the same LoU. When raters are not in agreement, a third rater is used. This process continues until two raters agree on the same LoU rating (Loucks et al., 1975). The LoU focused branch interview and rating process were used to determine participant overall LoU ratings.

LoU rating Participant 1. Participant 1 was assigned an overall LoU rating of V, Integration. This level is described as being "[in a] state in which the user is combining own efforts to use the innovation with the related activities of colleagues to achieve a collective effect on clients within their common sphere of influence" (Loucks et al., 1975, p. 191). Participant 1 described the improvement process and regular collaboration with colleagues for the purpose of improving the student learning experience. This action directly indicates that a Decision Point E has occurred. Statements retrieved from the LoU Focused Interview (Table 9) support this rating.

Table 9

Participant 1 LoU Interview V Statements

LoU Category	Participant 1 LoU Interview Statements
Knowledge	"Content videos need to be live. Operational videos to maneuver [navigate the course]. That is how I use pre-recorded videos. I do videos for everything. I do live sessions [for other instructors] and record them…. I record and walk through videos on how to use [other technologies and the LMS]."
Status Reporting	"The changes I've made because I have a partner… The changes I've made, when you can collaborate vs. 1/1….I've learned how to collaborate, and we can do larger groups. And they hear one consistent message."
Assessing	"When we first started, we did one off videos. Record and post. Then we would do a one off video session, one person would do session every now and then, then every week, now [this model]. That all has evolved from the qualitative data feedback from students that drove us to this [model]. "we are always adding value. We are taking our best people and using them to teach other people in a collaborative effort. Use a collaborative effort of video rather than a one-off. That is a better approach or model."
Performing	"When you collaborate you have to be scripted. Everyone has to follow the same script—content has to be the same in the shell, we have to come online at the same time, we are going to come online, we are going to have these roles."

LoU rating Participant 2. Participant 2 was assigned an overall LoU Rating of IVA, Routine. This level is defined as "use of the innovation is stabilized. Few, if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequence" (Hall et al., 2013, p. 5). To be considered at LoU IVA user, Loucks et al. (1975) stated, "use must be at a static equilibrium. Changes in use are rarely made and are of minor significance" (p. 183). Participant 2 described their video creation process: “Now, I have a concept map … I create a loose outline with key terms, and what I want to explain. It’s not pre-scripted. It’s more conversational” (Participant 2, personal communication, August 7, 2018). This indicates a Decision Point D-1, in which the user has established a routine pattern of use (Hall et al., 2013). Participant 2 also shared their routine knowledge of “short-and long-term requirements for use and how to use the innovation with minimum effort or stress” (Loucks et al., 1975, p. 207) when identifying the various video creation tools, video types, and strengths and weaknesses of the innovation. Statements retrieved from the LoU Focused Interview (Table 10) support this rating.

Table 10

Participant 2 LoU Interview IVA Statements

LoU Category	Participant 2 LoU Interview Statements
Knowledge	Strengths: screen capture, advantage when re-teaching, editing; Weaknesses: time to do it well, captioning
Acquiring	“I would love to know anything to make them better, but I’m not actively looking. I’m around it, but I’m not seeking it.”
Sharing	“No sharing other than ‘how do you use Camtasia?’”
Assessing	“Regular student check-ins, and end-of-semester surveys.” “Students don’t give specifics about changes, so I keep it as is.” “If I get questions in the Discussion Board, I might make a video, or if they are panicking and need to see my tone.”
Planning	“No major modifications or replacements planned.”
Status Reporting	“I’m a believer. It works. It takes time, but it’s worth it.”

When determining Participant 2’s overall LoU rating, the raters did not initially agree. Following LoU rater protocol, which ensures interrater reliability, the two raters reviewed the interview audio recording and rated individual statements for each LoU category. The raters shared these notes with one another and met virtually to discuss the ratings and attempt to come to an agreement. After consulting one another, the raters agreed with the overall rating of LoU IVA Routine. The key determinant in selecting a rating of IVA over IVB was the lack of evidence supporting that a Decision Point D-2, "Changes use of innovation based on formal or informal evaluation in order to increase client outcomes. They must be recent" (Loucks et al., 1975, pp. 8-9), had been made; however, both raters agreed Participant 2 showed evidence of moving towards LoU IVB. Statements retrieved from the LoU Focused Interview (Table 11) support this movement towards LoU IVB Refinement.

Table 11

Participant 2 LoU Interview IVB Statements

LoU Category	Participant 2 LoU Interview Statements
Planning	"I have a practice night scheduled for them to practice to use the software, and then create the videos and upload them [for new video assignment]" "I will be teaching the same course in the Fall, depending on how this semester's assignment goes. I plan to have some resources, or I may have to change how that is set up…I'm going to be building a lot of instructional and workshop type videos." "There are some there…they stink. I have mapped out the course, I have notes about what I'm going to do for different weeks, a week at a time. I have to start building."
Status Reporting	"I'm trying something new with non-traditional users [+/- 3 months]."
Performing	Add in additional modalities with video, like pairing with visuals or links

LoU rating Participant 3. Participant 3 was assigned an overall LoU rating of 0, Nonuse. This level is described as being "[in a] state in which the user has little or no knowledge of the innovation, has no involvement with the innovation, and is doing nothing toward becoming involved" (Hall et al. 2013, p. 5). According to the authors, it is expected to find nonusers among active users of an innovation within the organization (Hall et al., 2013). While Participant 3 is aware of the innovation, their behavior does not indicate current use or immediate plans for video use. Statements retrieved from the LoU Focused Interview (Table 12) support this rating.

Table 12

Participant 3 LoU Interview 0 Statements

LoU Category	Participant 3 LoU Interview Statements
Status Reporting	"Using videos- I'm not using them at all, I only have one class where I made a couple videos of myself. Maybe 6 years ago. Even when I used video, I didn't use them much. They were introductory, I didn't feel they were serving a purpose."
Acquiring Information	"I'm not looking for it, but I'm open."
Assessing	"I'm not using it—so it's not a strength. I'm not using it, so that is a weakness. Until this conversation, it seems a little silly—I would love videos, I'm not using videos. Where is the missing piece?"
Planning	"I don't have specific plans. You are going to see a link between people who have been resistant to online and they are directionless."

LoU Researcher Reflections

Following the action research cycle, researcher reflections about the overall LoU ratings are presented in this section.

Participant 1 described themselves as a regular video user who is immersed in video every day. They shared their own evolution using video both personally and as an instructor and claimed the adoption of video today is a lifestyle, not isolated to work only. Participant 1 acknowledged while they do not feel challenged by creating videos or virtually collaborating, it is a challenge for the colleagues with whom they work. This observation was extremely concerning to Participant 1, given their responsibility to provide professional development and establish a consistent student learning experience. Participant 1's current focus is to support colleagues in becoming just as immersed in video as they are.

Participant 2 was eager to talk about the various ways they incorporate video in their courses. Participant 2 shared they have personal experience being an online/ distance education student. This clearly informs their perspective and sensitivity to distance education students in their online classes. Participant 2 sees the strength of video as a way to be authentic with students and is willing to invest the time and effort that is required to implement video in their course. Their actions reflect an individual who is continually looking for new ways to engage and connect with students. Participant 2 commented about going back to rerecord outdated videos in need of improvement. While Participant 2 does not believe they are a video "superstar," they do see how much they have progressed since their first attempts at creating videos. Participant 2 shared original video attempts were pre-scripted and too monotonous. As a result of reflection, more recent versions are now more conversational and engaging.

Participant 3 was extremely candid and vulnerable during the interview portion of the study. One example came when they admitted prior to the questions asked during the LoU interview that they had not pedagogically assessed their online courses at the same level they had their seated courses. They went on to share that the LoU interview was challenging them to reflect on their use of video and online teaching in general.

Participant 3 admitted they had never been an online student and did not have a model or personal experience from which to draw. Furthermore, they did not choose to transition to teaching online and had strong reservations, even resistance, when originally tasked with doing so. According to Participant 3, no one had asked if they wanted to teach online or provided examples of what a well-done online course should look like, including the implementation of videos. Participant 3 even suggested resistance to online in general and resistance to using video were correlated. When overwhelmed with how much time investment was required, Participant 3 admitted they settled on aiming for average. Participant 3 felt that their online courses had improved over time but accepted that I as an evaluator may not share the same perspective. They suggested, however, that they would be willing to invest the time and effort required to incorporate videos but added only if video was perceived as needed and/or effective.

As discouraging as it was to hear an instructor disclose their honest reservations and goals towards teaching online and adopting video, it was very informative, especially since Participant 3 is representative of a significant portion of the instructors who responded as unconcerned about video. Participant 3's reflection provided some insight about what other instructors might be doing or thinking. I was aware of some instructors' resistance to online but had not truly understood what a powerful influence that was—even to those who have been teaching online for a significant amount of time. For example, after 5 years teaching online, Participant 3 is still wrestling with their identity in the online space. They shared as an instructor who thrives on feeling personally connected with students in a seated class, when teaching online, the distance seemed even more magnified. As Participant 3 (personal communication, May 31, 2018) alluded, "there is a missing gap." They acknowledged their personal preference for video tutorials and visual demonstrations but admitted not carrying it over when designing their online courses.

Cycle 3 presented participant actions and behaviors reported during the LoU interview. The following section describes the fidelity of use when looking at those behaviors operationally.

Cycle 4 IC- Guiding Question 3: How can users' fidelity of creating a community of inquiry through adopting and implementing video in online courses be described?

The innovation configuration reflects how closely a user's implementation of an innovation resembles the ideal. For the purposes of this study, the CoI was used as the ideal implementation, where social presence, content presence, and teaching presence are all observed through the use of video. Researcher observations were recorded as descriptive and reflective notes. Qualitative and quantitative data were both used to describe the selected online courses and document evidence of presence. Consistent to this study, quantitative data such as frequency and descriptive statistics were used to construct qualitative descriptions about users and their fidelity of use.

IC Participant 1 course descriptions. A video welcome message in Course A introduced students to the style of the course and schedule. The course menu was organized into four main categories: course activities, information and support, program information, and links to the weekly virtual meetings. The virtual meetings were used to organize weekly course content, and all required documents and links are contained within each weekly folder. Students had the option of attending a live virtual meeting or watching the recorded session posted online. There was no evidence of tutorials or help resources using the virtual meeting software. The virtual meetings depicted the instructor's image as the main speaker with the students along the edge of the screen. The instructor frequently used screenshare to visually navigate students through the Blackboard course, websites, PowerPoints, and Word documents. The instructor indicated students must have a webcam or built-in camera in order to participate in the course.

Course B featured a long navigation menu with links to resources, class materials, schedules, syllabus, assignments, discussion boards, assessments, and virtual meetings. Content was organized following the class meeting schedule, and associated materials were posted within each folder. Virtual meetings were recorded for students who were unable to attend the live meeting. The virtual meeting videos included instructor lecture, student presentations, and class discussions. Some of the recorded videos included student conversations prior to the course lecture starting. Discussion forums in the Blackboard course were fully text based.

The majority of the videos found in the two courses were created by the instructor (Table 13). Of the 14 videos in Course A, 12 were created by the instructor, while the remaining two videos were sourced by another third party. In Course B, the instructor was identified as the source for all videos found in the course.

Table 13

IC Participant 1 Video Sources

Video Source	Course A	Course B
Instructor Created	0	0
Student Created	0	0
Third-Party Created	2	0
Instructor & Student Created	12	11

Due to the preference for recorded virtual meetings, most videos included a design combination (Table 14) where the instructor would provide content lecture, instructional information, and how-to demonstrations within one recording. This observation was consistently found across both courses.

Table 14

IC Participant 1 Video Types

Video Type	Course A	Course B
Procedural/Informational	0	0
Content Specific	0	0
How-to/ Demonstration	2	0
Combination	12	11

In regard to video design, the instructor often started with a talking head and then toggled to a combination style of sharing their screen with a talking head captured in the corner (Table 15). This observation was consistent between the two courses.

Table 15

IC Participant 1 Video Designs

Video Design	Course A	Course B
Production Video	0	0
Talking Head Only	0	0
Screencast	2	0
Combination	12	11

IC Participant 1 CoI presence. Evidence of presence observed in the two courses is presented in Table 16. Given that all three CoI presence constructs may be observed together, evidence of co-occurring presence is documented. The regular use of virtual recorded meetings resulted in creating videos with all three CoI presence types found in one media. Social presence was indicated as students had an opportunity to engage with one another, establish a community, and dialogue about the subject matter. Content presence was indicated when the instructor presented lecture material and visual examples. Along with the physical live presence of the instructor, instructor presence was indicated when providing instructional guidance and feedback. This was observed as answering student questions and engaging in one-on-one conversations. The two remaining videos were third-party sourced videos used to support content presence.

Table 16

IC Participant 1 CoI Presence

CoI Presence	Course A	Course B
Social Presence	12	11
Content Presence	14	11
Teaching Presence	12	11

IC Participant 2 course descriptions. Course A opened to the announcements page. Announcements were sent by the instructor on a weekly basis and included general information and reminders, class observations, and customized student messages. The course menu was organized with a welcome page, syllabus, program and course policies, weekly content and materials, assignments, and communication tools used in the course. The starting pages introduced students to the curriculum and design background of the course. Students were presented with a course navigation video describing how to locate important items in the course. The About Instructor video offered students a chance to get to know the instructor in their offline capacity, along with necessary contact information. Course content was arranged in weekly folders including a detailed schedule of required activities and due dates. Weekly folders contained a video overview discussing the week's content focus and associated activities and assignments. Visual examples, written text, website links, articles, and how-to videos were also used to support learning. Students utilized the discussion board to post questions. A third-party audio/video tool was used to discuss content. Course assignments were packaged with written course instructions, attached grading rubrics, and instructional video describing the assignment.

Course B was arranged as weekly folders. The course menu was separated in several categories including welcome and syllabus, course policies, assignments, schedule, communication tools, and class resources. The start page presented students with a course navigation video, along with promoting video online office hours. A variety of videos were used in this course including documentaries, third-party produced video productions, and an abundance of screencast, how-to/tutorial videos. Many of these videos were used as scaffolded elements and examples, building to a larger, more comprehensive assignment.

In total, 37 videos were identified in Course A, and 81 videos were identified in Course B (Table 17). Videos were generally created by either the instructor or by a third-party source.

Table 17

IC Participant 2 Video Sources

Video Source	Course A	Course B
Instructor Created	13	31
Student Created	0	0
Third-Party Created	15	33
Instructor & Student Created	9	17

In Course A, 13 videos were created by the instructor, and 15 were created by a third-party source. An additional nine videos were the result of instructor and student posts to a third-party tool used to capture audio and video responses. In Course B, 31 videos were created by the instructor, and 33 were created by a third-party source. The remaining 17 videos were generated from the class discussion video tool. Due to the content type and visual nature of this course, a significant number of videos were observed. The majority of these videos were how-to/tutorial videos.

Overall, the majority of videos created used a screencast or combination design (Table 18). In most cases, the weekly overview video was a talking head design only. Both courses also utilized digitally recorded videos, or production videos, which contrasted the standard talking head or screen share design styles.

Table 18

IC Participant 2 Video Designs

Video Design	Course A	Course B
Production Video	4	26
Talking Head Only	13	23
Screencast	14	19
Combination	6	13

Weekly videos were typically observed as talking head types, while how-to videos included screencast and talking head. Most videos were used for how-to demonstrations, while others were used to present specific content information or examples (Table 19). The remaining video types represented videos used for discussion purposes.

Table 19

IC Participant 2 Video Types

Video Type	Course A	Course B
Procedural/Informational	3	16
Content Specific	12	25
How-to/ Demonstration	13	23
Discussion	9	17

IC Participant 2 CoI presence. Evidence of presence observed in the two courses is presented in Table 20. Social presence was observed in Course A and Course B through the use of the third-party tool. Content presence was well-represented in both

Course A and B. The instructor heavily relied on videos to communicate about the weekly subject matter and pointed students to video examples when introducing new concepts. In addition to the third-party tool, Instructor presence was noted most during weekly overview videos when the instructor provided feedback and addressed student progress.

Table 20

IC Participant 2 CoI Presence

CoI Presence	Course A	Course B
Social Presence	9	17
Content Presence	34	78
Teaching Presence	18	34

IC Participant 3 course descriptions. Course A opened to a welcome page which included an instructor photo and biography about their background, teaching history, and interests. The instructor used positive language to communicate their goal for the students' learning experience in their course. This intention was supported by the inclusion of a list of tips on how best to navigate the course, interact with course content, and communicate questions to the instructor. Course content was arranged in weekly folders which included audio recorded PowerPoints introducing the week's lesson and assigned reading. Additional resources included website links and visuals. Assessments included timed quizzes, written assignments, discussion forums, project, and exams. The instructor provided written feedback for homework and paper submissions, while quizzes were automatically graded by the system.

Similarly, Course B opened to a welcome page and directed students to review the posted syllabus and content. Instructor contact information was posted, but there was no evidence of an instructor photo. A syllabus folder included various informational items including the syllabus, office hours, class policies, grading rubrics, and paper guidelines. Content was organized in weekly folders which included instructor audio recorded PowerPoints, assigned chapter readings, and homework assignments.

The one video observed between the two courses was a 1-minute, instructor-created (Table 21) video. No evidence of student-created or third-party videos were observed.

Table 21

IC Participant 3 Video Sources

Video Source	Course A	Course B
Instructor Created	0	1
Student Created	0	0
Third-Party Created	0	0
Instructor & Student Created	0	0

The one video observed in Course B was identified as a talking head (Table 22), as it only featured the instructor and no additional visual component. No other video design styles were observed.

