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PARTICIPANT SATISFACTION OF AN ONLINE LEARNING ACADEMY AS AN APPROACH TO DEVELOPING PHYSICIAN LEADERS

By

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A DISSERTATION

Submitted to the faculty of the Graduate School of the Creighton University in Partial Fulfillment of the Requirements for the degree of Educational Doctorate in Leadership.

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Abstract

This convergent parallel study explored factors that contribute to participant satisfaction of an online leadership development academy at a national physician company. Executives and company leaders recognized the importance of educating their leaders and established a virtual leadership academy (VLA) to offset the heavy cost-burden associated with in-person training, take advantage of the availability of new training modalities, and deliver relevant education to organizational leaders. A mixed-methods design used an online survey for quantitative research and a focus group of participants for qualitative research to determine if online learning was a satisfactory model for educating physician leaders. Analysis of both data strands suggested that physician leaders found an online, virtual academy a satisfying and acceptable way to learn and encouraged the continuation of the approach. The study also identified several design features which seemed to contribute to the participants’ satisfaction; these included relevant content, quality speakers, brevity, the use of video, and the inclusion of interactivity.

Keywords: physician, leadership development, online, learning, development, virtual, education
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CHAPTER 1. INTRODUCTION

Background of the Study

Physician leaders are a critical component of every healthcare organization’s ability to carry out its stated mission and goals. While physicians are a highly educated and intelligent group of individuals, the skills set and knowledge that enable them to become strong clinicians are not necessarily the same that enable them to be effective leaders (Rice, 2009; Stoller, 2008). They must study, learn, and commit to a process for developing leadership and management skills and abilities. Leadership development programs which address such proficiencies have become ubiquitous in corporate America, and physician leaders have participated in various education programs on the subject (Rice, 2009). Leaders and educators at many organizations, however, face the challenge of providing appropriate and effective methods for developing the competencies of their physician leaders in the midst of budget limitations, time constraints, and competing agendas (Stoller, 2008).

Physicians live busy lives and are often pulled in many different directions. The recently enacted healthcare reform law has contributed to an already frenetic industry. Even well intentioned physicians have difficulty finding time to immerse themselves in anything new such as a leadership course. Educators must compete with this growing trend. In addition to the time factors and busy schedules, the cost to assemble physicians in one location at a given time is significant. One large physician company estimated a cost of $150,000 to assemble its top level leaders in a centralized location (TeamHealth VLA Guide, 2013). How can executives and educators compete with these factors and convince physicians of the significant role leadership plays in organizational success?
Caffarella (2002) suggested that education, including leadership development, is only effective if participants find it meaningful and relevant to their personal or professional lives. Physician leaders must recognize the need and desire to learn how to be a results-based and effective leader, even if they were simply thrust into the position as is often the case. Reflecting on this need and desire is the foundation for a successful leadership development program (Caffarella, 2002; Hewes & Patterson, 2012).

Leadership & Leadership Development

Bennis (1989) suggested that there are likely more definitions of leadership than there are leaders. Applying the various definitions of leadership such as the “facilitation of change through the collaboration of others” provides guidance on what skills and topics physician leaders must learn in order to be successful as leaders. Leaders inspire, coach, and guide others toward a common goal, and they are the lifeblood of a successful organization. The discipline of medicine consists of a great deal of natural science while leadership incorporates much of the social sciences and requires a different skills set. Physicians are scientists by nature. Developing an effective physician leader requires a blending of natural scientific abilities with the “softer” skills and competencies of leadership such as communication, conflict management, change management, strategic planning, coaching, mentoring, decision-making, and problem-solving (Stoller, 2008).

Large companies typically have some type of formal program in place to develop their leaders. Such programs are conducted in a variety of formats and delivery models. According to the American Society of Training and Development (ASTD, 2012), the vast majority of leadership development programs fail mostly due to poor planning or lack of adherence to the needs of participants. To counteract the daunting odds of implementing
a successful program, educators have built programs with careful attention to the applicability and relevance of topics. A successful program must consist of more than a catchy name or good intentions. The best programs address real-world problems in a professional manner that considers the needs of the end-users and incorporates Knowles’ (1990) adult learning principles.

**Technology & Online Learning**

The proliferation of technology and the versatility of online communication have created an opportunity for company leaders and educators to deliver information in new and creative ways (Koegel, 2010). While there are up to 30 million presentations given daily, the number given virtually has grown exponentially (Koegel, 2010; Salvoy, Proctor, & Salvendy, 2008). Over 90% of human resources (HR) training professionals reported a planned increase in the use of virtual training for their employees (Pace, 2013). The disciplines of education and technology are both growing rapidly, and the two are intersecting in significant ways (Frost & Sullivan, 2013). Approaches range from a basic online webinar to a highly immersive virtual training environment (Frost & Sullivan, 2013). Modern technologies have been used to train individuals in an array of industries including automotive manufacturing, police, finance, and acute-care medicine.

Some physician organizations have incorporated the use of technology into their learning strategy for ongoing clinical education. Few have explored the use of technology as a means for developing physician leaders. Youngblood et al. (2008) demonstrated that virtual world simulation can enhance learning outcomes when teaching trauma care. The study cited flexibility, practicality, and scalability of an online learning environment as significant benefits for such a platform (Youngblood et al., 2008). The
challenge is determining if these same attributes apply to a program for teaching leadership competencies as well as clinical topics.

Company leaders and educators must determine the participant’s acceptance of learning a topic virtually, their degree of satisfaction with the approach, and their perceptions of the effect remote classes have on their learning. Physicians by nature are not collaborators but, until more recently, typically learn in a group setting (Stoller, 2008). Program planners, those professionals responsible for coordinating education opportunities, must explore how a non-traditional setting compares with the more traditional classroom model in which students are among their peers, in front of the instructor, and can ask questions live at any time. Even in large lecture halls, attendees feed off of the energy in the room. Despite the proliferation of the use of technology in every aspect of life including learning, planners should consider how well virtual programs can replicate the in-person experience and if such an effort is efficacious.

This study was an investigation of participant perceptions on the use of an online learning approach for developing physician leaders. Advances in technology allow learning to occur at a distance from anywhere in the world enabling participants to take part in education programs over the internet using a computer or any device with a browser (GoToWebcast, 2013; Ryan et al., 2007). This study explored how applying adult learning principles and research from the latest literature on optimizing multimedia learning affects student’s perception of their learning and satisfaction.
Statement of the Problem

In the past, healthcare organizations and physician companies have educated their leaders with various teaching methods in a traditional classroom setting. With the rising cost of such education coupled with the increase in the number of affordable alternative approaches for delivering content, some organizations are conducting leadership development programs in an online format. It is unclear if participants find this modality satisfactory as an approach to learning. Some are creating programs in-house while others are outsourcing the process to one of many third party vendors.

Significance of the Study

The information learned from this study is beneficial in many ways. First, it provided insight into whether learning remotely is acceptable to physician participants. Second, it measured participants’ perception of how well they learned material. Third, this study explored the perceptions from physicians on what features of an online learning approach for leaders enhance learner acceptance and satisfaction of using this teaching format. A fourth benefit of this research study is the enabling of healthcare leaders to explore a new approach to educating physician leaders that might also apply to non-physician leaders as well.

There is a great deal of literature on the topic of leadership development and a growing body of work on online learning, but there is a limited literature on the combined topic of virtual leadership education for physicians. The challenge for researchers lies in exploring how these various components tie together while identifying any potential benefits, trade-offs, or disadvantages of doing so (Koegel, 2010). This research study analyzed a set of personal interviews, relevant research, and online surveys to provide
insight into the perceptions on the use of an online learning method for developing physician leaders.

Findings of this study may be incorporated into existing educational programs for physicians to enhance their overall acceptance and effectiveness. In addition, the results may be applicable to the process for developing other healthcare leaders including nurses, administrators, and paramedics. How essential didactic material, an effective technology platform, and optimal presentation design are woven together to create a program might be of benefit to leaders in other industries as well such as business or education.

Purpose of the Study

The purpose of this mixed methods study was to determine the degree of participant satisfaction of an online academy as an approach to developing physician leaders, referred to as a virtual leadership academy (VLA) and is defined as a program for developing leaders and managers presented in an online format over the internet. An analysis of group and individual feedback on their level of satisfaction with the VLA and its perceived contribution to their role as a leader is included in the narrative portion of the study. Results from a quantitative survey provide additional understanding of what features of a VLA individuals preferred. Lastly, this project will discuss a set of advantages and disadvantages of a VLA versus traditional an in-person setting.

Research Question

What is the level of participant satisfaction of an online learning academy as an approach to developing physician leaders?
Research Rationale

As the healthcare industry evolves, the features of the Patient Protection and Affordable Care Act (PPACA) are fully implemented, demand for quality increases, and margins tighten, healthcare and physician organizations must identify cost-effective methods for creating effective organizational leadership (PPACA, 2010). Physician leadership competencies are key elements in contributing to an organization’s overall success and effectiveness. Organizations are now recognizing that developing leadership behaviors is not an optional exercise. Stoller (2008) cited four factors that contribute to the rationale for developing physicians. They are complexity of healthcare, physicians’ disinclination to collaboration and followership, tradition of promoting physicians based on their clinical ability, and the general inattention to training physicians. Building on Stoller’s (2008) work, company presidents and chief executive officers (CEOs) must embrace education for leaders at all levels in the organization, and they must do so within the parameters of their own cost structure and limitations. The average hospital margin in 2012 was 7%, and many operate with negative finances, so there is little flexibility for error (Selvam, 2013). Many CEOs, however, recognize the important investment that developing leaders has become. An online approach could meet the demand for educating physician leaders while doing so in a cost-effective manner.

As more executives recognize leadership as integral to organizational performance and success, more will consider various approaches to developing leaders including through online education. Research from Ebbinghaus (Nelson, 1985) suggested that participants forget nearly 80% of what they learned in a classroom. How this “forgetting curve” affects online learning is unclear, but it implies the importance of
delivering content that can compete against outside distractions and satisfy the learner. Studying these effects was essential to providing meaningful and relevant content.

**Method of Research**

The research design of this study was based on the experience at one large physician company that created a virtual academy to exploit the advantages of technology and a perceived interest from participants to engage in a new learning approach. Cameras recorded speakers who presented key topics in a lecture with PowerPoint™ format. Through the use of internet-based software, an audiovisual recording of an education event was “broadcast” and then made available on-demand. A video of the presenters appeared on the left side of the screen, the slides were on the right, and a chat box for questions appeared on the lower part of the screen.

During the presentation, the researcher employed several features to capture and maintain audience interest. First, the content presented was of perceived value to the attendees. Knowles (1990) stated that presenting material that is relevant and meaningful is key to effective transfer of learning. A second tactic used was the placement of a secret word that attendees were to watch for and document in order to receive credit for watching the event (Koegel, 2010). Audience polling was also used to promote interaction and maintain interest. A final item used was the online question-and-answer chat box. Individuals could ask questions by typing them into the box at any time. Facilitators had the option of answering the question privately or publicly during the live broadcast. If a participant asked a question while watching the recorded version, the question would be sent by email for a response. At the conclusion of the presentation, an online survey gauged perception, interest, and satisfaction with the delivery model.
The virtual academy built on an earlier pilot phase, applied lessons learned, and followed a similar design and structure. The second version used a different vendor with more features capable of enhanced customization. It also took full advantage of capabilities of the company’s new in-house videographer. The updated approach enabled participants to watch the session asynchronously and on-demand wherever they are in the world as long as they have access to the internet. The new version was slightly shorter than the first at 45 minutes in length, used additional in-class polling, incorporated outside video clips, applied video edits and relevant graphics, and embedded survey questions directly into the presentation link. The results of the survey served as the foundation of the study and sought to answer the stated research question.

This mixed methods study incorporated aspects of quantitative and qualitative research in a concurrent manner to explore the VLA process. The qualitative aspects included a set of interview questions to gain a deeper understanding of a group’s perception of the VLA (Bryant, 2004). The study attempted to provide insight into the underlying motivations of individuals’ perception of the concept. Roberts (2010) explained that qualitative research is based on “the philosophical orientation called phenomenology which focuses on people’s experience from their perspective” (p. 143). This approach created a holistic view of the topic by going into the field to ask questions and used words to describe people’s actions, behaviors, perceptions, and opinions (Roberts, 2010).

The quantitative aspects of the study sought to quantify the perceptions of participants and instructors by adding the concept “to what degree” to the research
questions (Bryant, 2004). The study gathered information from subjects through the use of an online survey to collect data regarding the degree of satisfaction of the participants.

**Definition of Terms**

For the purpose of this study, the following operational definitions were used:

*ASTD*: American Society of Training and Development; an international professional association dedicated to the training and development field (ASTD, 2013).

*ACEP*: American College of Emergency Physicians; a national organization that supports quality emergency care and promotes the interests of emergency physicians and their patients (ACEP, 2013).

*Browser*: A computer program used for accessing information on a network, as in the World Wide Web (internet) (Merriam-Webster Dictionary, 2013).

*Competency*: An ability to perform that is required by a job (Stolovitch & Keeps, 2012).

*Emergency Medicine*: A branch of medicine concerned with the prompt diagnosis and treatment of injuries or trauma or sudden illness (princeton.edu, 2013).

*Leadership*: The process by which individuals in an organization facilitate change in collaboration with others toward a common goal (Author’s Definition, 2013).

*Leadership Development*: Any educational activity that contributes to the knowledge, skills, or abilities of a leader (Author’s Definition, 2013).
**Online (or Virtual) Learning:** Employing information and communication technologies to deliver instruction such as the internet (www.uen.org/distance_ed/glossary.shtml, 2013).

**Physician Leader:** A medical doctor who has assumed additional responsibilities for their organization in a formal management role (Author’s Definition, 2013).

**PPACA:** Patient Protection and Affordable Care Act of 2010; A piece of federal legislation that reconstructs the American healthcare system (www.healthinsurance.org, 2013).

**Program Planners:** Those professionals responsible for developing coordinating education opportunities.

**Satisfaction,** defined as a range of opinions regarding a learning experience

**Specialty:** Any branch within the field of medicine focused on a specific patient population (Author’s Definition, 2013).

**SurveyMonkey™:** An American company that enables users to create their own web-based surveys (Adapted from SurveyMonkey.Com, 2013).

**Virtual Leadership Academy:** a program for developing leaders and managers presented in an online format over the internet.
Assumptions

The underlying assumption of this study was that researchers were able to determine the perceptions and attitudes of participants regarding online leadership education by interviewing and through an online survey. It is further assumed that participants provided their honest feedback; that participants were physicians and therefore well-educated; that physicians as typical adult learners have limited attention spans (Koegel, 2010); that leaders are interested in learning; and that instructors are interested in exploring the benefits and potential use of an online approach. A final assumption is that planners had the option to use a variety of methods to deliver leadership education including in-person, online, or a blended model.

Delimitations & Limitations

A delimitation of this study is that the participants were limited to emergency physicians within one company. This study did not consider the perceptions, reactions, or input from physicians from others specialties (such as radiology or cardiology) as their education, background, and organizations vary greatly.

A second delimitation is related to the timing of the study. Participants were experiencing a great deal of change in their organization and within the healthcare industry which may affect their perceptions and outcomes of this study.

A third delimitation is the type of technology used for delivering educational content virtually. As technology continues to evolve at rapid rate, applying a different mode of delivery may affect the study results.

One limitation to the study was related to the sample size of the online survey. The study was limited to those individuals who completed the survey or participated in
the interview. Another limitation was the participants having knowledge that their input was being captured, studied, and included in a research study. A third limitation acknowledged that self-reported data in a survey or interview cannot be independently verified; their input must be taken at face value. A fourth limitation is potential participant bias such as selective memory or exaggeration.

Dissertation Summary

Healthcare and physician organizations are experiencing a tumultuous period as the politicians and pundits scrutinize the industry. Many organizations have recognized and embraced leadership development as essential to their operational success. Research studies have explored the importance of leadership, leaders, and their development. Meanwhile, modern technology now provides a viable and affordable method for delivering content relevant to leadership development in an online format. This study focused on participant satisfaction with one approach for developing leaders in online format that incorporated adult learning principles and applied research. The introduction in Chapter One provided background, context, and overview of the problem along with its significance to the healthcare industry. The Review of Literature in Chapter Two summarizes research on the topics of physician leaders, leadership, training, and virtual education. The Methodology in Chapter Three explains the mixed method approach used as the basis for this research. The Results Chapter Four outlines and analyzes data received. Finally, Chapter Five outlines the conclusions that can be applied based on the results obtained.
CHAPTER 2. REVIEW OF LITERATURE

Introduction & Method for Literature Review

This chapter discusses the method for the literature review, the theoretical basis for the research study, and the literature related to the set of topics that contributed to this study of participant satisfaction of an online learning academy as an approach to developing physician leaders. These topics include leadership, leadership development, competencies, physician leadership, online learning, multimedia learning, and adult learning principles. A computer search on these topics was conducted using Google, the Creighton Reinert Library, EBSCOhost, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and MEDLINE. The following key words were used: leadership development, management development, physician leadership, leadership academies, virtual learning, physician learning, online learning, virtual leadership academy, satisfaction with online learning, and adult learning principles. Various combinations of these terms contributed to the expansion of the results. The literature map depicted in Figure 1 depicts the review process, the relationship among the topics, and how they outlined the structure of this chapter.

Figure 1. Literature map
Theoretical Basis

Malcolm Knowles’s (1990) Theory of Adult Learning formed an early basis for this research study. His theory, known as *andragogy*, is defined as the “art and science of helping adults learn” (p. 43). Knowles described self-directed learning as a process “in which individuals take the initiative, with or without the help of others” for identifying their learning needs and enacting a plan for addressing them. Knowles suggested that adult learners are much more likely to retain knowledge if the topic is relevant with a clearly defined need. That need serves as the premise upon which participants can build and absorb information. Findings from Knowles (1990) contributed to the creation of an online learning event for leaders which are at the core of this study and discussed in greater detail later in this Chapter.

Relevance of Leadership

Several researchers have identified leadership as the cornerstone of success of major corporations and institutions (Cherry, Davis, & Thorndyke, 2010). Without competent and educated leaders at every level in the organization, none are likely to succeed in the long-term. Leaders chart the course of an organization, inspire trust, build a team, and guide groups of individuals toward a common goal (Senge, 1990; Ulrich, Zenger, & Smallwood, 1999). A sense of urgency exists for institutions to ensure that their leaders are competent and well educated to carry out their many responsibilities.

Maxwell (2006) wrote that leadership is “influence” and suggested most effective leaders are those who are capable of leading themselves, their subordinates, and their peers while supporting senior executives. Kouzes and Posner (2002) implied that a great deal of what is taught to leaders is incorrect but emphasized the capability of most
individuals to learn the skills, behaviors and attitudes required to become an effective leader.

Leadership author Warren Bennis (1989) devoted considerable time to describing the differences between the concepts of leadership and management. Among his descriptions, Bennis (1989) suggested that leaders create vision, maintain a broad view of the organization and its direction, and innovate with new ideas. Conversely, he described managers as administrators who focus on systems and maintenance. Bennis (1989) encouraged companies to develop the enthusiastic, curious, and energetic leaders that will successfully guide organizations into the future.

Lowney (2005) suggested that leadership is a calling beyond oneself and an ongoing process; it is an invitation for a person to step forward and be an advocate and facilitator of change. True leaders make a difference in the world. Thus, quality leadership is integral to organizations and contributory to their success. This is certainly the case in physician practices and other healthcare organizations that can be characterized as fast-paced, complex, volatile, and unpredictable systems (Faulkner, Lynch-Cartine, & Morris, 2013).

Defining Leadership

Bennis (1989) suggested that there are likely more definitions for leadership than there are leaders. An internet search of “leadership definition” yields over 98 million responses (Google, 2013). Some definitions are built around outcomes such as the achievement of a stated goal while others are loftier and less specific (Ulrich & Smallwood, 2007). The Jesuits rarely used the word leadership but instead defined it by role-modeling leadership in their behavior (Lowney, 2005). It is critical for an effective
leader to go beyond the words of a definition. Their early teachings encouraged leaders to reflect often and live their values as optimal ways to align, motivate, and inspire people (Lowney, 2005). Defining leadership in a manner around which stakeholders can coalesce is challenging but helpful in identifying the primary goal of what educating leaders is attempting to achieve.

**Competent Leadership for the Greater Good**

The mere presence of leadership is inadequate for creating and sustaining positive change (Lowney, 2005). Organizations benefit from competent and well-educated leaders who are capable of communicating effectively, inspiring others and collaborating with them to achieve a common goal (Zenger & Folkman, 2013). Increasingly, corporations are evaluating their leaders by their ability to achieve and sustain results (Ulrich, Zenger, & Smallwood, 1999). The ideal leader is educated, prepared, results-driven, and follows the Jesuit principle of facilitating change for the *greater good*, a term that refers to making a positive impact beyond oneself (Lowney, 2005).

**Leadership Competencies**

One foundation upon which a successful leadership practice can build is through the identification of leadership competencies (Cherry, Davis, & Thorndyke, 2010). Organizations of every type will benefit from recognizing and verbalizing the traits they seek in their leaders (Bennis, 2010). These competencies include the knowledge, skills and abilities leaders should possess and may include decision-making abilities, delegation skills, communication, negotiation and conflict resolution, change management, team building, facilitating change, and fostering innovation (Cherry, Davis, & Thorndyke, 2010). Regardless of how companies prepare their leaders, each should develop a set of
competencies that is specific to the organization and the individual. After reviewing competencies and available resources within the organization, educators can then create a plan to identify gaps and to address recognized opportunities (Cherry, Davis, & Thorndyke, 2010).

The Physician Leader

While effective leadership is essential regardless of discipline, an important question to consider is what differences might apply to physician leaders. Physicians are highly educated and intelligent individuals. Many of the attributes of an effective physician are not necessarily the same qualities sought in a competent leader (Bujak, 2008). Physicians are clinicians who are taught in a similar way and often view their role in medicine as autocratic. As the experts in identifying and treating illness, injury, and disease, a doctor of medicine (MD) is the ultimate authority on the treatment plan for a patient. A physician must rarely seek permission from another or collaborate in order to determine a course of action. Leadership roles rely more heavily on collaboration and relationships. This does not imply that physicians do not collaborate when caring for patients; they do. They collaborate with nurses, physical therapists, respiratory therapists, and countless others in caring for patients. However, their frequent disinclination to collaborate can challenge this effort (Stoller, 2008). Physician leaders must acknowledge their need to build on the skills and abilities acquired in medical school and learn a new set of skills and attitudes for them to be successful as leaders (Bennis, 2010).