Table 22

IC Participant 3 Video Designs

Video Design	Course A	Course B
Production Video	0	0
Talking Head Only	0	1
Screencast	0	0
Combination	0	0

The singular video was considered a procedural/informational video type (Table 23), as it covered expectations for discussion board participation, and how to utilize the recorded audio PowerPoints.

Table 23

IC Participant 3 Video Types

Video Type	Course A	Course B
Procedural/Informational	0	1
Content Specific	0	0
How-to/Demonstration	0	0
Group	0	0

IC Participant 3 CoI presence. The video did not cover any content and therefore was documented as indicating teaching presence only (Table 24). There was no evidence of social or content presence found in these courses.

Table 24

IC Participant 3 CoI Presence

CoI Presence	Course A	Course B
Social Presence	0	0
Content Presence	0	0
Teaching Presence	0	1

IC Researcher Reflections

Following the action research cycle, researcher reflections about the fidelity of implementation are presented in this section.

Participant 1's adoption of video is prominent from the start of the course and is clearly embedded in the course design. Students are immediately presented with an expectation that video will be used as the main form of communication in the course. The synchronous video approach is a significant departure from the current teaching style established at the institution, though attendance is still optional. Although technology requirements were stated, there was no provision of video tutorials or support websites posted in either course. Video usage is primarily limited to the recorded 1-hour sessions.

While the live component is attractive, it may be difficult for students to navigate afterwards when looking for a particular segment covered in the recording. There may also be additional elements such as comprehensive assignments that could benefit from a tailored video explanation. Additionally, given that social and teaching presence are mainly limited to the virtual meetings, there may be other locations where videos could be inserted such as discussion boards and instructor feedback.

Participant 2's use of video in their courses demonstrates their familiarity and comfort level using video as an innovation. Videos are used to introduce and reinforce learning concepts as well as provide an avenue for making student and instructor connections. Participant 2 previously shared about abandoning scripts for a more authentic video. The videos observed in the two courses reflect Participant 2's style of storytelling linking subject matter and personal experience, interwoven with humor. The videos often include visual examples that support the instruction or assignment. It is clear that the instructor has spent a great deal of time creating or curating videos to support student learning. Students also have the opportunity to interact with their instructor and classmates through the use of virtual meeting software and a third-party discussion tool; however, in the more content-driven course (Course B), social and teaching presence are lacking. Steps could be taken to increase these two constructs for a more balanced course.

As a nonuser, Participant 3's course presented as expected with a lack of video adoption throughout the two courses. This presented a dichotomy for me personally, as the warm and personable instructor I know in real life was different from the instructor I perceived in these courses. The photo alone did not communicate personality; however, the occurrence of one video in Course B was a refreshing surprise and put a personal visual to the written text they had communicated on the start page. The video provided a means to communicate nonverbal markers such as eye contact and smiling. I found myself curious as to what led to the creation of this video and why there were not additional ones thereafter. It also verified the instructor does have the knowledge and skillset to create a video. The instructor also had posted all of their lectures as audio PowerPoints, which come across as a screencast but without the talking head. This design enables students to feel more connected listening to the instructor's voice and could easily be converted to a video design in the future. The presence of audio recorded PowerPoints did challenge my definition of video, as I did not mark these as indicating content presence. I initially considered the lack of a talking head as a qualifier but could not because a screencast is still considered a video without this element. Ultimately, I determined audio PowerPoints were not considered videos because of the file format (pptx) and affiliated software; however, I acknowledge that expanding this definition could be a bridge to adopting video. Finally, although there was a lack of instructor-created videos, I was somewhat surprised third-party videos were not utilized to further support content learning. One observation that stuck out was a Word document that featured a list of questions to discuss, with the heading, "we would discuss these if we were face-to-face." This indicates that there is still some difficulty making the transition from the physical classroom to the virtual one.

Holistic Participant Profiles

The purpose of the three guiding questions was to develop a holistic understanding of users' feelings, behaviors, and fidelity of use, in order to answer the overarching research question for this study: How can adoption and implementation of video in online courses on a university campus be described? The three CBAM constructs (SoC, LoU, and IC) were used to construct this knowledge and understanding. Previous sections in this chapter described data findings from each action research cycle and instrument used. The following section presents a holistic data summary of each participant.

Holistic profile Participant 1. Participant 1 reflects concerns about Impact rather than Task concerns. Their SoC profile indicates highest concerns in collaboration, with an emphasis on acquiring information about what others are doing. Participant 1 also exhibits strong refocusing concerns suggesting that they have ideas about how to do things differently. Participant 1's high Stage 5 concerns and lower Stage 4 concerns accurately depict an individual who holds administrative responsibility, where efforts in coordinating the use of the innovation with colleagues are prioritized over concerns regarding the direct effects of the innovation on students. Participant 1 is considered a user of the innovation and was assigned an overall LoU rating of V, Integration. This rating is supported by actions and behaviors reported in the LoU interview, such as their effort to train and collaborate with colleagues in order to establish consistency within the department using the innovation. Evidence of presence was identified through the use of virtual meetings and recorded screencasts. When delivering content, Participant 1 prefers live video interaction rather than recorded videos. Due to the nature of virtual meetings, all three presence components are observed together; however, there is not additional evidence of presence found in their courses. Participant 1 can be described as an individual who has adopted and implemented the innovation. Overall, their focus is on training others in order to standardize the use of the innovation within the department.

Holistic profile Participant 2. Participant 2 reflects concerns about Impact, rather than Self or Task concerns. Their SoC profile indicates highest concerns about consequence and the impact of the innovation on students. Participant 2 also exhibits strong informational and collaboration concerns. These concerns center on student learning: how the innovation impacts student learning and acquiring information about how the innovation is being used by others. Participant 2 is considered a user of the innovation and was assigned an overall LoU rating of LoU IVA, Routine. This rating is supported by actions and behaviors reported in the LoU interview that demonstrate an established routine using the innovation with minimum effort and minimal problems. While Participant 2's behavior indicates movement towards IVB Refinement, such as a recent change with an assignment incorporating video and experimenting to maximize client outcomes, they are not actively seeking to acquire new information about the innovation or assessing the use of the innovation for the purpose of improving client outcomes (Loucks et al., 1975). There is also strong evidence of videos used in their courses. Content and teaching presence was identified throughout the course including the use of screencast videos, how-to demonstration videos, and content-specific videos. Participant 2 is both creator and curator of videos, suggesting their familiarity and comfort level with the innovation. While Participant 2 excels in using video to establish content presence, a lack of social presence through the use of video was observed. Participant 2 can be described as an individual who has adopted and implemented the innovation. Overall their focus is on student learning outcomes, how the innovation impacts those outcomes, and what modifications or changes need to be made to improve the student learning experience.

Holistic profile Participant 3. Participant 3 reflects concerns about Self, rather than Task or Impact concerns. Their SoC profile indicates they are not at all concerned with the innovation and are considered a nonuser. Although Participant 3 demonstrates some informational concerns related to learning more about the innovation, data suggest that the user may demonstrate significant resistance towards adopting the innovation. Participant 3 was also assigned the overall LoU rating of Nonuser. Interview statements about behaviorally not using the innovation support this finding. Additional observation of their online courses revealed a lack of video use altogether. Consequently, presence was not exhibited through the use of video in these courses. This further supports the findings of Participant 3 as a nonuser. Participant 3 can be considered an individual who has not adopted or implemented the innovation. Other concerns are prioritized over the concern about adopting video, and no decision or action has been made towards adopting the innovation.

At the conclusion of Cycles 2-4, data were analyzed and summarized. Consistent with the action research process, findings were shared with participants. Their reflections to the data are presented in the following section. Action steps in response to data findings and researcher and participant reflections are discussed in Chapter 5.

Participant Reflections

Participant 1 reflections. Participant 1 confirmed their major focus was providing instructor training and professional development in order to establish fidelity of program instruction. This concern was substantiated when Participant 1 described frustrations of having to train users on the video tool via the same video tool. Without establishing a concrete understanding of how to navigate the video tool, no additional training can occur. This presents a particular challenge when onboarding online instructors who live at a distance from the main campus. Participant 1 specifically asked for help from the researcher with this process. When discussing how the result of implementing instruction fidelity impacted students, Participant 1 acknowledged students also needed additional training and resources. As a result, we discussed ways to integrate guided practice and scaffolding into current practices with video already in use.

Participant 2 reflections. Participant 2 agreed with the assessment of them being a student-centered instructor and shared about their practice of soliciting feedback from students to improve the course and learning experience. Participant 2 was also agreeable to the idea of learning more about how other instructors were using video in their respective courses, so Participant 2 could incorporate those ideas into their own course(s). When discussing the impact of feedback and praise on users similar to Participant 2, they shared their desire for an improved evaluation system that would benefit hardworking instructors and adequately demonstrate how much they invest in designing robust, quality online courses. They went on to explain that the current end-of-semester student survey does not effectively differentiate for courses taught online. "The Director [researcher] sees the effort, but supervisors don't" (Participant 2, personal communication, August 7, 2018).

Participant 3 reflections. Participant 3 expressed their gratitude for participating in the study and explained this process had made them reflect on online teaching as a whole. Participant 3 shared their interest in online had declined, and this process had reinvigorated their interest in what could be possible in online courses. When the researcher explained their SoC concerns profile, Unconcerned, meant that the user was concerned with other competing innovations rather than a dismissal of the studied innovation, Participant 3 responded positively. They stated they felt their concerns had been validated rather than dismissed. As a result, they did not feel defensive and were open to the researcher's suggestions. Participant 3 expressed they desired to make personal connections with online students, but they did not have a model of what that looked like in application. They also were surprised to learn about how the one video found in Course B contrasted with the absence of video in Course A. In response to the data provided, along with personal reflection, Participant 3 (personal communication, August 16, 2018) determined to begin using video: “I’m excited! You took someone who wasn’t a believer in online, to someone who is interested and open…. You’ve made it [teaching online] meaningful again!”

Summary

Data were presented based on the action research cycle, followed by researcher reflections, and holistic summary of participants. Overall, participant data findings were not compared against one another, as change is considered personal to the individual. As a result, recommended interventions to address data findings were also personalized to the individual. Based on data findings and collaboration between the researcher and participants, Chapter 5 presents recommended interventions in the form of personalized action plans. Additional researcher recommendations are also presented.

Chapter 5: Conclusion, Recommendations, and Action Plans

Overview

The delivery mechanism of online learning for higher education is not a fad. Research has shown the significant growth in online learning (Allen & Seaman, 2014) and how higher education institutions have had to change to meet these growing needs. Educating students at a distance dates back to correspondence courses in the 1800s. As technology and multimedia have advanced, the delivery systems to educate students have improved as well. Federal guidelines (Electronic Code of Federal Regulations, 2018) now define the differences between correspondence and distance education courses, especially in the area of presence and interaction. Research has shown both the importance of presence in an online course and how video can be used to address this need (Borup et al. 2011; Borup et al., 2014). Change agents acutely aware of the need to address presence in online courses may advocate for the use of video, only to find intermittent adoption and implementation at the organization. When modern day online courses still resemble correspondence courses, change agents are challenged to understand why an innovation is not being adopted. Is it fear, resistance, competing concerns? Change agents must understand the individual user—their concerns, behaviors, and current practice—in order to recommend appropriate interventions that support innovation adoption and lead to implementation across the organization. In summary, change agents must understand an individual's change process in order to facilitate change and improve student learning.

Using CBAM, this case study examined users' feelings, behaviors, and implementation fidelity of video to develop a holistic understanding of their adoption and implementation of the selected innovation. The CBAM constructs, Stages of Concern

(SoC), Levels of Use (LoU) and Innovation Configuration (IC), were used to answer the overarching research and guiding questions.

RQ. How can adoption and implementation of video in online courses on a university campus be described?

GQ1: How can users' Stage of Concern adopting and implementing video in online courses be described?

GQ2: How can users' Level of Use adopting and implementing video in online courses be described?

GQ3: How can users' fidelity of creating a community of inquiry through adopting and implementing video in online courses be described?

This chapter discusses Cycle 5 of the case study, including recommendations for participants, the researcher, and other change agents. The first section addresses limitations of the study. The second section presents a review of the action research process and recommended action plans for each participant and the researcher. The third section outlines recommendations for change agents and future study before the chapter summary.

Limitations of the Study

While the researcher previously addressed several expected delimitations in Chapter 3, expected delimitations and limitations are discussed in this section. Delimitations of the study included (a) the boundedness of the case study, (b) participant selection and sample size, (c) insider research, and (d) researcher as LoU interviewer and rater. The case study was bound to the researcher's institution, and participant selection was limited to full-time instructors teaching online during the 2017-2018 academic year. The researcher also limited the participant sample size (N=3) and the number of iterative action research cycles (5). As a result of the boundedness of the study, generalizability of results may not be applied to other universities or instructors.

Another expected delimitation was the researcher's decision to investigate her own institution—one in which she has a long-standing relationship as an insider. While insider research has some advantages, it is possible that some instructors may have volunteered to participate in the study as a sign of support towards the researcher. As a result, the participant pool may have been skewed; however, the researcher believes that there is still a deeper understanding to be gained from those whom she may have an established relationship.

Finally, the researcher also determined to conduct the LoU interviews herself. While this decision was based on her insider researcher status and familiarity with both the instructors and studied innovation, she did so with limited experience. A more experienced interviewer may have been able to probe for further clarity. According to Fitzpatrick et al. (2011), a common mistake is for the interviewer to talk too much or add their own interpretation. Given the researcher's familiarity with participants, she may have drawn conclusions based on prior knowledge, rather than asking specific probing questions during the interview. The second rater confirmed this observation by noting that the ability to ask appropriate probing questions comes with time and experience (K. Uchiyama, personal communication, August 14, 2018). Probing questions such as "How recently did you make that change?" or "Have you been doing that for a while?" should be asked in future LoU Focused Interviews.

In addition to expected delimitations, a study limitation was also noted in conjunction with the methodology. The researcher chose to utilize CBAM which resulted in self-reported results for all three instruments: Stages of Concerns

Questionnaire (SoCQ), LoU interview, and IC.

Participants self-reported their concerns by answering Likert-style questions about the innovation. Raw scores reflecting a poor Q-sort signal the possibility of invalid data. This was evidenced in Participant 1's concerns profile. When used in a group data set, these data should be excluded (George et al., 2013); however, due to the individualistic and holistic approach of this study, these data were retained. Participants also self-reported data during the LoU Focused Interview and were allowed to self-select which courses the researcher observed during Cycle 4. Participants may have withheld statements during the interview that were unflattering about themselves or revealed vulnerabilities or weaknesses. They may also have made certain statements in an attempt to please the researcher or be helpful towards her research. Likewise, participants may have selected courses that presented their best selves, rather than ones that revealed weaknesses, lack of video use, or poor design. While data collection for this case study strongly relied on participant self-reports, the researcher believes that when triangulated, the data are strengthened.

The delimitations and limitation of this case study may have impacted data results. Future studies should consider participant size, the impact of insider research, the researcher as the LoU interviewer and rater, and validating participant self-reported data.

Summary of Action Research

Action research was selected for the study to contribute greater understanding (Maruyama, 1996) and to co-generate knowledge between the participants and researcher (Coghlan et al., 2016). In combination with CBAM diagnostic instruments, five iterative cycles of plan, act, observe, and reflect were used in this study. The first action cycle focused on development of the case study, including theoretical and conceptual frameworks, literature review, methodology and instruments, and action research process. The second action cycle aimed at identifying instructors' concerns and feelings about the innovation, video in online courses. The third action cycle aimed at identifying users' actions and behaviors towards the innovation. The fourth action cycle determined fidelity of implementation using the Community of Inquiry model. The fifth, and final action cycle of this study, was the development of a collaborative action plan to facilitate participants' movement across the Implementation Bridge or sustain implementation.

The following section presents individualized action plans for each participant and the researcher. Subsequent sections address recommendations and implications for future study.

Interventions and Action Plans

According to Hall and Hord (2015), change agents must plan specific actions to facilitate moving users across the metaphorical Implementation Bridge discussed in Chapter 1. Hall and Hord (2015) defined an intervention as, "an action or event that is planned or unplanned and that influences individuals (either positively or negatively) in the process of change" (p. 27). They further advocated change facilitators can be the source of these innovation-related interventions and that these interventions are "the key to the success of the change process" (p. 14). As a part of the change process, change agents use interventions to help decrease resistance and facilitate and sustain the implementation of an innovation (Hall & Hord, 2015).

In consultation with participants, the researcher developed a suggested action plan and personalized interventions for each participant and herself. Based on participant holistic profiles and reflections discussed in Chapter 4, interventions were selected to either facilitate movement or sustain innovation adoption and implementation. Action plans include stated objectives, specific action steps, person(s) responsible for carrying out the action steps, identified resources, potential barriers, and how the respective action steps will be assessed.

Action Plan Participant 1

As previously discussed, Participant 1 was concerned about collaboration and learning in-depth information about how others are using the innovation. They were assigned an overall LoU rating of LoU-V, Integration, and evidence of implementation fidelity was found in their courses through the regular use of virtual conferences. Interventions for Participant 1 (Table 25) were selected to encourage continued collaboration and current practice using the innovation. Based on discussion with Participant 1, additional action steps include recommendations to improve client (student) outcomes.

Table 25

Action Plan-Participant 1

Objectives:
1. Facilitate arousal and sustaining Impact concerns (Stages 4 Consequence and Stage 5 Collaboration)
2. Support sustained LoU V Integration, collaborative efforts for client benefit
3. Assist Participant 1 in moving closer to the ideal variation of establishing a CoI through the use of video

Action Step(s)	Person(s) Responsible	Identified Resources	Potential Barriers	Evaluation
1. Provide video tool training first for new instructors during onboarding process.	Participant 1 and Researcher	On-demand tutorials;	Current onboarding process	Survey new instructors
2. Create a technology training manual or online resource space for instructors	Participant 1 and Researcher	Existing documentation	Time	Survey users
3. Re-design accessibility of training resources for students within online courses.	Participant 1	Support page; On-demand tutorials	Time, competing priorities	Program/course survey
4. Participate in professional development opportunities regarding video use and online learning	Participant 1 and Researcher	On-campus professional development events; conferences	Professional development funding	Annual self-evaluation

Action Steps 1 and 2: Instructor training. According to Hord, Rutherford, Huling-Austin, and Hall (2014), Stage 5 interventions include, "us[ing] these persons to provide technical assistance to others who need assistance" (p. 45). Hall and Hord (2015) go on to caution change agents not to ignore collaborative efforts and assume that Stage 5 users can operate without assistance. Therefore, the purpose of Action Steps 1 and 2 is to support Participant 1's need to train colleagues, so they can focus more on collaborative efforts.

In the data reflection interview, Participant 1 stated they believed learning the video collaboration tool had surpassed the learning management system in the sequence of the instructor onboarding process. As a result, Participant 1 reported it was difficult to train instructors on other innovations without them learning this critical tool first. In order to support Participant 1 in their efforts to provide technical assistance and opportunities to develop users' collaborative skills, the researcher and participant collaboratively identified where the change agent could provide assistance. Action Step 1 is to refer incoming instructors to register for video collaboration tool training prior to completing the LMS and department training. This action step's purpose is to introduce users to the video collaboration tool upfront and prepare them to use the tool prior to additional professional development. Subsequently, more concentrated training would then be offered by Participant 1 through the video collaboration tool.

In addition to incorporating video collaboration tool training into the onboarding process, Action Step 2 addresses providing other training resources. Providing these technology resources will allow Participant 1 to focus on collaborative efforts rather than on training and troubleshooting. By partnering together, Participant 1 and the researcher model collaboration and support movement of colleagues towards increased video adoption and implementation.

Action Step 3: Student training. Action Step 3 attempts to improve elements of presence in Participant 1's online courses. Course observations in Cycle 4 revealed video collaboration was heavily integrated into weekly course instruction, but training materials about how to use the tool were not readily visible. Subsequent discussion with Participant 1 revealed these instructions were located deep within the syllabus. As a result, the researcher and Participant 1 agreed these resources needed to be elevated to a more prominent location in the course. The provision of these training resources will support content presence, in order to prevent the tool from becoming a barrier to learning. Additionally, providing students these training resources will help increase social presence by encouraging the use of the video tool for collaborative purposes.

Action Step 4: Professional development. Users with Stage 5 Collaboration concerns should be encouraged to pursue collaborative opportunities with others, both inside and outside of the institution (Hall & Hord, 2015). This recommendation also applies to users with LoU V Integration ratings, where "change facilitators should do all that they can to nurture and facilitate its [professional culture] development and continuation" (Hall & Hord, 2015, p. 111). Consequently, the change agent recommended Participant 1 participate in professional development opportunities as appropriate on campus as well as in their discipline-related field. This practice will also support Participant 1's informational concerns about learning what others are doing in regard to the innovation and how it is being used for collaborative purposes. These actions celebrate Participant 1's collaborative efforts thus far and aim to sustain those behaviors by allowing them to "work with others who have similar ideas" (Hall & Hord, 2015, p. 330).

Action Plan Participant 2

As previously discussed, Participant 2 was concerned about Consequence, or student outcomes, as well as learning in-depth information about how others are using the innovation. They were assigned an overall LoU rating of LoU-IVA, Routine, with movement towards LoU IVB, Refinement. Participant 2 demonstrated significant implementation fidelity, as demonstrated by their use of video to address all three presence components of the CoI. Interventions for Participant 2 (Table 26) were selected to celebrate efforts, encourage sustained practice, and facilitate movement towards collaborative concerns and refinement and/or integrated behaviors using the innovation. Based on discussion with Participant 2, additional action steps included recommendations to collect information, assess, and change use of innovation in order to increase impact on students.

Table 26

Action Plan-Participant 2

Objectives: 1. Facilitate arousal and sustaining Impact concerns (Stages 4 Consequence and Stage 5 Collaboration) 2. Support sustained LoU IVA Routine and movement to LoU IVB Refinement 3. Support sustained CoI fidelity of use				
Action Step(s)	Person(s) Responsible	Identified Resources	Potential Barriers	Evaluation
1. Provide access to exemplar online courses to observe using video at an *a* ideal variation	Participant 2 and Researcher	Online instructors	Locating example courses	Follow-up discussion
2. Provide complex information about the innovation	Participant 2 and Researcher	CETL, on-demand tutorials	Scheduling	Follow-up discussion
3. Share skills with others	Participant 2	CETL, professional development opportunities	Time, funding	Follow-up discussion, workshop survey
4. Assess innovation and student impact	Participant 2	Survey tool	Time	Student survey

Action Step 1: Examples. According to Hord et al. (2014), users with Consequence concerns should be provided "opportunities to visit other settings where the innovation is in use" (p 45). Likewise, Participant 2 (personal communication, May 22, 2018) also indicated high informational concerns regarding the innovation and suggested in their LoU interview that "I would love to know anything to make [videos] better." Action Step 1 recommends that the researcher identify several exemplar online courses and provide access for Participant 2 to observe these courses. This will allow Participant 2 to virtually visit settings where the innovation is being utilized and may serve to inspire ideas for improvement and refinement.

Action Step 2: Complex information. While Action Step 1 addresses seeing the innovation in action at an ideal variation, Action Step 2 presents Participant 2 with new, more complex information about the innovation (Hord et al., 2014). Based on statements made during the LoU interview, Action Step 2 will be to provide Participant 2 with complex information about the advanced features for the video conferencing tool and video storage tool used at the institution. Hall and Hord (2015) also recommended change agents share relevant research, such as journal articles and books, to support these users' efforts in relation to their concerns towards the innovation.

Action Step 3: Sharing skills. Participant 2 can be described as someone who has "mastered the innovation and its use" (Hall & Hord, 2015, p. 110), and their use is considered stabilized. As a way to sustain use, Hall and Hord (2015) recommended identifying opportunities for these users to share their skills with others. This may occur in the form of users presenting at workshops and conferences, supporting users with Task concerns by providing how-to assistance, or collaborating with colleagues who share similar Impact concerns. Action Step 3 recommends that the researcher and Participant 2 identify opportunities for Participant 2 to share with colleagues both internal and external to the institution.

Action Step 4: Assessing student impact. Data findings indicated Participant 2 had an overall LoU rating of LoU IVA, Routine, with movement towards LoU IVB, Refinement. Movement to an LoU IVB level is indicated by evidence of a Decision Point D2, "changes use of the innovation based on formal or informal evaluation in order to increase client outcomes" (Loucks et al., 1975, p. 8). Action Step 4 recommends that Participant 2 assess use of the innovation as it relates to student outcomes. One such example where assessment could occur is the recent video assignment described during the LoU interview. As part of the assessment process, Participant 2 may also begin seeking information and materials specifically related to student outcomes. This action step aligns with Participant 2's Consequence concerns and the impact to students and parallels with Action Steps 1 and 2.

Action Plan Participant 3

As previously discussed, Participant 3 was unconcerned about video in online courses but was open to learning more about the innovation. These concerns reflected Self concerns. Participant 3 was also assigned an overall LoU rating of LoU 0, Nonuse. CoI implementation fidelity was not present in their online courses due to the lack of use. Interventions for Participant 3 (Table 27) were selected to encourage movement towards informational and personal concerns, and Decision Point A, the decision to adopt the innovation. Based on discussion with Participant 3, additional action steps include recommendations to increase presence, through the use of video, in their online courses.

Table 27

Action Plan Participant 3

Objectives:
1. Facilitate Participant 3 moving from Stage 0 Unconcerned to Stages 1-2 Informational and Personal
2. Facilitate Participant 3 to move from LoU 0 Nonuse to Decision Point A.
3. Assist Participant 3 in moving closer to the ideal variation of establishing a CoI through the use of video

Action Step(s)	Person(s) Responsible	Identified Resources	Potential Barriers	Evaluation
1. Provide access to exemplar online courses to observe using video at an *a* ideal variation	Participant 3 and Researcher	Participants 1-2	Locating example courses that don't overwhelm Participant 3	Follow up discussion with participant
2. Provide information about video, based on Action Step 1	Participant and Researcher	CETL, existing tutorials, CoI model	Time to review materials, too much material can overwhelm	Follow up discussion with participant
3. Use video collaboration tool to set-up one-on-one meetings between instructor and online students	Participant 3 and Researcher	Video collaboration tool; on-demand tutorials	Learning new video tool; time; participant resistance	Student feedback

Action Step 1: Examples. In the LoU interview, Participant 3 revealed they did not have a good online model or experience to draw from for their own courses. They added reflective statements like, "what could videos in online look like?" or "How could they be utilized?" This desire for information was supported by their SoC results: informational and personal. As a result of Participant 3 wanting to learn more information about videos in online courses, Action Step 1 is to identify several example online courses to observe. The courses will be selected based on their overall design and types and use of videos. This aligns with the recommended intervention for Stage 0 users to talk with others who are using the innovation (Hall & Hord, 2015) and to "share enough information to arouse interest, but not so much that it overwhelms" (Hord et al., 2014, p. 44).

Action Step 2: Information. According to Hall and Hord (2015), "the first objective is to stimulate people to actively seek information (Decision Point A), thus moving them to LoU 1 Orientation" (p. 119). The researcher believes that by observing others' example courses in Action Step 1, Participant 3 will determine what information they need to learn more about the innovation. Once Participant 3 moves to an LoU 1 Orientation, the researcher can provide new targeted interventions with the aim of progressing to Decision Point B, making a decision to begin using the innovation (Loucks et al., 1975).

Action Step 3: Implementation. During the data reflection process, Participant 3 expressed a desire to begin using video; however, it is incumbent on the change agent to select appropriate interventions. Hall and Hord (2015) suggested change agents associate "how the innovation might be related to an area that the person(s) is concerned about" (p. 327). Throughout the study, Participant 3 (personal communication, May 31, 2018) admitted they felt disconnected with their online students and saw a strength of video in its ability to serve as "a mechanism to connect the instructor and students." This disconnect was also observed in Participant 3's courses where instructor elements like eye contact and nonverbal behaviors were absent. Although Participant 3 (personal communication, May 31, 2018) expressed a willingness to adopt video as an innovation, they also made clear their value statement: "It takes time to produce something and if I'm going to invest the time into it, I want to be investing in something that is needed and is effective." This suggests that innovation adoption is strongly tied to user values and beliefs. Hall et al. (2013) cited Newhouse (1999), correlating LoU and curriculum: "If the curriculum directly supports the use of a particular innovation, it is much more likely to be implemented. If however, an innovation is merely an addendum to the curriculum, it is less likely to be implemented on a broad basis" (p. 39).

In response to Participant 3's desire to establish a personal connection with online students, Action Step 3 is to set up personal one-on-one virtual meetings with each online student at the beginning of the semester. These meetings will both address instructor concerns and increase teaching presence through the use of video.

Action Plan Researcher

In order to effect change and facilitate full implementation of the innovation, a change agent must provide appropriate interventions. The change agent serves as a source of these interventions (Hall & Hord, 2015); therefore, it is appropriate that an action plan for the researcher was also developed. Based on discussions with Participants 1-3, as well as personal reflection, action steps for the researcher (Table 28) were selected to facilitate participant movement across the metaphorical Implementation Bridge (Hall & Hord, 2015) as well as encourage sustained implementation of video in online courses.

Table 28

Action Plan Researcher

Action Step(s)	Person(s) Responsible	Identified Resources	Potential Barriers	Evaluation
1. Identify ways to celebrate and promote users demonstrating collaborative and student-focused efforts	Researcher	Participants and Administrators	Current practices	Documented evidence
2. Identify exemplar online courses with *a* ideal variations	Researcher	Online instructors	Time to locate, number of exemplar courses	Follow up discussion with participants
3. Expand components and variations to be included in Innovation Configurations	Researcher		File types	
4. Begin to develop an IC map for video as an innovation. Use data findings to begin describing variations	Researcher	Participants 1 and 2	Time required to develop map	IC Map Draft

Action Step 1: Celebrate and promote. As a result of this study, the researcher identified two individuals, Participants 1 and 2, who demonstrated high concerns and levels of use. According to Hall and Hord (2015), these users should be celebrated for their collaborative and student-focused efforts. Although these users demonstrate ideal concerns and behaviors, they are not to be overlooked (Hord et al., 2014). Hall and Hord

(2015) cautioned change agents from rewarding other users demonstrating lesser quality. Instead, high users should be encouraged, celebrated, and incentivized to sustain their existing efforts. Action Step 1 challenges the researcher to identify ways to celebrate users and their hard work.

While there is value in the researcher celebrating users' collaborative and student-focused efforts, she acknowledges that this recognition is limited. Participant 2 indicated that beyond the researcher, administrators were unaware of the quality level of some online courses compared to others. They also noted the current instructor evaluation does not adequately assess the quality of an online course. Although changing the evaluation may be outside the scope of the researcher's purview, she can take steps to promote the work of quality online instructors to administration and advocate for improved assessments.

Action Step 2: Examples. At the conclusion of the study, the researcher observed each participant expressed some type of Informational concerns. Participants 1 and 2 sought to learn more about the innovation and how others were using it for collaborative and student outcomes, while Participant 3 expressed interest in learning more about the innovation itself. Similarly, action steps for Participants 2 and 3 include identifying exemplar courses to observe and see how others are implementing video in their online courses. Action Step 2 will be for the researcher to review other online courses at the institution and identify appropriate, exemplar courses for participants to review. This action step will also include identifying other instructors who also demonstrate Collaboration and Consequence concerns in an effort to bring together users who are interested in working collaboratively and learning from one another (Hord et al., 2014).

Action Step 3: Expansion of IC components and variations. As a result of Participant 3's use of audio recorded PowerPoints, the researcher was challenged to consider expanding the definition of what was included in the variations of video use in online courses. Based on discussion with Participant 3, the researcher found that expanding this definition served as an inclusive pathway to acknowledge steps already taken by the instructor to engage users in the online course. These file types also can be converted easily into a more familiar video extension.

Action Step 4: IC Map development. As previously discussed, an IC Map is traditionally developed by studying available materials and interviewing experts or the developer in order to ascertain a description of the ideal configuration (Hall, 2010). IC Maps are also to be developed by a team who is knowledgeable about the innovation. Finally, IC Maps should be developed after a series of observations and collaborative discussions. Based on data findings, the researcher identified two participants, Participants 1 and 2, who could serve as team members to help develop an IC Map draft. Additionally, observations collected in Cycle 4 for all participants can help develop descriptions for ideal fidelity and variations of the ideal. Action Step 4 is for the researcher to begin forming an IC Map team and to start writing ideal and variation descriptions.

Action Plan Summary

The previous section presented targeted action plans (Tables 25- 28) for each individual participant and the researcher. Action plans included stated objectives and specific action steps based on appropriate interventions recommended for SoC users and LoU ratings. Other action steps were based on reported observations and reflections. The following section discusses implications and recommendations from individual participants to other change agents and researchers in the field.

Implications and Recommendations

The purpose of this study was to develop a holistic understanding of users' change process as it applied to the innovation: "video in online courses." The CBAM and CoI model served as conceptual frameworks for this study, as both models are holistic ones. When analyzing SoCQ total scores, it is recommended to establish a holistic perspective (George et al., 2013). This same approach is used when determining an overall LoU rating (G. Hall, personal communication, February 2, 2017). Likewise, the CoI model is comprised of three equally important areas of presence, thus further extending the goal of a richer, fuller understanding of users' adoption of an innovation; the result of which is customized, targeted interventions designed to move a user across the Implementation Bridge. Using this model, change agents may establish a pattern of collecting and analyzing user data at an institution and then applying targeted and appropriate interventions. Data may be collected over a period of time to demonstrate if, based on those appropriate interventions, a user's concerns have moved from Self and Task concerns to Impact concerns and a higher focus on student outcomes, nonuse to higher levels of use, and resemble closer to the ideal implementation fidelity. A holistic approach to understanding a user's change adoption process allows change agents to discover what a user values and is concerned about, what motivates them, and what potential areas of resistance are, as well as how they are actually behaving and using the innovation in practice. This approach allows change agents to see users as individuals on a personal change journey rather than simply as users or nonusers. Implementing this holistic model has the implication for changing the culture of an organization and how the change process is regarded, assessed, and understood.

At the broader level, change can be implemented first by the individual, and then to the department, and to the organization. Hall and Hord (2015) advocated, "[the] SoC, LoU, and IC provide constructs and measures for benchmarking change process progress" (p. 299). Using CBAM, departments could assess faculty instructors in regard to a select innovation and then determine appropriate action plans for each individual. As a result, faculty could collectively work on a shared, department goal, while pursing personal, individual goals. This approach may eliminate opposition between users and nonusers by validating and supporting nonusers where they are, while at the same time encouraging and celebrating high users. As individuals adopt and implement an innovation, the department moves further across the Implementation Bridge as a unit. When this model is replicated across multiple departments, change agents have the ability to facilitate collaborative, institutional efforts to change practice and improve outcomes across an organization. Once established, change agents may utilize CBAM to track multiple innovations across an organization at one time (Hall & Hord, 2015).