While some physicians, like other professionals, will be drawn to serve in a leadership role, others will be drafted into doing so (Mountford & Web, 2013). Many
will find themselves in leadership roles without the benefit of proper leadership education or orientation. Organizations must recognize the value of physician leaders by supporting their professional development just as they would their clinical expertise (Mountford & Web, 2013). Physicians must recognize the value and importance of accepting leadership roles which is often not the case. One study from McKinsey Company (Mountford & Web, 2013) found there were frequently limited or no incentives for doctors to become leaders. The study identified a frequent financial disincentive for physicians to accept a leadership position vs. remaining in a clinical role.

As the healthcare industry undergoes dramatic change, such transformation will require leadership; a great deal of which must come from physicians (Rice, 2009). A growing body of research supports the assertion that physician leadership involvement significantly enhances the organizational performance of hospitals and healthcare organizations (Mountford & Web, 2013). Finding physicians to provide leadership and guidance should be at the forefront of every healthcare organization. The first step in the process is for the institution to determine what they expect from their physician leaders and what skills they seek in those who step forward (Mountford & Web, 2013).

Stoller (2008) identified four compelling reasons for developing physician leaders within organizations:

1. The complexity of healthcare, hospitals, and healthcare organizations.
2. The tendency for physicians to work independently without collaboration.
3. The common practice of placing physicians into leadership roles based on their clinical reputation and expertise.
4. General lack of leadership education for physicians.
These reasons outline a strong imperative for organizations to focus on identifying potential physician leaders and creating an effective mechanism for developing individuals into strong, results-based leaders. Rice (2009) encouraged investing in leadership development to align physicians’ time and talent with desired organizational goals and ensure their enhanced involvement in the design and implementation of the new healthcare law and its components.

**Physician Leadership Competencies**

As the need for physician leaders grows along with organizations’ interest in supporting their development, organizational leaders must identify what competencies for those leaders are needed (Stoller, 2008). Competencies for leaders in general have been discussed in-depth in the literature. Cherry, Davis, and Thorndyke (2010) encouraged the development of a set of competencies specific to physician leaders and suggested a core number to consider as a starting point—decision-making, delegation skills, communication, conflict resolution, change management, and team building. Stoller (2008) proposed six domains for physician leadership competencies:

1. Technical knowledge (financial, human resources, operational, strategic plan)
2. Industry knowledge (clinical processes, regulation, healthcare trends)
3. Problem-solving skills
4. Emotional intelligence
5. Communication
6. Commitment to lifelong learning

Stoller (2008) discussed competency lists from five organizations and cited a recent study that identified emotional intelligence and interpersonal skills, among others,
as vital for every physician leader. One approach for organizations is to explore the existing collection of competencies from various programs in order to create a set unique to them. One organization’s set of leadership competencies is outlined in Appendix A. It is from these competencies that a company’s leadership development process can form. They serve as a foundation to ensure the content presented is aligned with desired leadership behaviors.

**Leadership Development**

While some leaders are born with more innate qualities that contribute to their ability to lead and influence than others, every leader benefits from education and professional development (Senge, 1990). Organizations can only learn and benefit when employees and leaders learn. Institutions function the way they do because of how individuals think, reflect, consider problems, and apply learning (Senge, 1990). Leadership development, or any educational activity that contributes to the knowledge, skills, or abilities of a leader, is a critical foundation for successful companies (O’Leonard & Loew, 2012).

Organizations and their managers share the responsibility for leadership development. An organization has an obligation to develop the skills and abilities of its employees not only because it is the right thing to do, but because doing so is the best investment a company can make (O’Leonard & Loew, 2012). Organizations should not bear the entire burden themselves. Leaders and managers have an obligation to ensure they are continuously learning to enhance their own ability, for potential career progression, and to benefit their employer. Organizations and all leaders, formal and
informal, have a mutual, fiduciary obligation to foster a learning organization (Senge, 1990).

Methods for developing leaders have evolved and grown over the course of time from the classic model of classroom lectures into multifaceted, interactive sessions. Despite progress in the modality and technology used, the American Society for Training and Development (ASTD, 2012) has reported that most leadership development efforts fail while the need to develop leaders along with the ability to grow and change is more important to organizations than ever (Hewes & Patterson, 2012). This is particularly true in the discipline of healthcare that is a highly regulated industry and currently experiencing transformational change as a result of the Patient Protection and Affordable Care Act (PPACA, 2010). Never has there been a greater need to develop healthcare leaders who will be responsible for implementing the various elements of the new law and guiding the delivery of medical care into the future.

Leadership development can take on many forms including coaching, peer learning, in-person lectures, and online programs (Hewes & Patterson, 2012). Once leaders and planners have identified topics, planning can commence. Caffarella (2002) suggested 10 factors to consider when determining program design which include learning objectives, instructors, learners, context, transfer-of-learning, content, technique traits, variety, logistical constraints, and time (See Table 1).
## Table 1

*Ten Factors to Consider when Designing Educational Programs*

<table>
<thead>
<tr>
<th>Factor</th>
<th>Explanation (Question to Address):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Objectives</td>
<td>What is the program attempting to achieve?</td>
</tr>
<tr>
<td>Instructors</td>
<td>Who will teach the program?</td>
</tr>
<tr>
<td>Learners</td>
<td>Who are the students and what are their expectations?</td>
</tr>
<tr>
<td>Context</td>
<td>How does the proposed content fit with the organization?</td>
</tr>
<tr>
<td>Transfer-of-Learning</td>
<td>How will students demonstrate they have learned?</td>
</tr>
<tr>
<td>Content</td>
<td>What topics will instructors present? Level of complexity?</td>
</tr>
<tr>
<td>Technique Traits</td>
<td>What can instructors teach within the proposed techniques?</td>
</tr>
<tr>
<td>Variety</td>
<td>Does the proposal include various techniques (ie, in-person, webinar)?</td>
</tr>
<tr>
<td>Logistical Constraints</td>
<td>Are the costs realistic and space and materials available?</td>
</tr>
<tr>
<td>Time</td>
<td>Are the techniques proposed feasible within the timeframe?</td>
</tr>
</tbody>
</table>

The answers to the questions in Table 1 created the framework of the program design and will determine the look and feel of the final product. The capabilities and culture of the organization also played a role in selecting the format. At one healthcare solutions company, the Leadership Development Steering Team embarked on a process for developing frontline physician leaders. While many components were firmly in place and others still in development, the team outlined a process for their leadership development program:

1. Create the leadership development steering team.
2. Develop a set of desired leadership competencies.
3. Identify gaps in leadership capability vs. the desired competencies.
4. Create a strategy for addressing gaps including in-person and virtual education.
5. Assign a champion of each component---virtual and in-person.
6. Plan and coordinate in-person and virtual logistics.
7. Incorporate the events into a master 3-year calendar.
8. Continuously evaluate and act on input from participants.
These eight steps created the framework for the leadership development model at one organization and might serve as a resource to guide others.

**Physician Leadership Development**

Hospitals and healthcare organizations across the country are recognizing a growing need for involvement from physician leaders in executing their strategic plans and are investing in their development (Kaplan, Porter, & Klobnak, 2012). Physician leadership development programs can take on many forms and can be grouped into three categories—homegrown, developed by an external group such as The Advisory Board or the American College of Physician Executives (ACPE), or a blended version of the two models (Rice, 2009). Most programs deliver content based on identified learning competencies that are customized to meet the unique needs of the group. Rice (2009) identified a set of common learning tactics and philosophies:

- Reliance on small group activity and interdisciplinary learning.
- Use of case studies that relate directly to real problems faced by leaders.
- Enhanced learning about self-awareness and communication.
- Increased use of short, bite-size sessions of learning distributed over time.
- Cautious reliance on new digital learning tools such as webinars.

Senior leaders and course planners might consider these five trends in learning as components for enhancing their programs. Other approaches include the use of formal class projects (that benefit learning and organization) and mentoring programs (Kaplan, Porter, & Klobnak, 2012). ASTD (2012) suggested that any approach used should be action-oriented and relate to what participants will do differently after the program.
The financial cost of physician leadership academies vary greatly across the United States, but estimates range from $55,000 to $100,000 per organization per year (Rice, 2009). Factors such as the number of participants, size of the organization, reliance on outside faculty, travel costs, and the frequency of learning sessions are a few of the factors that affect the cost (Rice, 2009).

Organizations have reported many benefits from improving physician leadership capabilities (Rice, 2009). A commonly reported result is a heightened level of physician engagement (Kaplan, Porter, & Klobnak, 2012; Rice, 2009). Executives have recognized the significance of having physicians at the planning table and actively involved in the decisions of the organization. Other benefits of leadership academies include an improvement in quality metrics, development of standardized guidelines, improved satisfaction from physician colleagues, and improved satisfaction from nurses (Rice, 2009). Table 2 summarizes these benefits.

Table 2

*Summary of Potential Benefits from a Physician Leadership Academy*

<table>
<thead>
<tr>
<th>Academy Metrics</th>
<th>Percentage Reporting Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Metrics Improve</td>
<td>96.1%</td>
</tr>
<tr>
<td>Standard Clinical Guidelines Reported</td>
<td>94.4%</td>
</tr>
<tr>
<td>Improved Satisfaction from Physician Colleagues</td>
<td>89.4%</td>
</tr>
<tr>
<td>Improved Satisfaction from Nurses</td>
<td>81.1%</td>
</tr>
</tbody>
</table>

Healthcare organizations and systems across the U.S. are discovering that in order to accomplish their increasingly challenging targets and goals, they must invest in leadership education of physicians and other healthcare leaders (Stoller, 2008).
**Adult Learning Principles**

Regardless of the modality used to educate leaders, course designers should incorporate principles of adult learners (Caffarella, 2002). Addressing their unique learning needs will enhance retention and subsequent application of newly acquired knowledge. Knowles (1990) offered a comprehensive theory and developed six assumptions (See Figure 2). These include:

1. Adults must recognize a *need* to learn something before committing to learn it.
2. Adults must recognize their role in learning and assume responsibility as *self-directed learners*.
3. Adults learn best when they can build on their vast years of *experience*.
4. Adults must have a *readiness to learn* when they see value in how they can apply it to solve problem.
5. Adults are *life-centered in their orientation to learning* vs. children who are *subject-centered learners*.
6. Adult learners are *motivated* most frequently by internal drivers such as job satisfaction, self-esteem, or successful completion of a task.

*Figure 2. Knowles’ adult learning principles*
Knowles (1990) promoted the concept that the role of educators should assist people in learning versus merely educating people. Educators have the responsibility to design opportunities for participants to build on their strengths and develop their skills. Learners have the responsible to engage directly in their own learning.

**Motivation---A Component of Knowles’ Theory**

While Knowles (1990) identified motivation as a catalyst for adult learning, Keller (1987) created a model for influencing the motivation of participant learners. The ARCS Model described four critical elements for individuals to become motivated---attention, relevance, confidence, satisfaction. Keller suggested that addressing each condition enhances motivation and will benefit those who want to learn.

The first component of motivation is gaining and sustaining audience *attention* through the use of an appropriate stimulus (Keller, 1987). While it might be simple to gain a group’s attention through a dramatic pause or interesting story, sustaining attention is the bigger challenge. Keller (1987) suggested several strategies for sustaining attention including variability in style, the use of humor, creative techniques for inquiry during class, and the use of puzzles or games.

The second element of motivation, according to Keller (1987) is *relevance*, or ensuring course designers and educators can articulate the significance of the education for their students. It may come as a direct result of the content or from the way something is taught. Keller (1987) offered strategies such as overtly stating the intrinsic value of learning, future usefulness, or providing choice.