A second implication is the use of CBAM to direct professional development decisions. In the preface, the researcher revealed she was discouraged with the use of video in online courses at her institution despite the numerous professional development training workshops offered. This experience was an impetus for her to pursue this research study. The results of the study emphasize the need for appropriate, targeted interventions at the individual level; however, the researcher believes that professional development could be modified to users based on their CBAM profiles. Workshops could be designed to target particular users, such as the information shared, materials and activities utilized, and which users paired together. For example, users concerned about task and mechanical level of use would participate in workshops specifically designed to address the logistical short-term, day-to-day use of the innovation, while users concerned about student outcomes and collaboration would participate in more collaborative activities and engage in assessment-based discussions.

Implications discussed in this section can apply to the researcher's institution as well as to other change agents at their own organization, based on their experience and familiarity with their organization, users, and the innovation(s).

Recommendations for Future Study

While the generalizability of results is limited due to the boundedness of this case study, some recommendations can be generally applied. Stake (1995) referred to this application as naturalistic generalizations, in which insight is gained from knowledge of other case studies and appropriate to one's own understanding and personal experience. Based on the understanding gained from this case study, the researcher recommends the following for future research.

1. Hall and Hord (2015) suggested while there is significant research related to adoption, less is known about sustaining new practice with fidelity. A recommendation for future research is a longitudinal CBAM study of all three constructs to identify if concerns and behaviors fluctuate over time and what interventions, if any, were required to help sustain implementation. Studying how to sustain implementation over time may reveal insightful interventions.
2. A second recommendation for future study would be to add open-ended statement questions as well as additional demographic information in the SoCQ. According to George et al. (2006), "the open-ended statements provide valuable context for interpretations for the SoCQ profile(s)" (p. 25). Adding open-ended questions at the end of the SoC Questionnaire serves a

dual purpose. First, it provides the researcher with additional insight about a user's feelings and concerns about an innovation in their own words. Second, the inclusion of open-ended statements strengthens and triangulates data points related to reported concerns. The researcher would also include demographic information such as gender, age, rank, and academic discipline. While this modification would impact confidentiality, it would allow the researcher to analyze patterns and compare subgroups.

3. Due to the boundedness of this study, the research was limited to five action research cycles. In future study, the researcher would recommend that action plan interventions be implemented and then data collected again after a period of time. This recommendation would demonstrate measurable and observable data on whether implemented action steps were successful. This type of longitudinal study would also demonstrate tracked progress towards higher stages of concern, levels of use, and fidelity of implementation.

Summary

The findings of this study support the theoretical framework tenets of change theory and constructivism that guided this study. The three tenets of change theory and constructivism address the personal side of change, the change process, and how change is adopted over time. These tenets were integrated across the conceptual frameworks, literature review, methodology, data findings, and concluding recommendations. A summarized understanding of these tenets demonstrated how the overall research question was answered and how to effectively facilitate the change adoption process.

Change is personal. One of the tenets of change theory and constructivism is the emphasis on the personal aspect of human experience. Change is personal (Hall & Hord, 2015). It is personal to both the user adopting the innovation and to the change agent attempting to facilitate change. Personal experience, context, prior knowledge, interests, and bias all contribute to individuals' constructed knowledge and personal change experience (Creswell, 2014; Ravitch & Riggan, 2012). The personal side of change is evidenced by the intensity and type of concerns users hold about the same innovation, by the degree in which users behave in relation to the innovation, and the fidelity of how it is actually implemented in action. In this study, three individuals each held separate and distinct concerns about video in online courses. These concerns were influenced and constructed by their prior knowledge, personal experience, and purpose for using video.

Understanding how individuals experience and respond to change requires accepting that there is not one singular perspective to be discovered or achieved, but rather multiple perspectives may be held at the same time (Creswell, 2014). As demonstrated in this study by the action plans constructed for each participant, understanding the personal side of change allows a change agent to select appropriate targeted interventions to reduce resistance and facilitate adoption, implementation, and the sustained use of an innovation.

The personal side of change, however, is not limited to only the users adopting change. In this study, the findings have shown the significance of the change agent/ researcher's own personal experience understanding and facilitating change adoption. Change agents must acknowledge and reflect on their own personal experience, context, role, motivations, resistance, and bias towards an innovation, users, and the change process itself. Change agents' understanding of themselves and those they are attempting to facilitate through the change process is founded on their constructed understanding of this very personal, human experience called change.

Change is a process. A second tenet of change theory and constructivism is "change is a process, not an event" (Hall & Hord, 2015, p. 10); and understanding and knowledge is constructed together throughout that process rather than from a single discovery (Stake, 1995). This study demonstrated how understanding and knowledge were developed over a series of five iterative action cycles. The action research process allowed for planning, action, observation, and reflection to occur.

The process side of change is most effective as a collaborative or team effort, including the collaboration of collecting and sharing data, developing appropriate interventions, and identifying and creating assessment measures (Hall & Hord, 2015). A collaborative process allows knowledge to be generated by dialoguing with others (Garrison & Archer, 2000) and gaining insight from multiple perspectives and social interpretations (Creswell, 2014; Stake, 1995). In this study, the importance of collaboration was evidenced in Participants 1 and 2's concerns, behaviors, and recommended interventions and action steps.

Change takes time. A third tenet of change theory and constructivism is the process of change adoption requires time (Hall & Hord, 2015). Individuals adopt and implement innovations at different rates and may take up to 3-5 years to fully implement a change depending on the organizational context (Hall & Hord, 2015). Individual adopters range from innovators and early adopters to early majority, late majority, and laggards (Rogers, 2003). Realities and perspectives are ever-changing, as constructed understanding and knowledge shifts and grows over time (Creswell, 2014). In this study, constructed knowledge over time led to a shift in thinking by both Participant 3 towards the adoption of video and the researcher's own definition and belief of acceptable video variations in an online course.

Changes in individuals' concerns profiles, levels of use ratings, and movement towards the ideal innovation configuration serve as assessment markers during the change process (Hall & Hord, 2015). Over time, facilitated by appropriate interventions, users will successfully move across the Implementation Bridge towards improving practice and outcomes (Hall & Hord, 2015). When each individual changes their practice to focus on student outcomes through collaborative and integrative efforts of the innovation, change agents can effectually state that change has been implemented.

References

Agarwal, R., & Prasad, J. (1999). Are individual differences germane to the acceptance of new information technologies. *Decision Sciences, 30*(2), 361-391.

Ajzen, I., & Fishbein, M (1980). *Understanding attitudes and predicting social behavior.* Englewood Cliffs, NJ: Prentice Hall.

Akyol, Z., Arbaugh, J. B., Cleveland-Innes, M., Garrison, D. R., Ice, P., Richardson, J., & Swan, K. (2009) A response to the review of the community of inquiry framework. *Journal of Distance Education, 23*(2), 123-136.

Allen, I. E., & Seaman, J. (2011). Going the distance: Online education in the United States. https://onlinelearningconsortium.org/survey_report/2011-survey-online-learning-report/

Allen, I. E., & Seaman, J. (2014). Grade change: Tracking online education in the United States. Retrieved from https://onlinelearningconsortium.org/survey_report/2013-survey-online-learning-report

American Institutes for Research. (2018). Retrieved from https://www.air.org/

Anderson, S. E. (1997). Understanding teacher change: Revisiting the concerns based adoption model. *Curriculum Inquiry, 27*(3), 331-367.

Anderson, T. (2009) A rose by any other name: Still distance education – a response to D.R. Garrison: Implications of online and blended learning for the conceptual development and practice of distance education. *International Journal of E-learning and Distance Education, 23*(3), 111-116. Retrieved March 19, 2017, from http://files.eric.ed.gov/fulltext/EJ865350.pdf

Anderson, G. L., Herr, K., & Nihlen, A. S. (2007). *Studying your own school: An educator's guide to practitioner action research.* Thousand Oaks, CA: Sage Publications

Anderson, T., Rourke, L., Garrison, D. R., & Archer, W. (2001). Assessing teaching presence in a computer conferencing context. *Journal of Asynchronous Learning Networks,* 5(2), 1-17.

Andresen, M. A. (2009). Asynchronous discussion forums: Success factors, outcomes, assessments, and limitations. *Educational Technology & Society, 12*(1), 249-257.

Annand, D. (2011). Social presence within the community of inquiry framework. *International Review of Research in Open and Distance Learning, 12*(5), 38-54.

Arasaratnam-Smith, L., & Northcote, M. (2017). Community in online higher education: Challenges and opportunities. *Eflectronic Journal of e-Learning, 15*(2), 188-198.

Argyris, C., Putnam, R., & McLain Smith, D. (1985). *Action science: Concepts, methods, and skills for research and intervention.* San Francisco, CA: Jossey-Bass.

Argyris, C., & Schön, D. (1974). *Theory in practice: Increasing professional effectiveness.* San Francisco, CA: Jossey-Bass.

Argyris, C., & Schön, D. (1978). *Organizational learning: A theory of action perspective.* Reading, MA: Addison-Wesley Publishing.

Bailey, D. B., & Palsha, S. A. (1992). Qualities of the stages of concern questionnaire and implications for educational innovations. *Journal of Educational Research, 85*(4), 226-232.

Baim, S. A. (2015). Digital storytelling: Conveying the essence of a face-to-face lecture in an online learning environment. *Journal of Effective Teaching, 15*(1) 47-58.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W. H. Freeman.

Bandura, A. (2002). Growing primacy of human agency in adaptation and change in the electronic era. *European Psychologist, 7*(1), 2-16.

Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on Psychological Science, 1*(2), 164-180.

Bardosh, K. (2007). *The complete idiot's guide to digital video.* New York, NY: Alpha Books.

Beggs, T. A. (2000, April). *Influences and barriers to the adoption of instructional technology.* Paper presented at the Mid-South Instructional Technology Conference, Murfreesboro, TN.

Ben-Jacob, M. G., & Liebman, J, T. (2009). Technophobia and the effective use of library resources at the college/university level. *Journal of Educational Technology Systems, 38*(1) 35-38.

Benzine, C. (2015, Oct 19). Why is my voice different when I hear a recording. [Episode 207]. *Mental Floss: Big Questions.* Retrieved from https://www.youtube.com/watch?time_continue=1&v=BOP2lwme_Pk

Bernard, W. (2013). Philoponus on self-awareness. *Bulletin of the Institute of Classical Studies, 56*(S103), 195-206.

Biech, E. (2007). *Thriving through change: A leader's practical guide to change mastery.* Danvers, MA: American Society for Training & Development Press.

Bijnens, M., Vanbuel, M., Verstegen, S., & Young C., (Eds.). (2006). Handbook on digital video and audio in education: Creating and using audio and video material for educational purposes. Retrieved from https://elbd.sites.uu.nl/wp-content/uploads/sites/108/2017/05/2184_9_VideoAktivHandbookfin.pdf

Bogdan, R., & Biklen, S. K., (2003). *Qualitative research in education: An introductive to theories and methods.* Boston, MA: Allyn and Bacon

Bohlin, R. M., & Hunt, N. P. (1993). Teacher education students' attitudes toward using computers. *Journal of Research on Computing in Education, 25*(4) 487-497.

Borup, J., West, R. E., & Graham, C. R. (2011). Improving online social presence through asynchronous video. *Internet and Higher Education, 15,* 195-203.

Borup, J., West, R. E., Thomas, R. A., & Graham, C. R. (2014). Examining the impact of video feedback on instructor social presence in blended courses. *The International Review of Research in Open and Distance Learning, 15*(3) 232-256.

Bourke, B. (2014). Positionality: Reflecting on the research process. *The Qualitative Report, 19*(33), 1-9. Retrieved from http://nsuworks.nova.edu/tqr/vol19/iss33/3

Branigan, C. (2005). Video goes to school. *eSchool News, 8*(4), 25-29.

Brooks, D. C. (2015). *ECAR study of faculty and information technology. Research report.* Louisville, CO: ECAR. Retrieved from http://www.educause.edu/ecar

Brosnan, M. J. (1998). *Technophobia: The psychological impact of information technology.* London: Routledge.

Burgess, M. L., & Caverly, D. C., (2009). Techtalk: Second life and developmental education. *Journal of Developmental Education, 32*(3), 42-43.

Burnes, B. (2004). Kurt Lewin and the planned approach to change: A re-appraisal. *Journal of Management Studies, 41*(6), 977-1002.

Burnes, B., & Cooke, B. (2013). Kurt Lewin's field theory: A review and re-evaluation. *International Journal of Management Reviews, 15*(4) 408-425.

Bussey, J. M., Dormody, T. J., & VanLeeuwen, D. (2000). Some factors predicting the adoption of technology education in New Mexico public schools. *Journal of Technology Education, 12*(1) 4-17.

Bustamante, J. (2017). Max Weber revisited, the verstehen of migration through qualitative research. *Migraciones Internacionales, 9*(1), 43-67.

Calegari, M. F., Sibley, R. E., & Turner, M. E. (2015). A roadmap for using Kotter's organizational change model to build faculty engagement in accreditation. *Academy of Educational Leadership Journal, 19*(3), 31-43.

Carr, W., & Kemmis, S. (1986). *Becoming critical: Education, knowledge, and action research.* London, France: Falmer Press.

Casey, D. (2008). A journey to legitimacy: The historical development of distance education through technology. *TechTrends, 52*(2), 45-51.

Caspi, A., Gorsky, P., & Privman, M. (2005). Viewing comprehension: Students' learning preferences and strategies when studying from video. *Instructional Science: An International Journal of Learning and Cognition, 33*(1) 31-47.

Cels, S., Nauta, F., & Jong, J. D. (2012). *Agents of change: Strategy and tactics for social innovation.* Washington, DC: Brookings Institution Press.

Cerf, V. G. (2009). The day the Internet age began: Forty years ago today the first message was sent between computers on the ARPANET. *Nature, 461*(7268), 1202-2013.

Cha, J., & Chan-Olmsted, S. (2012). Substitutability between online video platforms and television. *Journalism and Mass Communication Quarterly, 89*(2), 261-278. Retrieved from http://ezproxy.gardner-webb.edu/login?url=https://search-proquest-com.ezproxy.gardner-webb.edu/docview/1026654513?accountid=11041

Chen, B. (2009). Barriers to adoption of technology-mediated distance education in higher-education institutions. *Quarterly Review of Distance Education, 12*(1), 333-338.

Cheung, D., Hattie, J., & Ng, D. (2001). Reexamining the stages of concern questionnaire: A test of alternative models. *The Journal of Educational Research, 94*(4), 226-236.

Clark, C., Strudler, N. B., & Grove, K. J. (2015). Comparing asynchronous and synchronous video versus text based discussions in an online teacher education course. *Online Learning Journal, 19*(3), 48-69.

Cleveland-Innes, M., Garrison, D. R., & Kinsel, E. (2007). Role adjustment for learnings in an online community of inquiry. *International Journal of Web-Based Learning and Teaching Technologies, 2,* 1-16.

Cochran-Smith, M., & Lytle, S. (1993). *Inside/outside: Teacher research and knowledge.* New York, NY: Teacher College Press.

Coghlan, D., (2007). Insider action research: Opportunities and challenges. *Management Research News*, *30*(5), 335-343. doi:http://dx.doi.org/10.1108/01409170710746337

Coghlan, D., & Brannick, T. (2001). *Doing action research in your own organization*. London: SAGE Publications.

Coghlan, P., & Coghlan, D. (2002). Action research for operations management. *International Journal of Operations & Production Management*. 22 (2), 220-240, https://doi.org/10.1108/01443570210417515

Coghlan, D., Shani, A. B., & Roth, J. (2016). Institutionalizing insider action research initiatives in organizations: The role of learning mechanisms. *Systemic Practice and Action Research, 29,* 83. doi:10.1007/s11213-015-9358-z

Community College Research Center (CCRC). (2013). What we know about online course outcomes. *Research Overview.* Retrieved from http://www.fac-mhec.csmd.edu/resources/online-f2f/1.CCRC_online-learning-practitioner-packet.pdf

Compeau, D. R., & Higgins, C. A., (1995). Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly, 19*(2), 189-211.

Conway, P. F., & Clark, C. M. (2003). The journey inward and outward: A re-examination of Fullers's concerns-based model of teacher development. *Teaching and Teacher Education, 19*(2003), 465-482.

Corey, S. M. (1953). *Action research to improve school practices.* Oxford, England: Bureau of Publications, Teachers Co.

Correia, A. (2015). Collaborative communication tools and technologies. In J. M. Spector (Ed.), *The SAGE encyclopedia of educational technology: Vol. 1* (pp. 125-128). Thousand Oaks, CA: Sage Publications.

Cozart, J. (2015).Virtual schools and programs. In J. M. Spector (Ed.), *The SAGE encyclopedia of educational technology: Vol. 2* (pp. 812-815). Thousand Oaks, CA: Sage Publications.

Crawford-Ferre, H. G., & Wiest, L. R. (2012). Effective online instruction in higher education. *Review of Distance Education*, *13*(1), 11-14.

Creative Commons. (2017, Nov 1). Retrieved from https://creativecommons.org/faq/#what-is-creative-commons-and-what-do-you-do

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage Publications.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, CA: Sage Publications.