The third element of motivation is *confidence* which can have a direct impact on a student’s persistence, drive, and accomplishment (Keller, 1987). Confident individuals
tend to believe they will accomplish their stated goals. Anything an educator can do to enhance the students’ expectancy for success will also enhance their motivation. Suggestions include setting expectations, attributing success to effort, and promoting independence in learning.

The fourth element of motivation is satisfaction, or incorporating practices that make students feel positively about their experience (Keller, 1987). Focusing on rewarding effort, allowing students to apply a new skill, or granting autonomy are a few of the potential strategies.

These four categories, shown in Figure 3, form the foundation of the ARCS model for motivating students. The approach is consistent with Knowles’ theory and much of it overlaps. Both authors encouraged the critical role of motivation to learning.

**Figure 3.** The ARCS Model of (Learning) Motivation

Another theory on motivation, this one by Daniel Pink (2009), might also be appropriately applied to learning. Pink suggested three components of motivation---autonomy, mastery, and purpose. His work, based on the self-determination theory, explained that individuals seek some level of control over what they do (autonomy), the opportunity to excel (mastery), and to know there is a reason for what they are doing (purpose). All three seem to fit ideally into the field of education and learning. It seems
students want the same three things in the classroom that members of the general population do in their daily lives.

In addition to satisfaction and motivation, another facet of online learning is how to maximize its use to enhance retention. Since Ebbinghaus published research in 1895 which demonstrated how memory quickly deteriorates if nothing is done to reinforce it, savvy course designers have incorporated features into their programs to mitigate the deterioration such as case studies and lesson plans that ensure participants revisit the material several times after learning (Nelson, 1985). Ebbinghaus found that students forgot 42% of what they learned within 20 minutes, 67% within 24 hours, and 79% within one month (Nelson, 1985). Dubbed *The Forgetting Curve*, shown in Figure 4 the phenomenon of forgetting is something every instructor should consider during planning and how to best offset its effects during a digital format.

![Ebbinghaus' Forgetting Curve](image)

*Figure 4. Ebbinghaus’ forgetting curve*
Online (Virtual) Learning

The World Wide Web (WWW) emerged in the early 1990s and has since entered the mainstream and became a driving force in the way members of society interact and share information (Perry & Pilati, 2011). In the mid-1990s, distance learning programs began by embracing the capabilities and reach of the internet (Perry & Pilati, 2011). Since then, as computer processing power has increased along with new technologies, private companies and non-profit institutions have joined colleges and universities in embracing online education. The advances in technology and the associated versatility have led to the application of various learning modalities (Pullen, 2013; Koegel, 2010). These have included streaming video, webinars, webcasts, and audio teleconferencing (Pullen, 2013). Internet-based technology enables corporate leaders and educators to disseminate information to a large group of individuals and to teach them simultaneously (Pullen, 2013).

Benefits

Faculty and students cite a variety of benefits of online learning, the most common of which is the convenience of being able to participate from anywhere in the world (Pullen, 2013; Ryan et al., 2007). Other benefits include flexibility, a growing interest among students in using technology, relative cost-benefit over traditional in-person courses, and the ability to engage students in a variety of formats (synchronous, asynchronous, audiovisually) (Pullen, 2013; Ryan et al., 2007). Some studies have demonstrated that online programs enhance engagement, participation, learning, and the transfer of knowledge (Ryan et al., 2007; Gunawardena, Linder-VanBerschot, LaPointe, & Rao, 2010).
Drawbacks

While research cites several benefits to virtual learning, presenting to a remote audience that the instructor cannot see has its drawbacks (Koegel, 2010). These include the user’s potential lack of technical savvy, a subsequent potential for technical problems, and an inherent lack of face-to-face, personal interaction (Gerkin, Taylor, & Weatherby, 2009). Another drawback is related to maintaining participant attention, especially during a synchronous broadcast. Fifty-eight percent of learners admit to multi-tasking (ie, checking emails or their phones) during virtual sessions such as webinars (Koegel, 2010). There is also resistance by some who believe online learning is not as effective as traditional classroom learning despite several studies to the contrary (Frost & Sullivan, 2013; Koegel, 2010). Table 3 summarizes the benefits and drawbacks.

Table 3

<table>
<thead>
<tr>
<th>Benefits/Strengths</th>
<th>Barriers/Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility</td>
<td>Users’ Potential Lack of Tech Savvy</td>
</tr>
<tr>
<td>Convenience</td>
<td>Potential for Technical Problems</td>
</tr>
<tr>
<td>Growing Interest in Technology</td>
<td>Resistance to Online Modality</td>
</tr>
<tr>
<td>Relative Cost-Benefit</td>
<td>Lack of In-person Interaction</td>
</tr>
<tr>
<td>Encourages a Varied Approach</td>
<td>Competition for Learner’s Attention</td>
</tr>
<tr>
<td>Enhanced Engagement &amp; Learning</td>
<td></td>
</tr>
</tbody>
</table>

As educators consider the use of digital learning and design courses in various modalities, they must consider incorporating tenets and features for optimizing the benefits and minimizing the barriers.

Multimedia & Design Aspects of Learning

The art and science of multimedia learning is one approach for enhancing the creation of a successful online event. Of particular value are tools and tactics course
designers can apply to make an online event more engaging, more interesting, and ultimately more effective. Koegel (2010) suggested any online education should provide relevant content, engage the learners, and move at a steady pace. When designing the course, educators should consider principles of adult learning theory, anticipate participant multi-tasking and short attention span, and incorporate specific tactics for optimizing learning. Mayer (2007), who has challenged traditional use of PowerPoint and similar modalities in favor of a more disciplined approach with strategic use and placement of visuals and graphics, offered the following research-based principles for enhancing the visual aspects of a presentation. Mayer (2007) suggested an improved transfer of learning when the following occur:

1. Visuals and words appear on-screen vs. words only.
2. Words and visuals (pictures or graphics) are near each other.
3. Animation and narration occur simultaneously vs. successively.
4. Extraneous words, sounds, and pictures are excluded.
5. Words are narrated vs. appearing on screen.
6. Words are narrated vs. narration with on-screen text.
7. A session is highly visual for low-knowledge learners.

These seven rules provide educators with guidance on how to effectively create on-screen presentations. Online learning relies heavily upon the user interface and what the participants see on the screen (Koegel, 2010). Several other tactics will mitigate some of the challenges of online learning while enhancing the student experience:

1. Koegel (2010) suggested embedding a secret word within a presentation to encourage students to continuously watch the screen and avoid multi-tasking.

3. Simon (2013) and Koegel (2010) urged presenters to vary their approach throughout the presentation such as changing slide design or presenters every 7 to 10 minutes.

4. Koegel (2010) suggested having audience members submit their initials by chat or social media, if appropriate, to signify their commitment to pay attention.

The authors suggested that incorporating these research-based pearls into virtual presentations will enhance student satisfaction and likely learning as the ultimate outcome (Koegel, 2010; Simon, 2013).

**Logistics**

Assimilating the research on virtual education, training pearls, multimedia aspects, and best practices culminated into the process of implementing the plan for creating an online learning event. Figure 5 outlines the logistical steps in the process.

| 1. Identify the purpose of the event. |
| 2. Research methods of delivery options. |
| 3. Create draft agenda/outline. |
| 4. Select dates for filming & broadcasting. |
| 5. Identify vendor for delivering content. |
| 7. Book the room for filming; invite attendees. |
| 8. Plan for in-person logistics (ie, food, chairs). |
| 9. Develop master slide deck. |
| 10. Determine accountability & evaluation method. |
| 11. Send save-the-date for broadcast. |
| 12. Create pre-work written assignment, if any. |
| 13. Purchase prizes for the raffle drawing. |
| 14. Create marketing plan and send invitation. Send invitee list to vendor. |
| 15. Re-confirm and brief speakers. |
| 16. Send presentation tips & final slides to group. |
| 17. Film the session as outlined. |
| 18. Broadcast the event. |
| 19. Send follow-up email. |
| 20. Close the event; update this action plan as needed. |
| 21. Evaluate the effectiveness of the event/medium. |

*Figure 5.* Sample set of a logistics plan for creating an online event
Satisfaction of Online Learning

As the use of online learning grows, educators should continuously evaluate the various aspects of such an approach and their impact. One aspect of online learning to consider is student satisfaction. Research has suggested that satisfied participants are more motivated to attend classes and participate, engage, and learn more (Bradford, 2011; Gunawardena, Linder-VanBerschot, LaPointe, & Rao, 2010). Students who are more satisfied and engaged tend to be more successful (Gunawardena, Linder-VanBerschot, LaPointe, & Rao, 2010).

Keller’s ARCS Model described an approach to enhancing learner motivation, one of six elements of Knowles’ adult learning theory (Bradford, 2011). Learner satisfaction is the fourth principle the ARCS model and can be defined as a range of opinions regarding a learning experience (Bradford, 2011). These feelings and opinions are intrinsic in the learner and associated with some type of expected outcome (Bradford, 2011). Satisfaction is multi-faceted, and research has suggested that four factors contribute to satisfaction with online learning. They are student-faculty interaction, active learning, amount of time spent, and cooperation among fellow students (Dziuban, Moskal, Brophy, & Shea, 2007).

Satisfaction, as a construct of motivation, is a component of the first level of Kirkpatrick’s Model of Evaluation (Bradford, 2011). The model was created in 1954 and has since become a common method for evaluating education programs across industries (Bradford, 2011). The model is comprised of four levels---reaction, learning, behavior, and results. Reaction measures how participants reacted to the training or “did they like it?” Learning asks if the participant acquired what was intended or “do they know it?”
The third level is whether students’ *behavior* changed as a result of the education or “are they using it?” The final level refers to whether or not outcomes or *results* were achieved, or “did it make a difference?” Kirkpatrick argued that the four principles can be applied to any type of training or education (Bradford, 2013). Figure 6 depicts the four principles.

![Figure 6. Kirkpatrick levels for evaluating training programs](image)

While Kirkpatrick outlined four levels of evaluating learning programs, The Sloan Model explores satisfaction, as a component of Kirkpatrick’s first level (reaction) further (Bradford, 2011). The model identified eight dimensions for educators to consider as contributors to learner satisfaction. They are the following:

- Reduced Ambiguity – Clarity around the program and its components.
- Enhanced Sense of Value in the Course – The need for the course.
- Reduced Ambivalence – Motivation and desire to learn.
- Clarified Rules of Engagement – Clarity around the process and expectations.
• Improved Interaction – Student/instructor and student/student communication.

• Augmented Learning – Focus on the transfer of learning as an outcome.

• Increased Latitude in Learning – Autonomy for the learner to learn.

Bradford (2011) argued that “measuring satisfaction might provide insights into the effectiveness of instructional design” (p. 217) and identified the Sloan model for developing a successful approach.

When determining the participant level of satisfaction with online learning, Pullen (2013) outlined eight categories of questions:

• Course Structure – Determining if the objectives were clear and the course organized.

• Content – Evaluating content to determine appropriateness, relevancy, and if it builds on the learner’s current knowledge and experience.

• Graphics – Determine if the presentation was appealing and if the graphics, visuals augmented the material.

• Medium – Determining if the choice of delivery was effective.

• Instructional Design – Evaluating the pace, interactivity, and organization of the course layout and design.

• User Interface – Determining if the user’s home screen was well-designed and if the instructions were easy to follow.