Creswell, J. W. (2015). *Research design: Qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, CA: Sage Publications.

Cuban, L. (1986). *Teachers and machines: The classroom use of technology since 1920.* New York, NY: Teachers College Press.

Cummings, S., Bridgman, T., & Brown, K. G. (2016). Unfreezing change as three steps: Rethinking Kurt Lewin's legacy for change management. *Human Relations, 69*(1), 33-60.

Dahlstrom, E., Brooks, D. C., & Bichsel, J. (2014, Sept.). *The current ecosystem of learning management systems in higher education: student, faculty, and IT perspectives. Research report.* Louisville, CO: ECAR. Retrieved April 10, 2017, from http://www.educause.edu/ecar

Davis, F. D. (1989). Perceived usefulness, perceived ease of use & user acceptance of information technology. *MIS Quarterly, 13*(3) 319-339.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, *35*(8), 982-1003.

Davis, B., Carmean, C., & Wagner, E. D. (2009). *The evolution of the LMS from management to learning: Deep analysis of trends shaping the future of e-learning.* Sage Road Solutions E-learning Guild. Retrieved from http://www.blackboard.com/resources/proed/guild-lmsreport.pdf

DeCesare, J. A. (2014). The expanding role of online video in teaching, learning, and research. *Library Technology Reports, 50*(2) 5-12.

Delmas, P. M. (2017). Using voicethread to create community in online learning. *Tech Trends, 61,* 595-602. doi:10.1007/s11528-017-0195-z

Deng, X., Doll, W. J., & Truong, D. (2004). Computer self-efficacy in an ongoing use context. *Behavior and Information Technology, 23*(6), 395-412.

Devinder. (2017, Oct. 7). *7 best video sites, YouTube alternatives.* Retrieved from https://beebom.com/youtube-alternatives/

Dewey, J. (1897). My pedagogic creed. *The School Journal, 54,* 77-80.

Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process.* New York: D.C. Heath and Company.

Dewey, J. (1959). My pedagogic creed. In J. Dewey, *Dewey on education* (pp. 19-32). New York: Teachers College, Columbia University.

Donovan, L., Green, T. D., & Mason, C. (2014). Examining the 21st century classroom: Developing an innovation configuration map. *Journal of Educational Computing Research, 50*(2), 161-178.

Drago-Severson, E. (2009). *Leading adult learning: Supporting adult development in our schools.* Thousand Oaks, CA: Corwin.

Draus, P., Curran, M., & Trempus, M. (2014). The influence of instructor-generated video content on student satisfaction with and engagement in asynchronous online classes. *Journal of Online Learning and Teaching, 10*(2), 240-254.

Duke, D. (2004). *The challenges of educational change*. Boston, MA: Pearson Education.

Duncan, S. (2005). The U.S. army's impact on the history of distance education. *The Quarterly Review of Distance Education, 6*(4), 397-404.

Dunlap, J. C., & Lowenthal, P. R. (2009). Tweeting the night away: Using Twitter to enhance social presence. *Journal of Information Systems Education*, *20*(2), 129-136.

Dunlap, J. C., Verma, G., & Johnson, H. L. (2016). Presence+experience: A framework for the purposeful design of presence in online courses. *Tech Trends, 60*, 145-151.

Dweck, C. S. (1999). *Essays in social psychology. Self-theories: Their role in motivation, personality, and development.* New York, NY: Psychology Press.

Dweck, C. S. (2012). *Mindset: Changing the way you think to fulfil your potential.* Great Britain: Robinson.

Dweck, C. S. (2016). What having a "growth mindset" actually means. *Harvard Business Review*. Retrieved from https://hbr.org/2016/01/what-having-a-growth-mindset-actually-means

Edwards, C., & Willis, J. W. (2014). *Action research: Models, methods, and examples.* Charlotte, NC: Information Age Publishing.

Ekmekci, O. (2013). Being there: Establishing instructor presence in an online learning environment. *Higher Education Studies, 3*(1), 29-38.

Electronic Code of Federal Regulations. (2018). Title 34: Education, Subtitle B, Chapter IV, Part 600, Subpart A, § 600.2 Definitions. Retrieved from https://www.ecfr.gov/cgi-bin/text-idx?rgn=div8&node=34:3.1.3.1.1.1.23.2

Ellsworth, J. B. (2000). Surviving change: A survey of educational change models. Syracuse, NY: ERIC Clearinghouse on Information & Technology. (ED443417)

Ellsworth, J. B. (2015a). Change agency. In J. M. Spector (Ed.), *The SAGE encyclopedia of educational technology: Vol. 1* (pp. 97-100). Thousand Oaks, CA: Sage Publications.

Ellsworth, J. B. (2015b). Early adopters. In J. M. Spector (Ed.), *The SAGE encyclopedia of educational technology: Vol. 1* (pp. 243-245). Thousand Oaks, CA: Sage Publications.

Ely, D. P. (1990). Conditions that facilitate the implementation of educational technology innovations. *Journal of Research on Computing in Education, 23*(2), 298-305.

Ely, D. P. (1999, Feb.). *New perspectives on the implementation of educational technology innovation.* Paper delivered at the Association for Educational Communications and Technology Annual Conference, Houston, TX.

English Oxford Living Dictionary. (n.d.a). Gestalt. Retrieved from https://en.oxforddictionaries.com/definition/us/gestalt

English Oxford Living Dictionary. (n.d.b). Self-awareness. Retrieved from https://en.oxforddictionaries.com/definition/us/self-awareness

English Oxford Living Dictionary. (n.d.c). Verstehen. Retrieved from https://en.oxforddictionaries.com/definition/verstehen

Evans, T., Haughey, M., & Murphy, D. (2008). *International handbook of distance education.* Amsterdam: Elsevier.

Fagan, M. H., Neill, S., & Woolridge, B. R. (2003). Exploring the intention to use computers: An empirical investigation of the role of intrinsic motivation, extrinsic motivation, and perceived ease of use. *Journal of Computer Information Systems, 48*(3), 31-37.

Fein, A. D., & Logan, M. C. (2003). Preparing instructors for online instruction. *New Directions for Adult and Continuing Education, 2003*(100), 45-55.

Fernandez, V., Simo, P., Castillo, D., & Sallan, J. M. (2014). Online discussion forums with embedded streamed videos on distance courses. *Journal of Technology and Science Education, 4*(1), 25-38.

Fitzpatrick, J. L., Sanders, J. R., & Worthen, B. R. (2011). *Program evaluation: Alternative approaches and practical guidelines*. Upper Saddle River, NJ: Pearson Education.

Freire, P. (1972). *Pedagogy of the oppressed*. New York: Herder and Herder.

Fullan, M. (1993). *Change forces probing the depths of educational reform*. London: Falmer Press.

Fullan, M. (2001). *Leading in a culture of change*. San Francisco, CA: Jossey-Bass.

Fullan, M. (2007). *The new meaning of educational change*. New York, NY: Teachers College.

Fuller, F. F. (1969). Concerns of teachers: A developmental conceptualization. *American Educational Research Journal, 6*(2), 207-226.

Garrison, D. R. (2007). Online community of inquiry review: Social, cognitive, and teaching presence issues. *Journal of Asynchronous Learning Networks, 11*(1), 61-72.

Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education, 2*(2-3), 87-105.

Garrison, D. R., & Arbaugh, J. B. (2007). Researching the community of inquiry framework: Review, issues, and future directions. *Internet and Higher Education*, *10*(3), 157-172.

Garrison, D. R., & Archer, W. (2000). *A transactional perspective on teaching and learning: A framework for adult and higher education.* Bingley, UK: Emerald Group Publishing Limited.

Garrison, D., Cleveland-Innes, M., & Fung, T. (2004). Student role adjustment in online communities of inquiry: Model and instrument validation. *Journal of Asynchronous Learning Network, 8,* 61-74.

George, A. A., Hall, G. E., & Stiegelbauer, S. M. (2006). *Measuring implementation in schools: The stages of concern questionnaire.* SEDL. Austin, TX. Retrieved February 17, 2017, from http://www.sedl.org/pubs/catalog/items/cbam19.html

George, A. A., Hall, G. E., & Stiegelbauer, S. M. (2013). *Measuring implementation in schools: The stages of concern questionnaire*. Austin, TX: Southwest Educational Development Laboratory.

Gillett-Swan, J. K. (2017). The challenges of online learning: Supporting and engaging the isolated learner. *Journal of Learning Design, 10*(1) 20-30.

Greenwood, D. J., & Levin, M. (2007). *Introduction to action research: Social research for social change*. Thousand Oaks, CA: Sage Publications.

Gunawardena, C. (1999, October). *The challenge of designing and evaluating "interaction" in web-based distance education.* Paper presented at the WebNet 99 World Conference on the WWW and Internet Proceedings, Honolulu, HI, (abstract).

Guo, P. J., Kim, J., & Rubin, R. (2014, March). *How video production affects student engagement: An empirical study of MOOC videos*. Paper presented at the ACM Conference on Learning at Scale, Atlanta, GA. 41-50

Gupta, U. G. (2001). Technophobia is conquerable. In Student Affairs online. Retrieved from http://www.studentaffairs.com/ejournal/Winter_2001/technophobia.html

Hafner, K. (2001, December 6). Billions served daily, and counting. (The history of email). *New York Times,* p. G1. Retrieved April 14, 2017, from http://ezproxy.gardner-webb.edu/login?url=http://go.galegroup.com/ps/i.do?p=STND&sw=w&u=nclivegwu&v=2.1&it=r&id=GALE%7CA80728264&asid=da6da3db746f265a0bc8b5caeb54b1c0

Hall, G. E. (2010). Technology's Achilles heel: Achieving high-quality implementation. *Journal of Research on Technology in Education, 42*(3), 231-253. Retrieved from http://ezproxy.gardner-webb.edu/login?url=http://search.proquest.com/docview/817559575?accountid=11041

Hall, G. E. (2013). Evaluating change processes. *Journal of Educational Administration, 51*(3), 264-289. doi:http://dx.doi.org/10.1108/09578231311311474

Hall, G. E., Dirksen, D. J., & George, A. A. (2013). *Measuring implementation of schools: Levels of use.* SEDL. Austin, TX. Retrieved February 16, 2017, from http://www.sedl.org/pubs/catalog/items/cbam18.html

Hall, G. E., & Hord, S. M. (1987). *Change in schools: Facilitating the process.* Albany, NY: State University of New York Press.

Hall, G. E., & Hord, S. M. (2015). *Implementing change: Patterns, principles, and potholes.* Needham Heights, MS: Allyn and Bacon.

Hall, G. E., Loucks, S. F., Rutherford, W. L., & Newlove, B. W. (1975). Levels of use of the innovation: A framework for analyzing innovation adoption. *The Journal of Teacher Education, 26*(1), 52-56. Retrieved from https://doi.org/10.1177%2F002248717502600114

Hall, G. E., Wallace, R. C., & Dossett, W. A. (1973). *A developmental conceptualization of the adoption process within educational institutions.* Austin, TX: Research and Development Center for Teacher Education, The University of Texas at Austin.

Havelock, R. G. (1973). *The change agent's guide to innovation* (1st ed.). Englewood Cliffs, NJ: Educational Technology Publications.

Havelock, R. G. & Havelock, M. C. (1973). *Training for change agents: A guide to the design of training programs in education and other fields*. Ann Arbor, MI: Institute for Social Research.

Havelock, R. G., & Zlotolow, S. (1995). *The change agent's guide to innovation* (2nd ed.). Englewood Cliffs, NJ: Educational Technology Publications.

Hays, P. A. (2004). Case study research. In deMarrais, K. & Lapan, S. D. [Eds.], *Foundations for research: Methods of inquiry in education and the social sciences* (pp. 217-234). Mahwah, NJ: Lawrence Erlbaum Associates.

Hegeman, J. S. (2015). Using instructor-generated video lectures in online mathematics courses improves student learning. *Online Learning, 19*(3) 70-87.

Herr, K., & Anderson, G. L. (2015). *The action research dissertation: A guide for students and faculty.* Thousand Oaks, CA: Sage Publications.

Hof, R. D. (1997). Hello, couch potatoes. *Business Week*, (3519), 200-202.

Homer, B. D., Plass, J. L., & Blake, L. (2007). The effects of video on cognitive load and social presence in multimedia-learning. *Computers in Human Behavior, 24*(3), 786-797.

Hord, S. M., & Roussin, J. L. (2013). *Implementing change through learning: Concerns-based concepts, tools and strategies for guiding change.* Thousand Oaks, CA: Corwin.

Hord, S. M., Rutherford, W. L., Huling-Austin, L, & Hall, G. E. (2014). Taking charge of change. Retrieved from https://www.air.org/sites/default/files/downloads/report/taking-charge-of-change-2014.pdf

Hord, S. M., Stiegelbauer, S. M., Hall, G. E., & George, A. A. (2006). *Measuring implementation in schools: Innovation configurations*. Austin, TX: Southwest Educational Development Laboratory.

Huang, W. D. (2015). Distance learning for degree completion for working adults. In J. M. Spector (Ed.), *The SAGE encyclopedia of educational technology: Vol. 1* (pp. 229-231). Thousand Oaks, CA: Sage Publications.

IANA. (n.d.). Retrieved from http://iana.org

Ibrahim, M., Antonenko, P. D., Greenwood, C. M., & Wheeler, D. (2012). Effects of segmenting, signaling, and weeding on learning from educational video. *Learning, Media, and Technology, 37*(3), 220-235.

Ice, P., Kupczynski, L., Wiesenmayer, R., & Phillips, P. (2008). Student perceptions of the effectiveness of group and individualized feedback in online courses. *First Monday, 13*(11). doi:http://dx.doi.org/10.5210/fm.v13i11.2260

Ifenthaler, D., Bellin-Mularski,N., & Mah, D. (2015). Internet: Impact and potential for learning and instruction. In J. M. Spector (Ed.), *The SAGE encyclopedia of educational technology: Vol. 1* (pp. 416-422). Thousand Oaks, CA: Sage Publications.

Jaggars, S. S., Edgecombe, N., & Stacey, G. W. (2013). *Creating an effective online instructor presence.* New York, NY: Community College Research Center, Columbia University. (ED542146)

Jaszi, P., & Aufderheide, P. (2008). *Code of best practices in fair use for online video.* Washington, DC: American University Center for Social Media. Retrieved from http://digitalcommons.wcl.american.edu/cgi/viewcontent.cgi?article=1000&context=pijip_copyright

Jimoyiannis, A. (2015). Digital literacy and adult learners. In J. M. Spector (Ed.), *The SAGE encyclopedia of educational technology: Vol. 1* (pp. 212-215). Thousand Oaks, CA: Sage Publications.

John, S. (2015). The integration of information technology in higher education: A study of faculty's attitudes towards IT adoption in the teaching process. *Contaduría y Administración, 60,* 230-252.

Kaempffert, W. (1924) The social destiny of radio. *The Forum, 71,* 768.

Kaltura Report. (2015). The state of video in education 2015. Retrieved from https://site.kaltura.com/rs/984-SDM-859/images/The_State_of_Video_in_Education_2015_a_Kaltura_Report.pdf

Kaltura Report. (2017). The state of video in education 2017. Retrieved from https://corp.kaltura.com/resources/state-of-video-in-education-2017/

Kanter, R. M., Stein, B. A., & Jick, T. D. (1992). *The challenge of organizational change: How companies experience it and leaders guide it*. New York: Free Press.

Kaufman, P. B., & Mohan, J. (2009). *Video use and higher education: Options for the future.* Retrieved from Intelligent Television, http://intelligenttelevision.com/files/42-intcccnyuvideo_and_higher_edjune_2009_2.pdf

Keles, E. (2018). Use of Facebook for the community services practices course: Community of inquiry as a theoretical framework. *Computers & Education, 116,* 203-224.

Kemmis, S. (1982). Action research in retrospect and prospect. In Stephen Kemmis, et al (Eds), *The action research reader* (2nd ed., pp. 11-31). Geelong: Deakin University Press.

Kemmis, S., & McTaggart, R. [Eds]. (1988). *The action research planner* (3rd ed.). Victoria: Deakin University.

Kemmis, S., McTaggart, R., & Nixon, R. (2014). *The action research planner: Doing critical participatory action research*. Springer Singapore.

Knowles, M. S. (1990). *The adult learner: A neglected species* (4th ed.). Houston, TX: Gulf Publishing.

Knowles, M. S., Holton, E. F., & Swanson, R. A. (2005). *The adult learner: The definitive classic in adult education and human resource development.* Boston, MA: Taylor & Francis Ltd.

Kotter, J. P. (1996). *Leading change*. Boston, MA: Harvard Business School Press.

Kotter International. (2018). 8-step process. Retrieved from https://www.kotterinc.com/8-steps-process-for-leading-change/

Koumi, J. (2006). *Designing video and multimedia for open and flexible learning.* London: Routledge.

Kratochwill, T. R. (2005). Theories of change and adoption of innovations: The evolving evidence-based intervention and practice movement in school psychology. *Psychology in the Schools*, *42*(5), 475-494.

Kroner, G. (2014, January 7). Does your LMS do this? [Blog post]. Retrieved from https://edutechnica.com/2014/01/07/a-model-for-lms-evolution/

Kuo, Y. (2015). Affective factors in learning, instruction, and technology. In J. M. Spector (Ed.), *The SAGE encyclopedia of educational technology: Vol. 1* (pp. 12-16). Thousand Oaks, CA: Sage Publications.