• Impressions & Impact – Determining if participants’ perceive online delivery to be an effective way of learning, if it was worthwhile, if it kept their attention, if it was easy to use, and ultimately if they would like to learn in a similar way in the future.

Assimilating Literature Review Findings

The multiple studies reviewed have contributed to an intricate and synergistic theoretical framework and model for this study. Knowles’s (1990) principles of adult learning served as the catalyst and starting point for creating a physician leadership
development program that was couched in strong learning theory. Motivation is one of six subsets from Knowles’ theory. Keller’s (2011) ARCS Model (Attention, Relevance, Confidence, Satisfaction) expanded the concept of motivation by identifying four components that contribute to motivating a learner. The fourth aspect of the ARCS model, satisfaction, is addressed by the Sloan Model of Student Satisfaction of Online Learning. The individual theories from Knowles, Keller, and Sloan built on one another to form the foundation of an online learning model. The second component of this study’s model details critical aspects and attributes of learning for educators to consider when creating, designing, and delivering content. Studies from modern theorists contributed to this aspect of the design. The third and final phase identified the desired outcomes for the VLA based on Kirkpatrick’s (Bradford, 2011) four levels and Ebbinghaus’ (Nelson, 1985) learning curve. Figure 7 articulates how the various sources contributed to the study.

**Online Learning Model for Physicians**

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<table>
<thead>
<tr>
<th>Foundational Framework</th>
<th>Delivery, Content, &amp; Design Features</th>
<th>Desired Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowles’ Adult Learning Principles</td>
<td>Relevant Content</td>
<td>Kirkpatrick 4-Labs</td>
</tr>
<tr>
<td>(Self-Concept, Experience, Readiness, Motivation, Orientation, Need to Know)</td>
<td>• Knowles Delivery, Content Rules</td>
<td>• Reaction</td>
</tr>
<tr>
<td>Keller’s ARCS Model of Learning Motivation</td>
<td>• Koegl Optimal Design</td>
<td>• Learning</td>
</tr>
<tr>
<td>(Attention, Relevance, Confidence, Satisfaction)</td>
<td>• Simon</td>
<td>• Behavior</td>
</tr>
<tr>
<td>Sloan Model of Student Satisfaction of Online Learning</td>
<td>• Mayer</td>
<td>• Results</td>
</tr>
<tr>
<td>(Rules of Engagement, Interaction, Less Ambiguity, Augmented Learning, &amp; Increased Freedom)</td>
<td>• Koegl</td>
<td>Cognition &amp; Retention</td>
</tr>
<tr>
<td></td>
<td>• Additional Research</td>
<td>• Kirkpatrick</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Knowles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ebbinghaus</td>
</tr>
</tbody>
</table>

*Figure 7.* Online learning model for physicians
Chapter Two Summary

Chapter Two described the various articles, texts, and studies reviewed for this project. The researcher collaborated with leaders of one organization whose goals were to deliver relevant content to their frontline physician leaders in a cost-effective and timely fashion. The study began by exploring research related to developing a theoretical framework for creating a program that would be well received by participants, effective in delivering information, and based on adult learning principles. Keller’s (2011) model for addressing a learner’s motivation built nicely on Knowles’ (1990) adult learning theory followed by Sloan’s model of determining satisfaction with online learning. Research-based design principles were then applied to create an online learning academy.

While the organization involved in the study will determine the effectiveness of the online approach over time, this project focused on determining one outcome measure of the academy---participant satisfaction. The literature review started broadly by considering adult learning principles then narrowed to culminate in how to best determine the level of satisfaction of those who participate in the online learning process. Chapter Three will articulate the methodology that was used to conduct the study.
CHAPTER 3. METHODOLOGY

The previous two chapters provided the background and related literature for this study on determining participant satisfaction of online learning as an approach for developing physician leaders. This chapter describes the research design, the appropriateness of the design, the methodology and instrumentation used for data collection and analysis, and related ethical considerations.

Study Design

In this mixed methods study, a convergent parallel design was used to collect quantitative and qualitative data concurrently and independently (Figure 8).
An online survey provided quantitative data while personal interviews contributed to the qualitative component of the study. The two strands were then merged into an overall interpretation during the analysis phase to bring greater insight into participant satisfaction of online leadership education than would be obtained by either type of data separately (Creswell & Plano Clark, 2011). The benefits of both qualitative and quantitative research were leveraged in this mixed methods study. Quantitative research measures variables and applies generalizations to a larger group. Qualitative research develops an in-depth understanding of a smaller group or subset of a larger population and generates theories based on participant perspectives (Creswell & Piano Clark, 2011). The researcher applied a data validation variant to the study by asking open-ended questions in the interviews to validate the quantitative data from the survey (Creswell & Piano Clark, 2011).

A pragmatist worldview contributed to the convergent parallel model which was selected for its features as an intuitive and efficient method for corroborating, comparing, and relating two sets of data (Creswell & Piano Clark, 2011). Challenges of the convergent model include an added level of complexity in obtaining two sets of data and determining how to merge these data together in a meaningful way and address any potential disparities in the data.

**Population & Sample**

The participants for the study were physician leaders from a national physician company. For the quantitative segment of the study, any physician leader who completed the online survey was included as a participant in the study. They automatically received
the survey questions during the last segment of the online event. The limiting factor was if the leader opts out of the survey.

For the qualitative segment of the study, two leaders from each of the four geographical regions in the company were selected randomly based on availability and willingness to participate in the personal interview process. The total number of participants for the qualitative phase was eight. Creswell and Piano Clark (2011) recommended a much smaller number of participants in the qualitative segment than in the quantitative phase to ensure the process is manageable and provided the researcher the ability to probe deeply during the interview process. The pair also recommended that the “individuals who participate in the qualitative sample be the same individuals who participate in the quantitative sample” (Creswell, 2007, p. 183).

For the quantitative study, participants were invited *en masse* based on their role and position within the organization. Appendix B depicts the invitation. For the qualitative study, participants were invited verbally by the researcher initially followed by a written invitation to participate, as outlined in Appendix C.

**Data Collection**

Data were collected from an online survey and concurrently from personal interviews. The data collection phase occurred following the launch of the VLA which occurred in October 2013. The online survey was embedded into the virtual broadcasting software that was used as the platform for the event. Participants were prompted verbally during the event to complete the survey and were directed to the questions upon viewing the content. The survey page automatically popped-up in a new window. The data were captured within the online software for analysis.
For the personal interviews, the participants were contacted by telephone or in-person by the researcher and invited to participate. Following their agreement, a letter was sent by email to confirm their interest and willingness. Interviews were audio-recorded and conducted by telephone. The audiotapes were then transcribed for analysis by a third party vendor. In advance of the interview, the researcher applied bracketing, a process of setting aside any personal preconceived opinions regarding the subject of the study to prevent bias and to ensure pure data (Polit & Beck, 2010).

**Quantitative Data (Online Survey Instrument)**

The process for creating the quantitative portion of the study began by determining the capabilities and features of the online vendor selected to serve as the method of transmitting the content online to the participants. GoToWebcast™, the software vendor, was used to deliver the content and contained a built-in tool for collecting data known as an in-session survey. This feature was simple and highly customizable providing researchers with the ability to create any type of question and capture the responses (GoToWebcast, 2013). The data from the questions and responses, along with any demographic information received, was analyzed within the software and exported to an Excel spreadsheet for further interpretation and study.

The researcher explored the technological capabilities of the platform, researched various articles and literature on the process of developing effective survey questions, and reviewed sample multiple choice questionnaires that would be suitable for an online format (Blair, Czaja, & Blair, 2014). Research confirmed the online survey as the ideal choice for the study due to its convenience and ability to capture a great deal of data from a large group in a short amount of time (Blair, Czaja, & Blair, 2014).
In addition to determining the tenets of creating effective survey questions, it was critical to identify the ideal features of designing specific questions for determining the level of satisfaction of an online event. Knowles’ (1990) adult learning theory prompted questions related to relevance. Mayer’s (2007) theories on multimedia learning prompted consideration of questions on the use of design and graphics. The ARCS Model of Motivation triggered questions related to motivation and a template was created based on a questionnaire by Pullen (2011):

**Structure** – Overall construct of the online event.

**Content** – Didactic material presented during the event.

**Graphics** – Pictures, video, and clipart on slides shown during the event.

**Design** – Factors that affected the flow and appearance of the event.

**Technical Aspects** – Ease of use and accessibility.

**Impressions of the Approach** – Overall satisfaction of the modality.

**Learning Style Supported** – Effectiveness of method on learning.

The SLOAN Model for determining satisfaction which addressed the following factors also contributed to the generation of questions (Bradford, 2011): reduced ambiguity, enhanced sense of value in the course, reduced ambivalence, clarified rules, individually responsive learning environment, improved interaction, augmented learning, and increased latitude in learning. Participants responded to ten questions using a five-point Likert scale (5. Strongly Agree, 4. Agree, 3. Neutral, 2. Disagree, 1. Strongly Disagree) to answer “To what degree do you agree with the following?”

**Logistics**

a. Objectives were clear & easy to understand.

b. I experienced no technical issues.
Design Features

c. Length of the session was ideal.
d. The amount of interactivity was ideal.
e. The use of video enhanced learning.

Content

f. Content was relevant to my practice.
g. Content built on my current knowledge.

Overall

h. I find online sessions an effective way to learn.
i. I was satisfied with this event.
j. Please provide any additional comments (Open-Ended).

These questions were arranged by four categories to answer the study question and to provide leaders input on future events.

Qualitative Data (Personal Interview Instrument)

The process for creating questions for the qualitative instrument for conducting personal interviews began by reviewing the planned online survey questions. Roberts (2010) suggested that quantitative surveys ask *what* while qualitative interviews ask *why*; the questions for the planned interviews were developed on this premise. If the online questions would answer *what* the participants’ level of satisfaction was, the interview questions should answer *why* they liked or disliked it. Since the study collected data concurrently, the researcher did not have the benefit of reporting the quantitative results of the study prior to conducting interviews, so the questions were created independently to contribute to answering the stated research question. They were probative in nature to explore participant satisfaction. The questions included:
Logistics
1. Describe your experience with the technical aspects of the VLA
2. Describe when, where, and how you viewed the VLA?
3. How difficult was it to focus without multi-tasking?

Design Features
4. What design features (appearance of what you viewed & heard) were most helpful?
5. Regardless of content, describe your perception of two approaches (studio v. classroom).

Content
6. Explain your impression of the topics covered in the VLA.

Overall
7. Describe your level of satisfaction with the VLA.
8. Tell me what you liked about the VLA.
9. Tell me what you disliked about the VLA.

The researcher followed the script for the nine questions during telephone interviews which took place in place in November to December 2013 (See Table 4). A set of follow-up questions such, “tell me more about that,” “can you tell me more about that,” or “what did you mean by that?” was prepared to enhance the discussion if needed.

Table 4

<table>
<thead>
<tr>
<th>Participant</th>
<th>Date of Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR01</td>
<td>November 18, 2013</td>
</tr>
<tr>
<td>HR02</td>
<td>November 22, 2013</td>
</tr>
<tr>
<td>LJ03</td>
<td>November 26, 2013</td>
</tr>
<tr>
<td>GJ04</td>
<td>November 26, 2013</td>
</tr>
<tr>
<td>MC05</td>
<td>November 27, 2013</td>
</tr>
<tr>
<td>TS06</td>
<td>November 27, 2013</td>
</tr>
<tr>
<td>WK07</td>
<td>November 29, 2013</td>
</tr>
<tr>
<td>CM08</td>
<td>December 2, 2013</td>
</tr>
</tbody>
</table>

Data Analysis

Following the collection of data from surveys and in-person interviews, the process of collating and analyzing the data began. The researcher followed these steps in evaluating the quantitative data (Creswell & Piano Clark, 2011):
1. Exported data from the built-in broadcasting software into a Microsoft Excel spreadsheet to allow for enhanced analysis.

2.Reviewed and inspected data upon receipt to identify any initial trends.

3. Included descriptive statistics and frequencies for the quantitative data as part of the analysis.

4. Analyzed data and results to answer research questions.

In addition to the quantitative analysis, the researcher followed these steps for analyzing the qualitative data (Creswell & Piano Clark, 2011):

1. Conducted an initial review of transcripts.

2. Coded interview responses by theme.


4. Drew appropriate conclusions and report findings.

After the analysis of both qualitative and quantitative data were completed, the researcher converged the data to interpret the combined results. Participant satisfaction scores were compared to the qualitative analysis of leader interviews regarding their insight into online learning for physician leaders.

**Reliability, Validity, and Trustworthiness of Data**

Prior to use in this study, the online survey was employed in an earlier learning academy by this researcher. A review of the first set of results along with feedback from faculty and participants contributed to the construct validity of the survey instrument.

*Validity* refers to the accuracy of the measurement (Polit & Beck, 2010). *Internal validity* determines whether the proposed questions will adequately answer the research question being studied. *External validity* refers to the extent to which the results can be generalized to a larger population than the survey sample is representing (Creswell &
Piano Clark, 2011). In addition to determining validity, reliability of a study refers to the consistency of a measurement over time.

While the terms reliability and validity tend to be reserved for quantitative research, the concepts can be applied to qualitative aspects of the study in the form of ensuring the trustworthiness of data. Shenton (2004) suggested a study can be trustworthy by addressing four elements—credibility, transferability, dependability, and conformability. Credibility, similar to internal validity, refers to the veracity of the data and can be achieved by incorporating the following components (Polit & Beck, 2010):

- A well-established research process and design
- Familiarity with the organization, its people and culture
- Random, non-biased sampling
- Triangulation of the study’s data
- Tactics to ensure openness and honesty from participants such as the right to refuse to answer a question, comfortable environment, and encouragement to be frank in their responses
- Peer review and scrutiny of the project
- Iterative, probative questioning

Each of these elements were addressed and incorporated into the features of the design. In addition, Shenton’s (2004) second element of trustworthiness is transferability which he equates to external validity and outlines five factors to address in order to achieve:

- The number of organizations involved in the study
- Any restrictions on the participants
- The number of researchers participating in the study
- The data collection methods used
- The time period involved in the study
Shenton (2004) described the concept of dependability in qualitative research as being comparable to reliability in quantitative. Shenton’s (2004) three factors for ensuring a study is dependable are a) having a research design study on a strategic level, b) including operational detail of data, and c) ensuring a high level of reflection and appraisal of the study and its results.

The final element that Shenton (2004) offered as a vital element to trustworthiness is confirmability, the qualitative equivalent of objectivity. Shenton (2004) suggested researchers acknowledge any biases or predisposition and encouraged a meticulous design process along with an “audit” trail that clearly articulates the steps used in the process to achieve the published results.

In addition to the creation of a study based on design elements from Shenton (2004) along with Polit and Beck (2010), member checking was conducted on two study participants to ensure validity. Member checking is a technique in which a participant is asked to review a draft of the research findings and judge the accuracy of the results (Creswell, 2013). The two study participants validated the accuracy of their comments as transcribed and the results of the study. In addition to member checking, the dissertation committee members were consulted at various points in the project to review the research documentation and conclusions.

**Ethical Considerations**

The researcher discussed the topic of this study in early 2012 with his dissertation chairperson and other faculty members. The problem statement and initial research question were created shortly thereafter. The first three chapters were submitted to the full committee in August 2013, followed by formally proposing the study in September
2013. Following candidacy and committee approval, the study and required forms were submitted to the Creighton University Institutional Review Board (IRB) for approval. There is no IRB at the participating organization; leaders formalized their approval and company’s involvement in a formal letter of agreement (Appendix D).

The primary ethical consideration was to ensure that the study and all of its components were in full compliance with the IRB requirements at Creighton University. The second ethical consideration was confirming participation from the sponsoring organization to conduct the study. The third ethical consideration was to ensure participants were appropriately aware of the study and consented to their participation. For the online survey, two lines of text were added to the survey confirming that completion of the survey constitutes their consent to participate in the anonymous survey. A final ethical consideration was related to minimizing the overt mentioning or use of the logo or any potential proprietary information from the company at which the study was conducted, in accordance with the researcher’s verbal addendum to the written agreement with company leadership. Appendix E contains the IRB approval form and framework.

Summary

The focus of this study was to explore the level of participant satisfaction of an online learning academy as an approach to educating physicians. This chapter summarizes the mixed methods design proposed for the study and outlines how the two strands of data were analyzed and merged in Chapter Four which also discusses the results, and findings of the study.
CHAPTER 4. RESULTS AND FINDINGS

While the first two Chapters provided an introduction and background to this mixed methods study and Chapter Three outlined its design and methodology, this Chapter discusses the process used to analyze the data including the results from the quantitative survey and qualitative interviews and the findings related to the stated research question of participant satisfaction of an online learning academy as an approach to developing physician leaders. There were 166 physicians who participated in the online survey and eight physicians in the telephone interviews. The results were collected in parallel from October to December 2013.

Quantitative Component of the Study

The vendor that broadcast the virtual leadership academy (VLA), GoToWebcast, included a polling feature that was used to survey the participants to create the quantitative component of the study. The virtual broadcasting software stored the data and enabled the researcher to export it into Excel where it was then organized, manipulated, and analyzed. The software and its features were simple, intuitive, and permitted customization of survey questions. Leaders of the participating organization requested the number of questions remain under 10 to encourage participation and aide in flow and efficiency of the event.

Demographics

While personal identifiers were captured to ensure the participants received credit for attending, these identifiers were excluded from the data transfer to meet the stated goal of anonymity of this study. Anonymized demographic information such as region and years of experience were collected and analyzed for trends. Of the 166 participants
who responded to the online survey, 33% self-identified as having two or fewer years of experience as a leader, 19% with 3 to 5 years of experience, 17% with 6 to 10 years, 11% with 10 to 15 years, and 20% with over 15 years. Figure 9 depicts the participant experience by years.

![Figure 9. Participant years of experience](chart9)

While the virtual program was intended for physician leaders across the country, there was an uneven representation from the four regions as depicted in Figure 10.

![Figure 10. Attendance by geographical region](chart10)
Results

The questions in the online survey were asked using a five-point Likert scale (5. Strongly Agree, 4. Agree, 3. Neutral, 2. Disagree, 1. Strongly Disagree) to answer the question, “To what degree do you agree with the following?” The questions were arranged by four categories (logistics, design features, content, and overall) as follows:

**Logistics**
- a. Objectives were clear & easy to understand.
- b. I experienced no technical issues.

**Design Features**
- c. Length of the session was ideal.
- d. The amount of interactivity was ideal.
- e. The use of video enhanced learning.

**Content**
- f. Content was relevant to my practice.
- g. Content built on my current knowledge.

**Overall**
- h. I find online sessions an effective way to learn.
- i. I was satisfied with this event.
- j. Please provide any additional comments (open-ended).

The mean scores for all questions ranged from a low of 3.90 (out of 5.0) in response to “The amount of interactivity was ideal” to a high of 4.93 for “The objectives were clear.” The mean for all questions was 4.46 with a standard deviation of .2249. Participants were asked to answer each of the questions in order to advance to the next question and complete the survey. Table 5 displays the quantitative scores.
Table 5

Quantitative Survey Results

<table>
<thead>
<tr>
<th>Question</th>
<th>Score of 5</th>
<th>Score of 4</th>
<th>Score of 3</th>
<th>Score of 2</th>
<th>Score of 1</th>
<th>Mean</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 Objectives Clear</td>
<td>117</td>
<td>49</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4.93</td>
<td>166</td>
</tr>
<tr>
<td>Q2 Technical Issues</td>
<td>107</td>
<td>29</td>
<td>19</td>
<td>10</td>
<td>1</td>
<td>4.39</td>
<td>166</td>
</tr>
<tr>
<td>Q3 Length of Session</td>
<td>91</td>
<td>66</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>4.49</td>
<td>166</td>
</tr>
<tr>
<td>Q4 Interactivity</td>
<td>50</td>
<td>60</td>
<td>45</td>
<td>11</td>
<td>0</td>
<td>3.90</td>
<td>166</td>
</tr>
<tr>
<td>Q5 Video Enhanced Learning</td>
<td>97</td>
<td>54</td>
<td>14</td>
<td>1</td>
<td>0</td>
<td>4.49</td>
<td>166</td>
</tr>
<tr>
<td>Q6 Relevant to My Practice</td>
<td>110</td>
<td>50</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>4.63</td>
<td>166</td>
</tr>
<tr>
<td>Q7 Built on Current Knowledge</td>
<td>87</td>
<td>74</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>4.49</td>
<td>166</td>
</tr>
<tr>
<td>Q8 Online Learning Satisfying</td>
<td>92</td>
<td>68</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>4.51</td>
<td>166</td>
</tr>
<tr>
<td>Q9 Satisfied with this Session</td>
<td>93</td>
<td>72</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4.55</td>
<td>166</td>
</tr>
</tbody>
</table>

Individual Question Analysis

After compiling and examining the overall data in an Excel spreadsheet, an analysis of the individual questions was conducted:

*Question #1 – The objectives were clear & easy to understand.* This question was designed to ensure that participants clearly understood the purpose and overall objectives of the program. Knowles (1990) suggested that adult learners are self-directed but must understand the reason and applicability of any educational event. Establishing course objectives was the foundational aspect of the VLA (Caffarella, 2002). A survey score of 4.93 (out of 5.0) was the highest ranking question, well above the mean of 4.46, and suggested that the course objectives were understandable.

*Question #2 – I experienced no technical issues.* This question sought to determine if the participants experienced any issues related to the technical aspects of registering or viewing the VLA. Koegel (2010) encouraged the use of virtual learning but cautioned planners to ensure the process is simple for the participants to navigate and
free of technical problems. A survey score of 4.30 (out of 5.0) was below the mean of 4.46 and suggested an opportunity to address technical issues for future events. The pilot broadcast of a VLA experienced several technical issues that were addressed prior to launching the second edition. Some minor technical issues, however, persisted that appear to have resulted in a score lower than the mean.

**Question #3 – Length of session was ideal.** This question was designed to determine if the 60-minute length of the session was appropriate for the participants. The planners had debated on the ideal length of the session and determined that 60 minutes divided into three 20-minute blocks was ideal (Koegel, 2010). A score of 4.49 (out of 5.0) which is above the mean of 4.46 suggested that length was acceptable to most participants while verbatim comments revealed that 60 minutes is the maximum length.

**Question #4 – The amount of interactivity was ideal.** The question was designed to determine the participants’ perception of the level of interactivity within the VLA. This is based on the premise that adults learn best by interacting with their environment in a varied approach that stimulates multiple senses (Mayer, 2007). To incorporate interactivity, the use of polling was added to the event and participants could click on a box to ask a question. A score of 3.90 (out of 5.00) which is below the mean of 4.46 and the lowest ranking question suggested addressing interactivity is an opportunity for improving future virtual events. The software and the fact that most participants watched the recorded version (versus live) limited the amount of interaction available but exploration of other options or a different vendor might add more options.