Laaser, W., & Toloza, E. A. (2017). The changing role of the educational video in higher distance education. *International Review of Research in Open and Distributed Learning, 18*(2), 264-276.

Lane, I. F. (2007). Change in higher education: Understanding and responding to individual and organizational resistance. *Journal VME, 34*(2), 85-92.

Lewin, K. (1946). Action research and minority problems. *Journal of Social Issues, 2*(4), 34-36. doi:10.1111/j.1540-4560.1946.tb02295.x

Lewin, K. (1947). *Field theory in social science.* New York, NY: Harper & Row.

Liberman, A. (2001). The professional lives of change agents: What they do and what they know. In F. Rust & H. Freidus (Eds.), *Guiding school change: The role and work of change agents*. New York, NY: Teachers College Press.

Lincoln, Y. S., & Guba, E. G. (1985*). Naturalistic inquiry*. Newbury Park, CA: Sage Publications.

Linnell, C. C. (1992). Concerns of technology education teachers regarding curriculum change. *Journal of Epsilon Pi Tau*, *18*(1), 45-52.

Lippett, R. (1965). The use of social research to improve social practice. *American Journal of Orthopsychiatry, 35*(4), 663-669. doi:10.1111/j.1939-0025.1965.tb00435.x

Liu, C., & Yang, S. (2014). Using the community of inquiry model to investigate students' knowledge construction in asynchronous online discussions. *Journal of Education Computing Research, 51*(3), 327-354.

Loucks, S. F., Newlove, B. W., & Hall, G. E. (1975). *Measuring levels of use of the innovation: A manual for trainers, interviewers, and raters.* Austin, TX: The University of Texas.

Lynch, D. (2002, January 18). Professors should embrace technology in courses. Chronicle of Higher Education. Retrieved from https://www.chronicle.com/article/Professors-Should-Embrace/34437/#!/subscriptions/offers/?PK=M1224%26cid=MH2WPW1

Lyons, A., Reysen, S., & Pierce, L. (2011). Video lecture format, student technological efficacy, and social presence in online courses. *Computers in Human Behavior, 28*(1), 181-186.

Mackay, M. (2016). Making sense of critical participatory action research. Reflections on the action research planner: Doing critical participatory action research. *International Practice Development Journal, 6*(2), 1-3.

Malaga, R. A., & Koppel, N. B. (2017). A comparison of video formats for online teaching. *Contemporary Issues in Education Research, 10*(1), 7-12.

Marshall, C., & Rossman, G. B. (2006). *Designing qualitative research.* Thousand Oaks, CA: Sage Publications.

Maruyama, G. (1996). Systems practice: Application and transformation of action research in educational research and practice. *Systems Practice, 9*(1), 85-101.

Matthew, K. I., Parker, R., & Wilkinson, L. (1998). *Faculty adoption of technology: Stages of concern.* Paper presented at the Society for Information Technology & Teacher Education International Conference, Washington, DC. 333-336.

Maxwell, J. A. (2010). Using numbers in qualitative research. *Qualitative Inquiry, 16*(6), 475-482.

Mayer, R. E. (2008). Applying the science of learning: Evidence-based principles for the design of multimedia instruction. *American Psychologist, 63*(8), 760-769.

Mayer, R. E., & Moreno, R. (2003). Nine ways to reduce cognitive load in multimedia learning. *Educational Psychologist, 38*(1), 43-52.

McCutcheon, G., & Jung, B. (1990). Alternative perspectives on action research. *Theory into Practice, 29*(3), 144-151.

McAlister, R. B. (2014). Use of instructor-produced YouTube® videos to supplement manual skills training in occupational therapy education. *The American Journal of Occupational Therapy, 68*, S67-72. Retrieved from http://ezproxy.gardner-webb.edu/login?url=https://search-proquest-com.ezproxy.gardner-webb.edu/docview/1629332621?accountid=11041

McLagan, P. (2013).The often lonely and murky world of the change agent. Retrieved from http://patmclagan.com/blog/the-often-lonely-and-murky-world-of-the-change-agent/

Meneses, R., & Larkin, M. (2015) The experience of empathy: Intuitive, sympathetic, and intellectual aspects of social understanding. *Journal of Humanistic Psychology*, *57*(1) 3-32.

Merriam, S. B. (1998). *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass Publishers.

Merriam, S. B., Johnson-Bailey, J.., Lee, M., Kee, Y., Ntseane, G., & Muhamad, M. (2001). Power and positionality: Negotiating insider/outsider status within and across cultures. *International Journal of Lifelong Education, 20*(5), 405-416.

Merriam-Webster Dictionary. (2017a). Correspondence course. Retrieved from https://www.merriam-webster.com/dictionary/correspondence%20course

Merriam-Webster Dictionary. (2017b). Online. Retrieved from https://www.merriam-webster.com/dictionary/online

Mertler, C. A. (2006). *Action research: Teachers as researchers in the classroom classroom* (1st ed.). Thousand Oaks, CA: Sage Publications.

Mertler, C. A. (2009). *Action research: Teachers as researchers in the classroom* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Mertler, C. A. (2012). *Action research: Improving schools and empowering educators* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Mertler, C. A., & Charles, C. M. (2008*). Introduction to educational research*. Boston, MA: Pearson Allyn and Bacon.

Miller, S. T., & Redman, S. L. (2010). Improving instructor presence in an online introductory astronomy course through video demonstrations. *Astronomy Education Review, 9*(1). doi:10.3847/AER2009072

Mills, G. E. (2003). *Action research: A guide for the teacher researcher* (2nd ed.). Upper Saddle River, NJ: Merrill Prentice Hall.

Mita, T. H., Dermer, M., & Knight, J. (1977). Reversed facial images and the mere-exposure hypothesis. *Journal of Personality and Social Psychology, 35*(8), 597-601.

Mitchell, L. D., Parlamis, J. D., & Claiborne, S. A. (2015). Overcoming faculty avoidance of online education: From resistance to support to active participation. *Journal of Management Education*, *39*(3), 350-371.

Montoya, R. M., Horton, R. S., Vevea, J. L., Citkowicz, M., & Lauber, E. A. (2017). A re-examination of the mere exposure effect: The influence of repeated exposure on recognition, familiarity, and liking. *Psychological Bulletin*, *143*(5), 459-498. doi:10.1037/bul0000085

Moore, K. (2011). *71% of online adults now use video-sharing sites.* Retrieved from http://www.pewinternet.org/2011/07/26/71-of-online-adults-now-use-video-sharing-sites/

Naisbitt, J. (2006). *Mind set! Eleven ways to change the way you see—and create—the future*. New York, NY: Harper Collins Publishers.

Newhouse, C. P. (2001). Applying the concerns based adoption model to research on computers in classrooms. *Journal of Research on Computing in Education, 33*(5).

Newman, M. Z. (2014). *Video revolutions: On the history of a medium.* New York, NY: Columbia University Press.

Nørskov, S. V., & Rask, M. (2011). Observation of online communities: A discussion of online and offline observer roles in studying development, cooperation and coordination in an open source software environment. *Forum: Qualitative Social Research, 12*(3).

Nulty, D. D. (2008) The adequacy of response rates to online and paper surveys: What can be done? *Assessment & Evaluation in Higher Education, 33*(3), 301-314.

Osman, M. E. (2005). Students' reaction to WebCT: Implications for designing online learning environments. *International Journal of Instructional Media*, *32*(4), 353-362.

Öztürk, E. (2015). Facebook as a new community of inquiry environment: An investigation in terms of academic achievement and motivation. *Journal of Baltic Science Education, 14*(1) 20-33.

Palloff, R. M., & Pratt, K. (2003). *The virtual student: A profile and guide to working with online learners.* San Francisco, CA: Jossey-Bass.

Papanikolaou, K., Gouli, E., & Makri, K. (2014). Designing pre-service teacher training based on a combination of TPACK and Communities of Inquiry. *Procedia – Social and Behavioral Sciences*, *116*, 3437-3442.

Patton, M. (1992) Ethnography and research: A qualitative view. *Topics in Language Disorders, 12*(3), 1-14.

Pender, K. (1999). *Digital video for the desktop.* Woburn, MA: Focal Press division of Reed Educational and Professional Publishing Ltd.

Perrin, A. (2017). *Digital gap between rural and nonrural America persists.* Pews Research Center. Retrieved from http://www.pewresearch.org/fact-tank/2017/05/19/digital-gap-between-rural-and-nonrural-america-persists/

Pi, Z., Hong, J., & Yang, J. (2017). Does instructor's image size in video lectures affect learning outcomes? *Journal of Computer Assisted Learning, 33*(4), 347-354.

Picciano, A. G. (2002). Beyond student perceptions: Issues of interaction, presence, and performance in an online course. *Journal of Asynchronous Learning Network, 6* (1), 21-40.

Piggot-Irvine, E. (2006). Establishing criteria for effective professional development and use in evaluating an action research programme. *Journal of In-service Education*, *32*(4), 477-496.

Pine, G. (2009). *Teacher action research: Building knowledge democracies.* Thousand Oaks, CA: Sage Publications.

Pollack, J., & Pollack, R. (2015). Using Kotter's eight stage process to manage an organizational change program: Presentation and practice. *Systemic Practice and Action Research, 28*(1), 51-66. doi 0.1007/s11213-014-9317-0

Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon MCB University Press, 9*(5), 1-6.

Prochaska, J. O., Redding, C. A., & Evers, K. E. (2008). The transtheoretical model and stages of change. In K. Glanz, B. K. Rimer, K. Viswanath, K. Glanz, B. K. Rimer, K. Viswanath (Eds.), *Health behavior and health education: Theory, research, and practice* (4th ed, pp. 97-121). San Francisco, CA: Jossey-Bass.

The psychology book: Big ideas simply explained. (2012). London: DK Pub.

Purcell, K. (2013). *Online video 2013*. Retrieved from Pew Research Center's Internet & American Life Project website: http://pewinternet.org/Reports/2013/Online-video

Quality Matters. (2014). Higher education rubric. Retrieved from https://www.qualitymatters.org/rubric

Ramsey, C., & McCaughey, M. (2012, September-October). Copyright for academics in the digital age: Putting teaching materials on the web doesn't necessarily promote public knowledge. Retrieved from https://www.aaup.org/article/copyright-academics-digital-age#.WnX0tudG3IV

Ravitch, S. M., & Riggan, M. (2012). *Reason and rigor: How conceptual frameworks guide research.* Thousand Oaks, CA: Sage Publications.

Reason, P., & Bradbury, H. [Eds]. (2008). *The SAGE handbook of action research: Participative inquiry and practice.* Thousand Oaks, CA: Sage Publications.

Reid, P. (2012). Categories for barriers to adoption of instructional technologies. *Education and Information Technologies, 19*(2), 383-407.

Reid, P. (2017). Supporting instructors in overcoming self-efficacy and background barriers to adoption. *Education and Information Technologies, 22*(1), 369-382. doi:http://dx.doi.org.ezproxy.gardner-webb.edu/10.1007/s10639-015-9449-6

Ribeiro, J. (2014). Teacher technology adoption and the philosophy of fear. *Antistasis, 4*(2), 30-33.

Rogers, E. M. (1962). *Diffusion of innovations* (1st ed.). New York: Free Press of Glencoe.

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York, NY: Free Press.

Rogers, S. E. (2016). Bridging the 21st century digital divide. *Tech Trends, 60,* 197-199.

Rossman, G. B., Corbett, H. D., & Firestone, W. A. (1988). *Change and effectiveness in schools: A cultural perspective.* Albany, NY: State University of New York Press.

Rourke, L., & Kanuka, H. (2009). Learning in communities of inquiry: A review of the literature. *International Journal of E-Learning and Distance Education, 23*(1), 19-48.

Rust, F. O., & Freidus, H. (Eds.). (2001). *Guiding school change: The role and work of change agents* (Series on school reform; Series on school reform). New York: Teachers College Press. Retrieved from http://catdir.loc.gov/catdir/toc/fy02/2001016203.html

Rutherford, L. H., & Grana, S. J. (1995). Retrofitting academe: Adapting faculty attitudes and practices to technology. *T. H. E. Journal, 23*(2), 82-86.

Rye, S. A. (2008). Exploring the gap of the digital divide. *GeoJournal, 71*(2-3), 171-184. doi:http://dx.doi.org.ezproxy.gardner-webb.edu/10.1007/s10708-008-9154-8

Sammons, M. C. (1994). Motivating faculty to use multimedia as a lecture tool. *T. H. E. Journal, 21*(7), 88-90. (EJ478058)

Samuelson, K. (2017). Vocal chords: Why do I hate the sound of my own voice? Retrieved from http://time.com/4820247/voice-vocal-cords/

Sarayreh, B. H., Khudair, H., & Barakat, E. (2013). Comparative study: The Kurt Lewin of change management. *International Journal of Computer and Information Technology, 2*(4), 626-629.

Schein, E. H. (1996). Kurt Lewin’s change theory in the field and in the classroom: Notes toward a model of managed learning. *Systems Practice, 9*(27), 27-28. Retrieved from https://doi.org/10.1007/BF02173417

Schlosser, L. A., & Simonson, M. (2006). *Distance education: Definition and glossary of terms*. Greenwich, CT: Information Age Publishing, Inc.

Schmuck, R. A. (1997). *Practical action research for change*. Arlington Heights, IL: SkyLight Professional Development.

Schutt, M., Allen, B. S., & Laumakis, M. A. (2009). The effects of instructor immediacy behaviors in online learning environments. *Quarterly Review of Distance Education, 10*(2), 135-148.

Seaman, J. (2009). O*nline learning as a strategic asset, vol. 2: The paradox of faculty voices*. Association of Public and Land-Grant Universities. Retrieved from https://files.eric.ed.gov/fulltext/ED517311.pdf

SEDL. (2011, February 25). Levels of use, a dimension of the concerns-based adoption model (CBAM). [Video file]. Retrieved from https://www.youtube.com/watch?v=PttbIrk2qEw

Shea, P., & Bidjerano, T. (2008). Measures of quality in online education: An investigation of the community of inquiry model and the net generation. *Journal of Educational Computing Research, 39*(4), 339-362.

Shea, P., & Bidjerano, T. (2009). Community of inquiry as a theoretical framework to foster "epistemic engagement" and "cognitive presence" in online education. *Computers and Education, 52*(3), 543-553.

Shea, P., Li, C. S., & Pickett, A. (2006). A study of teaching presence and student sense of learning community in fully online and web-enhanced college courses. *Internet and Higher Education, 9*(2006), 175-190.

Sherer, P., & Shea, T. (2002). Designing courses outside the classroom: New opportunities with the electronic delivery toolkit. *College Teaching, 50*(1), 15-20.

Sherer, P., & Shea, T. (2011). Using online video to support student learning and engagement. *College Teaching,* 59(2), 56-59.

Siegle, D. (2000). Introduction to self-efficacy. Retrieved from https://nrcgt.uconn.edu/underachievement_study/self-efficacy/se_section1/

Smith, T. K. (2015). Virtual learning environments. In J. M. Spector (Ed.), *The SAGE encyclopedia of educational technology: Vol. 2.* (pp. 810-812). Thousand Oaks, CA: Sage Publications.

Smith, S., Caruso, J., & Kim, J. (2010). ECAR study of undergraduate students and information technology. Retrieved from https://library.educause.edu/resources/2009/10/the-ecar-study-of-undergraduate-students-and-information-technology-2009

Smyth, R. (2011). Enhancing learner–learner interaction using video communications in higher education: Implications from theorising about a new model. *British Journal of Educational Technology, 42*(1), 113-127. Retrieved from http://doi.org/10.1111/j.1467---8535.2009.00990.x

Solmaz, O. (2015). #Beyond140: Helping pre-service teachers construct a community of inquiry on twitter. *Turkish Online Journal of Educational Technology, 15*(4), 1-15.

Spector, J. M., & Ren, Y. (2015). History of educational technology. In J. M. Spector (Ed.), *The SAGE encyclopedia of educational technology: Vol. 1* (pp. 335-345). Thousand Oaks, CA: Sage Publications.

Stake, R. E. (1995). *The art of case study research.* Thousand Oaks, CA: Sage Publications.

Stephen, A. T. (2016). The role of digital and social media marketing in consumer behavior. *Current Opinion in Psychology, 10*(1), 17-21. https://doi.org/10.1016/j.copsyc.2015.10.016

Stevens, R. C., & Whittle, S. R. (2013). *Changing organizations from within: Roles, risks and consultancy relationships*. New York, NY: Routledge.

Stewart, M. K., (2017, Sept.). Assessing interactive learning activities in technology-mediated FYC. *Computers and Composition*, *45*, 67-84.

Stodel, E. J., Thompson, T. L., & MacDonald, C. J. (2006). Learner's perspectives on what is missing from online learning: Interpretations through the community of inquiry framework. *The International Review of Research in Open and Distributed Learning*, *7*(3), 325.

Straub, E. T. (2009). Understanding technology adoption: Theory and future directions for informal learning. *Review of Educational Research*, *79*(2), 625-649.

Stringer, E. T. (2007). *Action research*. Los Angeles: Sage Publications.

Surry, D. W. (2015). Predicting change and adoption of technology innovations. In J. M. Spector (Ed.), *The SAGE encyclopedia of educational technology: Vol. 2.* (pp. 584-587). Thousand Oaks, CA: Sage Publications.

Swain, C. (2008). Are we there yet? The power of creating an innovation configuration map on the integration of technology into your teacher education program. *Journal of Computing in Teacher Education*, *24*(4), 143-147.