**Question #5 – The use of video enhanced my learning.** This question was designed to determine whether participants perceived if video and the opportunity to see
the presenters enhanced their experience. Mayer (2007) and others have recommended the use of purposeful and relevant multimedia to enhance learning. A score of 4.49 (out of 5.00) which is higher than the mean of 4.46 suggested the use of videos did enhance the learning experience for participants. A PowerPoint was combined with video of the speakers to enhance its overall appeal (versus slides with audio only) along with clips which demonstrated a new coaching technique that were incorporated into the event.

*Question #6 – The content was relevant to my practice.*  This question was designed to assess whether participants found the content of the session relevant and meaningful to their leadership practice based on the premise that relevance has a direct effect on an adult’s ability to learn and retain (Knowles, 1990). A score of 4.63 (out of 5.00) which is higher than the mean of 4.46 suggested participants recognized the content as relevant and applicable to their practice.

*Question #7 – The content built on my current knowledge.*  This question was designed to assess whether participants perceived if the topics presented built on their current body of knowledge. This is based on the premise that adult learners appreciate the opportunity to have what they already know recognized and to build on that knowledge. Knowles’ (1990) theory suggested that doing so is a foundation of adult learners that promotes learning and retention. A score of 4.49 (out of 5.00) which is slightly higher (.03) than the mean of 4.46 might suggest learners agreed with the statement but requires further exploration.

*Question #8 – I find online sessions a satisfying way to learn.*  This question was designed to serve as the overarching research question of this study on participants’ perception of online learning as a method for educating physician leaders. It was
designed to determine if participants were satisfied with learning in an online environment such as the VLA. While Knowles suggested that motivation was vital to learning, Keller (1987) identified satisfaction as a component of motivation necessary for the adult. A score of 4.51 (out of 5.00) which is higher than the mean of 4.46 suggested that learners are satisfied with online learning as a way to learn. Figure 11 depicts the breakdown of how participants rated this question.

![Bar chart showing satisfaction with online learning](image)

**Figure 11.** Question #8 – Satisfaction with online learning

*Question #9 – I was satisfied with this event.* While Question #8 asked the broad question regarding online learning in general, this question is narrower in scope and asked participants to rate their satisfaction with this specific VLA. A score of 4.55 (out of 5.00) which is higher than the mean of 4.46 suggests that participants were satisfied with this event.

*Question #10 – Please provide any additional comments.* This was an open-ended question to provide participants an opportunity to provide any suggestion or comment they might have that did not fit into the other nine questions. A summary of
these comments will be incorporated into the convergent data analysis later in this Chapter.

The two items that ranked the highest were Question #1 regarding clear objectives (4.70) and Question #6 regarding whether the topic and content were relevant and appropriate (4.63). The lowest scoring items were Question #4 related to interactivity (3.90) and Question #2 related to technical issues (4.39). Figure 12 depicts how participants scored the nine questions.

![Score Breakdown of the Nine Questions](image)

**Figure 12.** Score breakdown of the nine questions

An additional question, apart from the formal set of nine, was added in which participants were asked to document the secret word (coach) which was shown twice during the broadcast. They were alerted at the beginning of the session and asked to pay attention for the word which would appear on their screen during two random times during the session. This was done to discourage multi-tasking and encourage participants to watch the screen (Koegel, 2010). Seventy-four percent (74%) entered the correct
word, 20% left the field blank, and 6% entered an incorrect word such as “pudding” or “couch.”

**Question Analysis by Years of Experience**

Analysis of responses based on participant years of experience as a leader revealed slight variation in results. Question #2 (technical issues) had the greatest variation with a standard deviation of .327 and Question #7 (built on current knowledge) at .289. The remaining questions were similar in their responses with standard deviation ranging from .097 to .192. The data analyzed by participants’ years of experience are summarized in Table 6.

Table 6

**Question Analysis by Participant Years of Experience**

<table>
<thead>
<tr>
<th>Question #</th>
<th>0 to 2</th>
<th>3 to 5</th>
<th>6 to 10</th>
<th>10 to 15</th>
<th>Over 15</th>
<th>Mean</th>
<th>Median</th>
<th>St Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question #1</td>
<td>4.81</td>
<td>4.69</td>
<td>4.64</td>
<td>4.54</td>
<td>4.77</td>
<td>4.69</td>
<td>4.69</td>
<td>0.107</td>
</tr>
<tr>
<td>Question #2</td>
<td>4.52</td>
<td>3.94</td>
<td>4.14</td>
<td>4.27</td>
<td>4.77</td>
<td>4.33</td>
<td>4.30</td>
<td>0.324</td>
</tr>
<tr>
<td>Question #3</td>
<td>4.52</td>
<td>4.31</td>
<td>4.57</td>
<td>4.45</td>
<td>4.46</td>
<td>4.46</td>
<td>4.46</td>
<td>0.097</td>
</tr>
<tr>
<td>Question #4</td>
<td>4.14</td>
<td>3.81</td>
<td>3.86</td>
<td>3.82</td>
<td>4.00</td>
<td>3.93</td>
<td>3.89</td>
<td>0.141</td>
</tr>
<tr>
<td>Question #5</td>
<td>4.62</td>
<td>4.31</td>
<td>4.50</td>
<td>4.36</td>
<td>4.69</td>
<td>4.50</td>
<td>4.50</td>
<td>0.162</td>
</tr>
<tr>
<td>Question #6</td>
<td>4.76</td>
<td>4.63</td>
<td>4.50</td>
<td>4.45</td>
<td>4.92</td>
<td>4.65</td>
<td>4.64</td>
<td>0.192</td>
</tr>
<tr>
<td>Question #7</td>
<td>4.71</td>
<td>4.56</td>
<td>4.00</td>
<td>4.45</td>
<td>4.69</td>
<td>4.48</td>
<td>4.52</td>
<td>0.289</td>
</tr>
<tr>
<td>Question #8</td>
<td>4.60</td>
<td>4.50</td>
<td>4.43</td>
<td>4.36</td>
<td>4.77</td>
<td>4.53</td>
<td>4.52</td>
<td>0.159</td>
</tr>
<tr>
<td>Question #9</td>
<td>4.52</td>
<td>4.50</td>
<td>4.36</td>
<td>4.64</td>
<td>4.77</td>
<td>4.56</td>
<td>4.54</td>
<td>0.154</td>
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<tr>
<td>Mean</td>
<td>4.58</td>
<td>4.36</td>
<td>4.33</td>
<td>4.37</td>
<td>4.65</td>
<td>4.46</td>
<td>4.41</td>
<td>0.144</td>
</tr>
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<td>Median</td>
<td>4.60</td>
<td>4.50</td>
<td>4.43</td>
<td>4.45</td>
<td>4.77</td>
<td>4.50</td>
<td>4.54</td>
<td>na</td>
</tr>
</tbody>
</table>

While there was little overall difference in scoring of the various questions, leaders with less than 2 years *and* those with greater than 15 years rated all questions higher than their colleagues with the exception of Question #3. This trend extended to the mean for all three groups as noted in Figure 13.
Figure 13. Mean score of participants by years of experience as a leader

Question Analysis by Geographical Region

The results of all nine questions were analyzed based on which region of the country the leader was assigned. There was no statistically significant difference in participant scores based on geographical region. Table 7 summarizes findings by region.

Table 7

Question Analysis by Geographical Region

<table>
<thead>
<tr>
<th>Question #</th>
<th>West</th>
<th>East</th>
<th>Southeast</th>
<th>South</th>
<th>Std Dev</th>
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</thead>
<tbody>
<tr>
<td>Question #1</td>
<td>4.50</td>
<td>4.61</td>
<td>4.80</td>
<td>4.67</td>
<td>0.125</td>
</tr>
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<td>Question #2</td>
<td>4.30</td>
<td>4.39</td>
<td>4.50</td>
<td>4.33</td>
<td>0.088</td>
</tr>
<tr>
<td>Question #3</td>
<td>4.60</td>
<td>4.28</td>
<td>4.48</td>
<td>4.33</td>
<td>0.145</td>
</tr>
<tr>
<td>Question #4</td>
<td>3.90</td>
<td>3.67</td>
<td>3.95</td>
<td>4.10</td>
<td>0.178</td>
</tr>
<tr>
<td>Question #5</td>
<td>4.48</td>
<td>4.44</td>
<td>4.57</td>
<td>4.50</td>
<td>0.054</td>
</tr>
<tr>
<td>Question #6</td>
<td>4.70</td>
<td>4.56</td>
<td>4.81</td>
<td>4.33</td>
<td>0.207</td>
</tr>
<tr>
<td>Question #7</td>
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<td>4.28</td>
<td>4.71</td>
<td>4.53</td>
<td>0.176</td>
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<td>Question #8</td>
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<td>4.66</td>
<td>4.33</td>
<td>0.175</td>
</tr>
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<td>4.66</td>
<td>4.43</td>
<td>0.104</td>
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<td>Mean</td>
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<td>4.37</td>
<td>4.57</td>
<td>4.39</td>
<td>0.092</td>
</tr>
<tr>
<td>Median</td>
<td>4.48</td>
<td>4.44</td>
<td>4.66</td>
<td>4.33</td>
<td>0.137</td>
</tr>
<tr>
<td>N</td>
<td>30</td>
<td>55</td>
<td>61</td>
<td>20</td>
<td>na</td>
</tr>
</tbody>
</table>
Qualitative Component of the Study

For the qualitative component of the study, telephone interviews were conducted with eight participants who identified themselves as leaders within the physician company which is organized into four geographical regions. Two participants were selected per region; each of whom had viewed the virtual leadership academy in 2013. There were six males and two females. After exchanging greetings, the researcher explained the interview process and what to expect during the call. All participants were then asked the following nine questions related to the virtual leadership academy and virtual learning in general:

**Logistics**
1. Describe your experience with the technical aspects of the VLA.
2. Describe when, where, and how you viewed the VLA.
3. How difficult was it to focus without multi-tasking?

**Design Features**
4. What design features (appearance of what you viewed & heard) were most helpful?
5. Regardless of content, describe your perception of two approaches (studio v. classroom).

**Content**
6. Explain your impression of the topics covered in the VLA.

**Overall**
7. Describe your level of satisfaction with the VLA.
8. Tell me what you liked about the VLA.
9. Tell me what you disliked about the VLA.

**Results**

All eight leaders participated in the interviews and were asked the same questions. The audio recordings were transcribed and then exported into Microsoft Word®. NVivo® Version 10 and Microsoft Excel were then used to organize the data. After an
initial review and analysis of interview data and the researcher’s notes, data were examined by question and 20 segment codes were then identified by extracting phrases from the interview responses. The codes were then assigned to one of six themes. The interviews contained an average of 19.5 coded segments, ranged from a minimum of 12 to a maximum of 30, and every transcript contained at least one code.

Initial Analysis by Interview Question

Question #1 - Describe your experience with the technical aspects of the VLA.
This question was similar in structure and rationale to Question #1 in the online survey. Eighty-eight (88%) of participants reported no technical issues and described the process as “very easy,” “simple,” and “not much work at all.” One participant experienced “inconsistent streaming” and pointed out how any technical issue might create a temptation to multi-task.