Swan, K., Garrison, D. R., & Richardson, J. C. (2009). A constructivist approach to online learning: The community of inquiry framework. In Payne, C. R. (Ed.) *Information technology and constructivism in higher education: Progressive learning frameworks.* Hershey, PA: IGI Global, 43-57.

Swan, K., Shea, P., Richardson, J., Ice, P., Garrison, D. R., Cleveland-Innes, M., & Arbaugh, J. B. (2008). Validating a measurement tool of presence in online communities of inquiry. *E-mentor, 2*(24), 1-12.

Swan, K., & Shih, L. F. (2005). On the nature and development of social presence in online course discussions. *Journal of Asynchronous Learning Networks, 9*, 115-136.

Syed, M. R. [Ed.] (2010). *Technology shaping instruction and distance education: New studies and utilizations.* Hershey, PA: Information Science Reference.

Talukder, M. (2014). *Managing innovation adoption: From innovation to implementation.* New York, NY: Routledge.

Thatcher, J. B., & Perrewe, P. L. (2002). An empirical examination of individual traits as antecedents to computer anxiety and computer self-efficacy. *MIS Quarterly*, *26*(4), 381-396.

Theodosiadou, D., Konstantinidis, A., Pappos, C., & Papadopoulos, N. (2017). Community of inquiry development in a blended learning course for in-service teachers. *Journal of Education and Practice, 8*(2), 62-66.

Thomson, A., Bridgstock, R., & Willems, C. (2014). "Teachers flipping out" beyond the online lecture: Maximizing the educational potential of video. *Journal of Learning Design, 7*(3), 67-78.

Tu, C.-H., & McIsaac, M. (2002). The relationship of social presence and interaction in online classes. *The American Journal of Distance Education, 16*(3), 131-150.

Tucker, W. T. (1965). Max Weber's "Verstehen." *The Sociological Quarterly, 6*(2), 157-165.

Tyler, C. L., & Tyler, J. M. (2006). Applying the transtheoretical model of change to the sequencing of ethics instruction in business education. *Journal of Management Education, 30*(1), 45-64.

U.S. Copyright Office. (2016). *Copyright law of the United States and related laws contained in title 17 of the United States code*. Retrieved from https://www.copyright.gov/title17/title17.pdf

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Towards a unified view. *MIS Quarterly*, *27*(3), 425-478.

Venkatesh, V., L. Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, *36*(1), 157-178.

Venkatesh, V., Thong, J. Y., & Xu, X. (2016). Unified theory of acceptance and use of technology: A synthesis and the road ahead. *Journal of the Association for Information Systems, 17*(5), 328-376.

Wang, S. (2015). Synchronous tools and technologies. In J. M. Spector (Ed.), *The SAGE encyclopedia of educational technology: Vol. 2* (pp. 688- 691). Thousand Oaks, CA: Sage Publications.

Ward, M. E., Peters, G., & Shelley, K. (2010). Student and faculty perceptions of the quality of online learning experiences. *International Review of Research in Open and Distance Learning, 11*(3), 57-77.

Wiebe, E., Durepos, G., & Mills, A. J. [Eds.] (2010). *Encyclopedia of case study research* (Vols. I and II). Thousand Oaks, CA: Sage Publications.

Wieling, M. B., & Hofman, W. H. A., (2016) The impact of online video lecture recordings and automated feedback on student performance. *Computers & Education, 54*(4), 992-998.

Wooley, D. R. (1994). PLATO: The emergence of online community. Retrieved from https://www.thinkofit.com/plato/dwplato.htm

World Wide Web Consortium (WC3), Henry, S. L. [Ed.]. (2008, June 29). *Multimedia accessibility FAQ.* Retrieved from https://www.w3.org/2008/06/video-notes

Xu, Y., Park, H., & Baek, Y. (2011). A new approach toward digital storytelling: An activity focused on writing self-efficacy in a virtual learning environment. *Journal of Educational Technology & Society, 14*(4), 181-191.

Yin, R. K. (1989). *Case study research: Design and methods*. London: Sage Publications.

Yin, R. K. (1994). *Case study research: Design and methods* (2nd ed.). Los Angeles, CA: Sage Publications.

Yin, R. K. (2003). *Applications of case study research.* Los Angeles, CA: Sage Publications.

Yin, R. K. (2013). Validity and generalization in future case study evaluations. *Evaluation, 19*(3), 321-332. Retrieved from https://doi.org/10.1177/1356389013497081

Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Los Angeles, CA: Sage Publications.

YouTube for Press. (n.d.). Retrieved February 03, 2018, from https://www.youtube.com/yt/about/press/

Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology, 9*(2, Pt.2), 1-27. Retrieved from http://dx.doi.org/10.1037/h0025848

Zaltman, G., & Duncan, R. (1977). *Strategies for planned change.* New York: John Wiley & Sons.

Zur, O., & Walker, A. (n.d.). On digital immigrants and digital natives: How the digital divide affects families, educational institutions, and the workplace. Online publication by Zur Institute. Retrieved January 21, 2018, from https://www.zurinstitute.com/digital_divide.html#equal

Appendix A

LoU Chart

Appendix E
Levels of Use (LoU) of the Innovation

SCALE POINT Definitions of the Levels of Use of the Innovation	CATEGORIES		
Levels of Use are distinct states that represent observably different types of behavior and patterns of innovation use as exhibited by individuals and groups. These levels characterize a user's development in acquiring new skills and varying use of the innovation. Each level encompasses a range of behavior but is limited by a set of identifiable Decision Points. For descriptive purposes, each level is defined by seven categories.	KNOWLEDGE	ACQUIRING INFORMATION	SHARING
	That which the user knows about characteristics of the innovation, how to use it, and consequences of its use. This is cognitive knowledge related to using the innovation, not feelings or attitudes.	Solicits information about the innovation in a variety of ways, including questioning resource persons, corresponding with resource agencies, reviewing printed materials, and making visits.	Discusses the innovation with others. Shares plans, ideas, resources, outcomes, and problems related to use of the innovation.
LEVEL 0 NONUSE: State in which the user has little or no knowledge of the innovation, has no involvement with the innovation, and is doing nothing toward becoming involved.	Knows nothing about this or similar innovations or has only very limited general knowledge of efforts to develop innovations in the area.	Takes little or no action to solicit information beyond reviewing descriptive information about this or similar innovations when it happens to come to personal attention.	Is not communicating with others about the innovation beyond possibly acknowledging that the innovation exists.
DECISION POINT A	Takes action to learn more detailed information about the innovation.		
LEVEL I ORIENTATION: State in which the user has acquired or is acquiring information about the innovation and/or has explored or is exploring its value orientation and its demands upon the user and the user system.	Knows general information about the innovation such as origin, characteristics, and implementation requirements.	Seeks descriptive material about the innovation. Seeks opinions and knowledge of others through discussions, visits, or workshops.	Discusses the innovation in general terms and/or exchanges descriptive information, materials, or ideas about the innovation and possible implications of its use.
DECISION POINT B	Makes a decision to use the innovation by establishing a time to begin.		
LEVEL II PREPARATION: State in which the user is preparing for first use of the innovation	Knows logistical requirements, necessary resources and timing for initial use of the innovation, and details of initial experiences for clients.	Seeks information and resources specifically related to preparation for use of the innovation in own setting.	Discusses resources needed for initial use of the innovation. Joins others in pre-use training, and in planning for resources, logistics, schedules, etc., in preparation for first use.
DECISION POINT C	Changes, if any, and use are dominated by user needs. Clients may be valued; however, management, time, or limited experiential knowledge dictate what the user does.		
LEVEL III MECHANICAL USE: State in which the user focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.	Knows on a day-to-day basis the requirements for using the innovation. Is more knowledgeable on short-term activities and effects than long-range activities and effects of use of the innovation.	Solicits management information about such things as logistics, scheduling techniques, and ideas for reducing amount of time and work required of user.	Discusses management and logistical issues related to use of the innovation. Resources and materials are shared for purposes of reducing management, flow, and logistical problems related to use of the innovation.
DECISION POINT D-1	A routine pattern of use is established. Changes for clients may be made routinely, but there are no recent changes outside the pattern.		
LEVEL IVA ROUTINE: Use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.	Knows both short- and long-term requirements for use and how to use the innovation with minimum effort or stress.	Makes no special effort to seek information as a part of ongoing use of the innovation.	Describes current use of the innovation with little or no reference to ways of changing use.
DECISION POINT D-2	Changes use of the innovation based on formal or informal evaluation in order to increase client outcomes. The changes must be recent.		
LEVEL IVB REFINEMENT: State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.	Knows cognitive and affective effects of the innovation on clients and ways for increasing impact on clients.	Solicits information and materials that focus specifically on changing use of the innovation to affect client outcomes.	Discusses own methods of modifying use of the innovation to change client outcomes.
DECISION POINT E	Initiates changes in use of innovation based on input of and in coordination with what colleagues are doing.		
LEVEL V INTEGRATION: State in which the user is combining own efforts to use the innovation with the related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.	Knows how to coordinate own use of the innovation with colleagues to provide a collective impact on clients.	Solicits information and opinions for the purpose of collaborating with others in use of the innovation.	Discusses efforts to increase client impact through collaboration with others on personal use of the innovation.
DECISION POINT F	Begins exploring alternatives or major modifications to the innovation presently in use.		
LEVEL VI RENEWAL: State in which the user reevaluates the quality of use of the innovation, seeks major modifications or alternatives to the present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self and the system.	Knows of alternatives that could be used to change or replace the present innovation that would improve the quality of outcomes of its use.	Seeks information and materials about other innovations as alternatives to the present innovation or for making major adaptations in the innovation.	Focuses discussions on identification of major alternatives to or replacements for the current innovation.

CATEGORIES			
ASSESSING	PLANNING	STATUS REPORTING	PERFORMING
Examines the potential or actual use of the innovation or some aspect of it. This can be a mental assessment or can involve actual collection and analysis of data.	Designs and outlines short- and/or long-range steps to be taken during process of innovation adoption, i.e., aligns resources, schedules, and activities, and meets with others to organize and/or coordinate use of the innovation.	Describes personal stand at the present time in relation to use of the innovation.	Carries out the actions and activities entailed in operationalizing the innovation.
Takes no action to analyze the innovation, its characteristics, possible use, or consequences of use.	Schedules no time and specifies no steps for the study or use of the innovation.	Reports little or no personal involvement with the innovation.	Takes no discernible action toward learning about or using the innovation. The innovation and/or its accoutrements are not present or in use.
Analyzes and compares materials, content, requirements for use, evaluation reports, potential outcomes, strengths, and weaknesses for purpose of making a decision about use of the innovation.	Plans to gather necessary information and resources as needed to make a decision for or against use of the innovation.	Reports presently orienting self to what the innovation is and is not.	Explores the innovation and requirements for its use by talking to others about it, reviewing descriptive information and sample materials, attending orientation sessions, and observing others using it.
Analyzes detailed requirements and available resources for initial use of the innovation.	Identifies steps and procedures entailed in obtaining resources and organizing activities and events for initial use of the innovation.	Reports preparing self for initial use of the innovation.	Studies reference materials in depth, organizes resources and logistics, and schedules and receives skill training in preparation for initial use.
Examines own use of the innovation with respect to problems of logistics, management, time, schedules, resources, and general reactions of clients.	Plans for organizing and managing resources, activities, and events related primarily to immediate ongoing use of the innovation. Planned-for changes address managerial or logistical issues with a short-term perspective.	Reports that logistics, time, management, resource organization, etc., are the focus of most personal efforts to use the innovation.	Manages the innovation with varying degrees of efficiency. Often lacks anticipation of immediate consequences. The flow of actions in the user and clients is often disjointed, uneven, and uncertain. When changes are made, they are primarily in response to logistical and organizational problems.
Limits evaluation activities to those administratively required, with little attention paid to findings for the purpose of changing use.	Plans intermediate and long-range actions with little projected variation in how the innovation will be used. Planning focuses on routine use of resources, personnel, etc.	Reports that personal use of the innovation is going along satisfactorily with few if any problems.	Uses the innovation smoothly with minimal management problems; over time there is little variation in pattern of use.
Assesses use of the innovation for the purpose of changing current practices to improve client outcomes.	Develops intermediate and long-range plans that anticipate possible and needed steps, resources, and events designed to enhance client outcomes.	Reports varying use of the innovation in order to change client outcomes.	Explores and experiments with alternative combinations of the innovation with existing practices to maximize client involvement and to optimize client outcomes.
Appraises collaborative use of the innovation in terms of client outcomes and strengths and weaknesses of the integrated effort.	Plans specific actions to coordinate own use of the innovation with others to achieve increased impact on clients.	Reports spending time and energy collaborating with others about integrating own use of the innovation.	Collaborates with others in use of the innovation as a means for expanding the innovation's impact on clients. Changes in use are made in coordination with others.
Analyzes advantages and disadvantages of major modifications or alternatives to the present innovation.	Plans activities that involve pursuit of alternatives to enhance or replace the innovation.	Reports considering major modifications or alternatives to present use of the innovation.	Explores other innovations that could be used in combination with or in place of the present innovation in an attempt to develop more effective means of achieving client outcomes.

Appendix B

Informed Consent

Gardner-Webb University IRB
Informed Consent Form- Stages of Concern

Title of Study
Understanding Video Adoption: An Insider Action Researcher's Case Study Using the Concerns Based Adoption Model to Facilitate a Community of Inquiry in Online Courses

Researcher
Emily Robertson, Doctoral Candidate, School of Education

Purpose
The purpose of the overall research study is to determine how adoption and implementation of video in online courses on a university campus be described. The purpose of this portion of the study is to identify and describe concerns expressed by faculty online instructors related to adopting and implementing video in online courses.

Procedure
What you will do in the study: Participants will be asked to complete the 35-question, Likert style Stages of Concern Questionnaire (SoCQ75) to determine their current stage of concern about video in online courses. The quantitative instrument will produce a concerns profile for each individual. Results will be used to determine both individual concerns and compared to the participant group. The electronic questionnaire does not allow users to skip questions, but may be discontinued at any time by exiting the questionnaire or closing the browser.

Time Required
It is anticipated that the SoC Questionnaire will require about 15 minutes of your time.

Voluntary Participation
Participation in this study is voluntary. Participating in this questionnaire is not related to your employment with Gardner-Webb University in any capacity. You have the right to withdraw from the research study at any time without penalty. If you choose to withdraw, you may request that any of your data which has been collected be destroyed unless it is in a de-identified state.

Confidentiality
The information that you give in the study will be handled confidentially. The concerns reported by participants will not be identified or paired with a specific individual, unless the participant shares their results or provides the researcher with a unique word or phrase to identify their questionnaire results. SoCQ results will be stored on the American Institutes for Research (AIR) servers and accessed by administrator password credentials. Participants will not be required to create an account to complete the questionnaire, or asked to provide any identifying information. When the study is completed and the data have been analyzed, the data will be destroyed. The findings of this study will be reported and published as part of the researcher's dissertation. Your name will not be used in any report or publication.

Gardner-Webb University IRB
Informed Consent Form- Levels of Use

Title of Study
Understanding Video Adoption: An Insider Action Researcher's Case Study Using the Concerns Based Adoption Model to Facilitate a Community of Inquiry in Online Courses

Researcher
Emily Robertson, Doctoral Candidate, School of Education

Purpose
The purpose of the overall research study is to determine how adoption and implementation of video in online courses on a university campus be described. The purpose of this portion of the study is to identify and describe actions and behaviors reported by faculty online instructors related to adopting and implementing video in online courses.

Procedure
What you will do in the study: Participants will be asked to respond to interview questions about their current actions and behaviors using video in online courses. Results will be used to determine an overall level of use rating profile. Participants may choose to skip any question that causes discomfort and stop the interview at any time.

Time Required
It is anticipated that the LoU Interview will require about 1 hour of your time.

Voluntary Participation
Participation in this study is voluntary. Participating in this interview is not related to your employment with Gardner-Webb University in any capacity. You have the right to withdraw from the research study at any time without penalty. You also have the right to refuse to answer any question(s) for any reason without penalty. If you choose to withdraw, you may request that any of your data which has been collected be destroyed unless it is in a de-identified state.

Confidentiality
Data will be collected through an audio recorded focused interview. The actions and behaviors reported by participants during the interview will be handled confidentially. Participant responses will be audio recorded and shared with a second rater in order to determine an overall LoU rating. Audio files will be stored and shared electronically with a password protected folder. No participant names will be used when sharing audio recordings. When the study is completed and the data have been analyzed, the data and audio recordings will be destroyed. The findings of this study will be reported and published as part of the researcher's dissertation. Your name will not be used in any report or publication.

Appendix C

Agreement for Permission to Republish-Print and Electronic

AIR®

AMERICAN INSTITUTES FOR RESEARCH®

AGREEMENT FOR PERMISSION TO REPUBLISH — PRINT & ELECTRONIC

Please fill out, sign, and return copy to SEDL-AIR, Attn: Helen Sacco; 1120 E. Diehl Rd, Suite 200; Naperville, IL 60563; hsacco@air.org.

American Institutes for Research (hereinafter called the "Grantor") grants the undersigned, Emily Robertson, PhD student, Gardner-Webb University (hereinafter called the "Applicant"), nonexclusive license to reprint the following (hereinafter called "the Selection"):

Titles and Credit Lines:

American Institutes for Research. (n.d.). *Concerns-based adoption model*. Washington, DC: Author. Retrieved from http://www.sedl.org/cbam/

George, A. A., Hall, G. E., & Stiegelbauer, S. M. (2006). *Measuring implementation in schools: The Stages of Concern Questionnaire*. Austin, TX: SEDL.

Hall, G. E., Dirksen, D. J., & George, A. A. (2013). *Measuring implementation in schools: Levels of use*. Austin, TX: SEDL. Retrieved from http://www.air.org/sites/default/files/CBAM-Levels-of-Use.pdf

The undersigned agrees:

1. To give full credit in every copy printed; on the copyright page or as a footnote on the page on which the Selection begins; or, if in a magazine or a newspaper, on the first page of each Selection covered by the permission, exactly as indicated in this Agreement.
2. To make no deletions from, additions to, changes to, or electronic manipulation of the content without the written approval of the Grantor.
3. That permission granted herein is nonexclusive and nontransferable.
4. That permission applies, unless otherwise stated, solely to use the Stages of Concern Questionnaire, Concerned-Based Adoption Model, and Levels of Use Branched Interview and Rating Chart in a dissertation titled, *Understanding video adoption: An insider action researcher's case study using the Concerns-Based Adoption Model*, in all languages and forms and subsequent revisions in the United States and internationally.
5. That translation into another language shall be specifically approved as a use in Clause 4 above and preserve a sufficient amount of the original language and context to convey the author(s)' intended meaning, thus enabling an independent assessment of the appropriateness of the translation.
6. That the permission shall automatically terminate at the end of the business day of October 30, 2020.
7. This permission does not extend to any copyrighted material from other sources that may be incorporated within the Work in question—nor to any diagrams, illustrations, charts, or graphs—unless otherwise specified.
8. That the Work containing Grantor's Selection may be reproduced in Braille, large type, and sound recordings provided no charge is made to the visually handicapped.
9. That unless the agreement is signed and returned within three months from the date of issue, the permission shall automatically terminate.

Date: 8/4/2017

Signature of Applicant: Emily G. Robertson

Printed Name: EMILY G. ROBERTSON

Address: 113 BLUE SKY CIRCLE SHELBY, NC 28152

Permission on the foregoing terms American Institutes for Research

Date: August 4, 2017

By: Helen Sacco

Appendix D

Participant Email

Opportunity to support Emily's dissertation research!

Emily Robertson
Mon 4/23, 5:03 PM

Reply all |

Sent Items

SoC Informed Consent I...
48 KB

Show all 1 attachments (48 KB) Download Save to OneDrive - Gardner-Webb University

Dear colleagues,

You have been selected to participate in a questionnaire, for my dissertation research, based on your full-time teaching status, and assignment as the instructor-of-record in an online course taught in the 2016-2017 academic year. Should you choose to participate in this study, please refer to the attached Informed Consent Form outlining the purpose of this study, your rights as a participant, and how your data will be handled and reported. A link to the questionnaire is posted below.

This is Phase 2 of my dissertation research, and is not related to my employment with Gardner-Webb University as the Director of Digital Learning. Furthermore, participating in this study is NOT related to your employment with Gardner-Webb University in any capacity. A full description of this phase of research and informed consent is attached.

If you are willing to participate in the 15-minute questionnaire, please click on the link posted below. Participants must confirm their participation in this phase of the study by selecting the Voluntary Consent by Participant checkbox at the bottom of the Informed Consent section of the questionnaire. The electronic questionnaire does not allow users to skip questions, but may be discontinued at any time by exiting the questionnaire or closing the browser.

If you have any questions about the study or research results, please contact Emily Robertson, (704) 406-3249 or erobertson@gardner-webb.edu.

Link to questionnaire: https://www.sedl.org/concerns/index.cgi?sc=2u7k9u
The questionnaire will be available until April 30, 2018.

Thank you for your consideration,

Emily Robertson
Doctoral Candidate, School of Education
erobertson@gardner-webb.edu
P (704) 406-3249 | F (704) 406-3540

Appendix E

System Security Features

System Security Features

1. The SoCQ Online administration site that you will use to customize your SoCQ Online survey and view data has a password-protected logon, and you can set your own password for added security after logging on to the system.
2. The data is collected and housed on AIR's Web server which has processes in place to secure the web server and access to the database containing SoCQ Online data.
3. The online forms used to collect the SoCQ Online data have been tested for security (for instance, we have tested to ensure other SoCQ Online admins cannot access your data, even if they try to manipulate the system by changing data passed by form fields in the survey URLs).
4. To support disaster recovery ability, the SoCQ Online database is backed up nightly to a secure server accessible only by AIR's network administrator.
5. The SoCQ Online database is accessible by AIR technical staff only for support and maintenance purposes, and those staff have entered into and are bound by a confidentiality and nondisclosure agreement with AIR.
6. The SoCQ Online does not associate individual SoCQ Online responses with the IP address of the computer used to submit the data.
7. The SoCQ Online does not associate SoCQ Online responses with individual user identities. However, you can optionally add a question that asks the user to enter a unique ID in order to track who has or has not completed the survey. You could give them a unique string like "AF753" where the code would allow many possibilities and so it would be hard for an individual to guess valid codes and submit multiple entries. Or, you could select an existing unique user ID, like an email address.

8. The SoCQ Online data you collect will be stored on the AIR server until you cancel your AIR SoCQ Online account or request that it be deleted. Your data will not be shared with any 3rd parties, and it will not be viewed or used by AIR without your permission.
9. If you purchase additional surveys at a later date, AIR will add them to your existing account. Your unused surveys remain there for you to use at any time. They do not expire, so you will have access to them through 2017 and beyond -- until you request that we remove your reports from the system.
10. The SoCQ Online site utilizes SSL encrypted connections to ensure confidentiality of the data during survey submissions and while reading reports using the administrative site.

Appendix F

LoU Branched Format

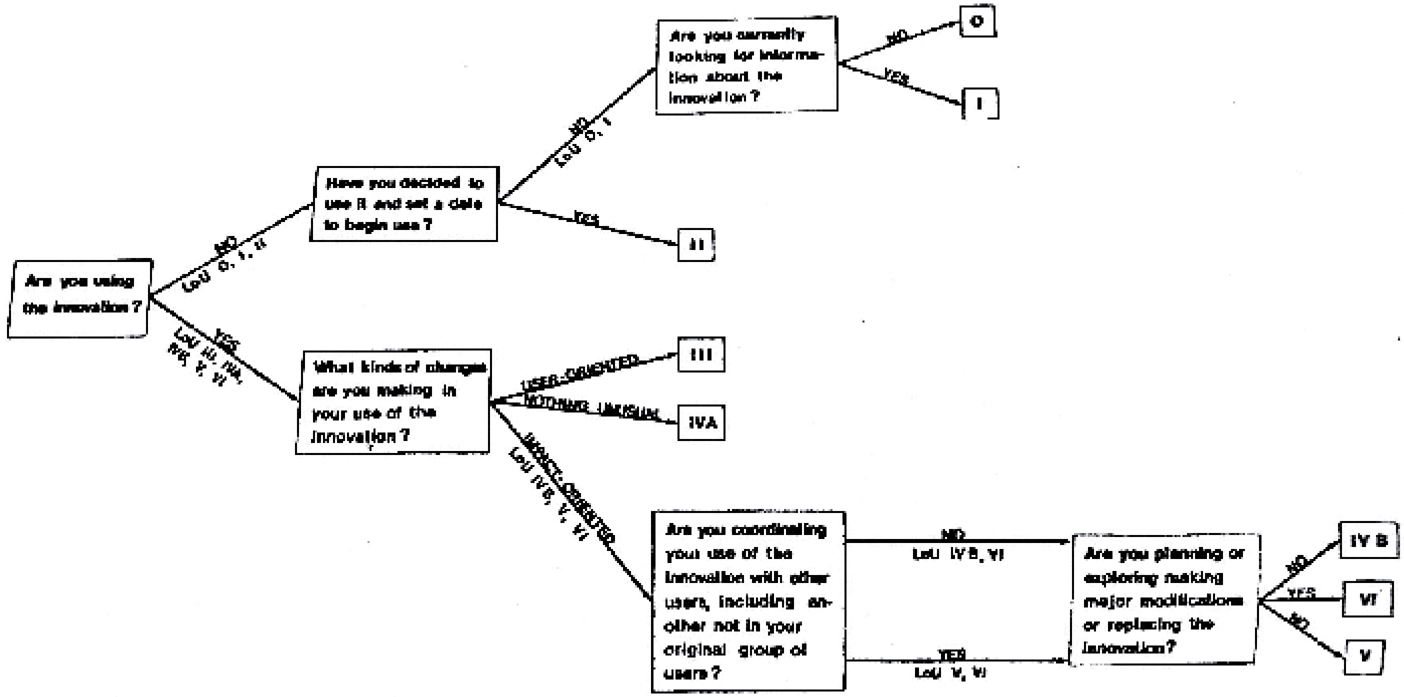
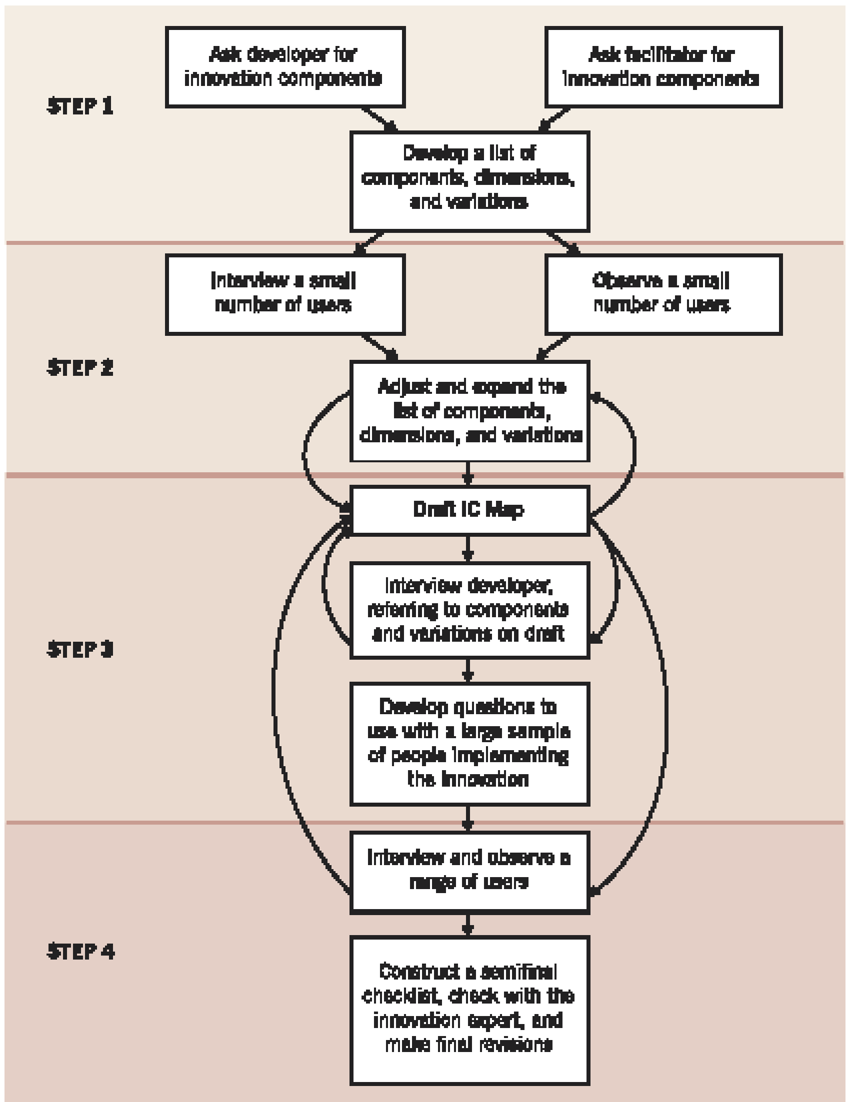


FIGURE 3. Overview of Branching Format of the LoU Interview

Appendix G

IC Mapping Process

Figure 3.1. Ladder or Scaffolding of the Steps to Construct an IC Map



Appendix H

Consent Form

Gardner-Webb University IRB
Informed Consent Form- Innovation Configuration

Title of Study
Understanding Video Adoption: An Insider Action Researcher's Case Study Using the Concerns Based Adoption Model to Facilitate a Community of Inquiry in Online Courses

Researcher
Emily Robertson, Doctoral Candidate, School of Education

Purpose
The purpose of the overall research study is to determine how adoption and implementation of video in online courses on a university campus be described. The purpose of this portion of the study is to identify and describe the fidelity of video adoption and implementation in online courses based on the Community of Inquiry model.

Procedure
What you will do in the study: Participants will be asked to select two of their online courses for the researcher to review and determine fidelity of video adoption and implementation based on the Community of Inquiry model. The instructor will use direct observation to record findings of social presence, instructor presence, and content presence through the use of video.

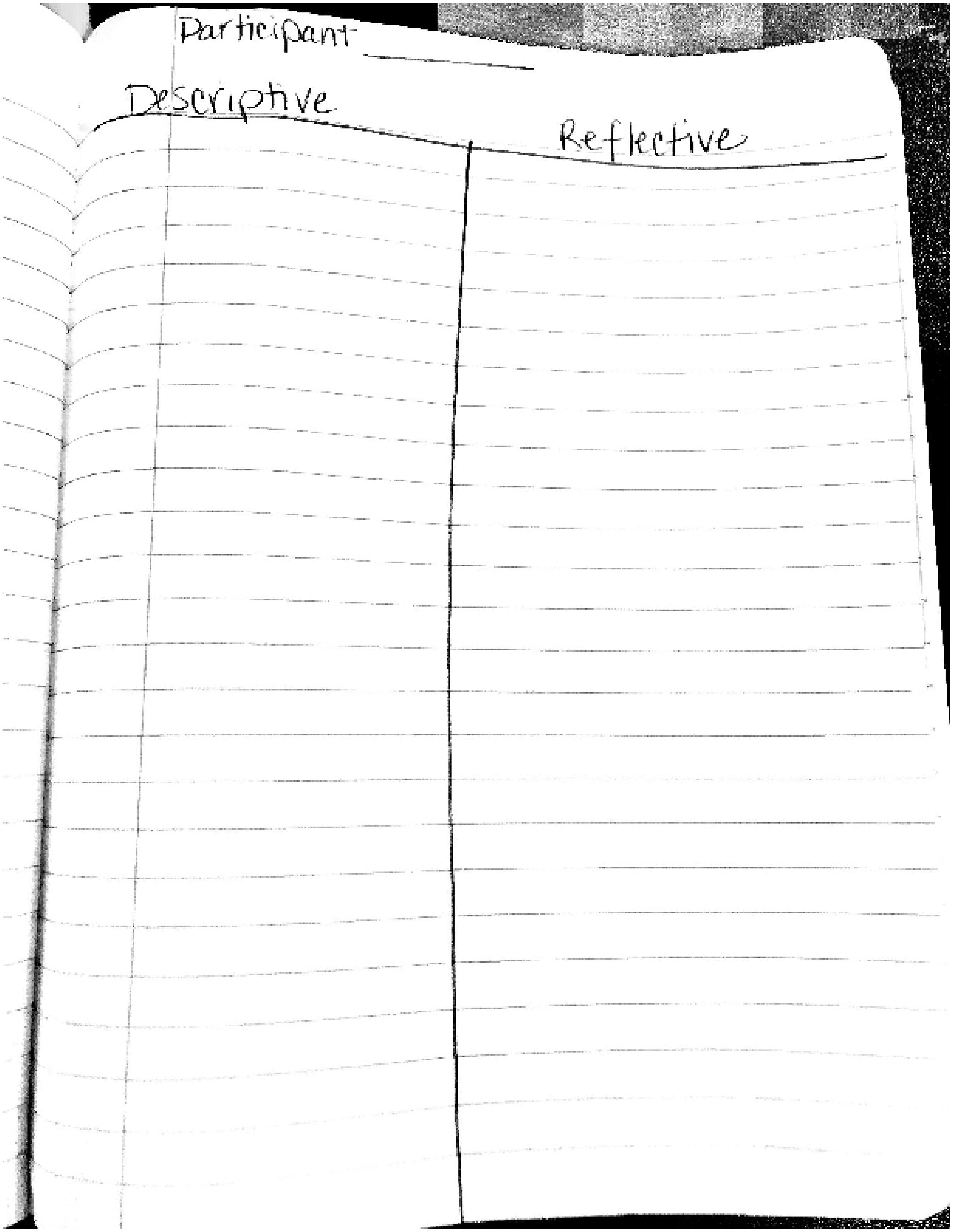
Time Required
It is anticipated that the innovation configuration observations will not require any amount of your time.

Voluntary Participation
Participation in this study is voluntary. Participating in this observation is not related to your employment with Gardner-Webb University in any capacity. You have the right to withdraw from the research study at any time without penalty. You also have the right to request that the observation of your course(s) cease for any reason without penalty. If you choose to withdraw, you may request that any of your data which has been collected be destroyed unless it is in a de-identified state.

Confidentiality
Observational data of video usage and community of inquiry presence will be recorded in a written journal and transferred to digital document. Observational notes will not include any course identifiers such as course name, code, or refer to any specific course content/subject matter, which could connect the instructor and/or department/program with observations made about the course. When the study is completed and the data have been analyzed, the data and will be destroyed. The findings of this study will be reported and published as part of the researcher's dissertation. Your name and course identifiers will not be used in any report or publication.

Appendix I

Observational Protocol Form


Participant
Descriptive
Reflective

Participant ______

Video	Type	Source	SP	CP	TP
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					