Question #2 - Describe when, where, and how you viewed the VLA? This question was asked to determine where participants watched and on what device. While in traditional classes, the instructor sets the stage and creates the environment for learning, in an online course this is the sole responsibility of the student. This question sought information on what type of environment the students chose. Three out of eight participants (38%) watched at home, three out of eight (38%) watched in an office, and two out of eight (25%) watched while traveling. Three watched on a desktop (38%), two watched on a Mac computer (25%), two on a laptop computer (25%), and one on iPad (13%). The location and viewing source are factors for future planners to consider.

Question #3 - How difficult was it to focus without multi-tasking? This question was asked to determine the degree to which participants allowed outside distraction to
compete for their attention. Five out of eight (63%) reported that it was “very hard,” one participant (13%) reported slight difficulty, and two had no problems by turning off the phone or using headphones. Two participants mentioned the use of the secret word as helpful in keeping their attention and preventing attention while one person mentioned videos and another mentioned quality speakers as other incentives to focus.

**Question #4 - What design features (appearance of what you viewed & heard) were most helpful?** This question was asked to elicit feedback from participants on what audiovisual features (what appeared on the screen and through their speakers) were most appealing and helpful. All eight of the participants (100%) cited videos and the ability to “see the speakers” as most helpful. One participant described the feature of having slides and videos “side-by-side” as beneficial with another who cited the “professional, visually appealing” look to the broadcast. The results from this question underscored the importance of incorporating multimedia into educational sessions and is consistent with Mayer’s (2007) theory of multimedia learning.

**Question #5 - Regardless of content, describe your perception of the two approaches---in studio vs. in classroom.** This question was asked to determine if participants had a preference toward one of two methods of delivery. One approach involved filming in a formal production studio in which the speakers stood in front of a green screen and faced directly into the camera. The second option filmed in a simulated classroom setting in which the presenters stood in front of a group of students to make it appear to those who would watch the video that a class was in session and to create the sense that they were in the back of the room. Four participants (50%) preferred the classroom style. Two (25%) had no preference in approach. Two (25%) preferred the
studio over the classroom, as one participant described it “because they’re looking right at you.” One participant also mentioned the importance of ensuring “variety” as part of the approach.

*Question #6 - Explain your impression of the topics covered in the VLA.* This question was to gauge if participants perceived the topics and content as relevant. All eight (100%) of the participants described the content as relevant using terms such as “appropriate,” or “hitting the mark.” At least two participants commented that a virtual program would work for “any topic.” Four (50%) reported that the material was “repetitive” to them having heard it in at least on other venue within the last year.

*Question #7 - Describe your level of satisfaction with the VLA.* This question was similar to one asked in the online survey and sought to gauge participants’ overall satisfaction with virtual learning. All eight participants (100%) spoke favorably of the virtual learning academy. Two described themselves as “very satisfied” while others quantified their satisfaction as “9 out of 10” or “4.5 out of 5.”

*Question #8 - Tell me what you liked about the VLA.* This question was designed to drill down further from question number seven. Six out of eight (75%) cited convenience as the top benefit of virtual learning including “not having to travel” and being able to “watch anytime, anywhere.” One participant mentioned that having access to downloadable event resources (attached to the broadcast) was helpful – although one leader mentioned that having access to them so early in the broadcast created a temptation to wander from the main content to download them instead of watching.

*Question #9 - Tell me what you disliked about the VLA.* This question was to complement Question #8 and sought to determine what features participants identified to
improve the virtual learning academy. Three participants out of 5 (60%) recommended making it shorter, one (13%) suggested placing resources toward the end, one encouraged planners to ensure quality speakers, four suggested less repetitive topics, one suggested more interaction, and one suggested granting CME for the sessions. There was no common theme identified as a dissatisfier among the eight participants. Table 8 depicts the most common satisfiers and dissatisfiers participants mentioned.

Table 8
Common Satisfiers and Dissatisfiers among Participants

<table>
<thead>
<tr>
<th>Participant Satisfiers</th>
<th>Participant Dissatisfiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Common Satisfier: Convenience</td>
<td>Most Common Dissatisfier: None</td>
</tr>
<tr>
<td>- Ease-of-use</td>
<td>- Less repetition</td>
</tr>
<tr>
<td>- Ability to watch remotely</td>
<td>- More interaction</td>
</tr>
<tr>
<td>- Cost-savings</td>
<td>- Offer CME credit</td>
</tr>
<tr>
<td>- Downloadable resources</td>
<td>- Ensure quality speakers</td>
</tr>
<tr>
<td></td>
<td>- Place resources at the end</td>
</tr>
</tbody>
</table>

Thematic Analysis

After completing the data analysis of the interviews by question, the researcher then examined the transcripts in NVivo®. Six themes emerged from the 20 coded segments---type of content, method of delivery, limitations of virtual education, benefits of virtual education, preferred design features, and overall satisfaction (See Table 9). These themes captured and unified the core of the interviews into a more meaningful whole (Polit & Beck, 2010) and made intuitive sense to the researcher.
<table>
<thead>
<tr>
<th>#</th>
<th>Theme</th>
<th>Definition</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Type of Content</td>
<td>The type of educational content that is delivered to the leaders.</td>
<td>Appropriate Subject Matter</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Event Resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Informative (Content)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Repetitive (Content)</td>
</tr>
<tr>
<td>2</td>
<td>Method of Delivery</td>
<td>The method in which the content is delivered to the leadership along with the duration.</td>
<td>Quality Speakers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Interactive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Length of Session</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Preferred Mode (Studio/Classroom)</td>
</tr>
<tr>
<td>3</td>
<td>Limitations of Virtual Education</td>
<td>The aspects of virtual education that participants identified as affecting and potentially limiting their satisfaction with virtual education and ultimately its effectiveness.</td>
<td>Technical Problems</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Multitasking</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>AV Streaming Quality</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mandatory with Deadlines</td>
</tr>
<tr>
<td>4</td>
<td>Benefits of Virtual Education</td>
<td>The aspects of virtual education that participants identified as positively affecting their opinion of virtual education.</td>
<td>Cost-Savings</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ease of Use</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Remote Viewing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Convenience</td>
</tr>
<tr>
<td>5</td>
<td>Design Features</td>
<td>The visual appearance and layout of the virtual academy that participants cited as ideal or contributing to their satisfaction.</td>
<td>Visual Appeal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Secret Word</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Simple Interface</td>
</tr>
<tr>
<td>6</td>
<td>Overall Satisfaction</td>
<td>The participants’ overall satisfaction with the VLA and online learning.</td>
<td>Overall Satisfaction</td>
</tr>
</tbody>
</table>
Theme #1 – Type of Content. This theme, defined as the type of educational content that is delivered to the leaders, emerged as participants recognized the importance of ensuring the subject matter presented in virtual sessions is relevant and applicable to their practice. All leaders seemed comfortable with the subject matter and none cited dissatisfaction with the topics presented, described by one participant as “very appropriate” and “informative” by others. Four participants mentioned that some of the material was “repetitive” which did not appear to de-value their experience but perhaps created an opportunity for them to multi-task since they had heard the material previously. Two individuals cited appreciation for having direct access to downloadable event resources during the event.

Theme #2 – Method of Delivery. A second theme emerged which refers to the method in which the content was delivered to the leaders along with the duration of the session. The participants suggested the critical role that a quality, credible speaker plays in creating a satisfying experience for the learner. The group of eight leaders were divided in their opinion on whether the simulated classroom or a studio shoot was more preferable. While one participant described the classroom style as “just like being there,” another favored the studio because the speakers “were looking right at you.”

A significant finding that emerged from within the second theme was the importance of duration. The majority suggested that focus and brevity was key, and they were united in the need to keep the session under 60 minutes. Three participants suggested 45 minutes while another individual thought 30 minutes was ideal. The common premise was to keep it short, simple, and at least one comment encouraged as much as interactivity as possible.
**Theme #3 – Limitations of Virtual Education.** The aspects of virtual education that participants identified as affecting and potentially limiting their satisfaction developed as a third theme from the interviews. One limitation was the potential for multi-tasking. Five out of eight leaders (63%) acknowledged the difficult temptation to multi-task during the event while the others “turned off their phone” and “put headphones on” to ensure they were focused on watching the event. This is an inherent risk when delivering content virtually which relies on the student to maintain the discipline and focus to avoid distraction. One participant described her support of virtual learning but also acknowledged that “you can’t beat that human interaction.”

A second topic that arose within this theme was related to the technical experience. Two individuals experienced issues---one with “stuttering streaming” and the other with asking a virtual question. The remaining participants described a problem-free event but implied that a smooth technical experience is critical to a successful event.

A third aspect of this theme from two individuals was to ensure participants recognize the importance of viewing the content and to make doing so mandatory along with setting a firmer deadline for watching it. It seems both individuals recognized the value and importance of the subject matter and wanted to ensure that more people were watching and putting the content into practice.

**Theme #4 – Benefits of Virtual Education.** This fourth theme revolved around the aspects of virtual education that participants identified as positively affecting their opinion of the virtual approach. Convenience emerged as a top benefit to the participants. One physician leader described the benefits of being able to watch while at home with his children so he could stop if needed to tend to their needs. Another
participant was an avid iPad™ user and enjoyed the option to watch using that device. The group at-large recognized the advantages of being able to participate in the session from virtually anywhere. As good stewards of company resources, the leaders recognized the cost-savings associated with conducting sessions remotely.

*Theme #5 – Design Features.* The fifth theme included the aspects of the appearance and layout of the virtual academy that participants cited as ideal or contributing to their satisfaction. The group members were complimentary of the visual appeal of the academy and described it as “professional,” “sexy,” “appealing,” and “not just words.” In the past, many had only experienced an audio-only webinar without video or interaction. Their feedback suggested that the addition of video was a welcomed addition. The feature of placing video side-by-side with a graphic-rich PowerPoint was mentioned as another positive aspect of the VLA’s design. The simple “easy to use” interface was also identified as a benefit along with the secret word as a feature that added fun and helped participant’s focus.

*Theme #6 – Overall Satisfaction.* This final theme incorporated participant comments related to overall satisfaction with the VLA and online learning. The group was united in their support for online learning and education describing the concept as “the way to go,” the “wave of the future,” and something we need to do “more of” right way. These eight leaders recognized the ability to broadcast a virtual leadership academy as a benefit and were “satisfied” or “very satisfied” with the online learning as an approach to educating physician leaders.

These six qualitative themes emerged from the analysis of the telephone interviews and provided clarifying insight into the thoughts and opinions of physician
leaders on whether or not learning online is a satisfying approach. All eight participants spoke favorably of the VLA and of the practice of online learning. Their responses to the interview questions along with their impromptu comments suggested their support for online learning as a means of educating physician leaders. This group of leaders identified convenience, cost-savings, and the ability to discuss many topics broadly as top benefits. The majority (63%) recognized their inherent temptation to multi-task and acknowledged how busy lives and schedules compete for their attention. The findings from the analysis of the qualitative interviews converged with the quantitative strand to provide a broadened perspective to the interpretation.

**Convergent Data and Findings**

In this study, the qualitative data from interviews were collected concurrently with online survey data, analyzed separately for results and findings, and then merged to compare data and identify implications (Creswell & Piano Clark, 2011). There were ten quantitative questions (including an open-ended summary question) and nine qualitative interview questions (excluding follow-up or clarifying questions); both sets of questions were arranged by four categories---logistics, design features, content, and overall. Table 10 displays how the two sets of questions relate, compare, and provide greater insight into the study’s research question.

**Logistics**

In the online survey, participants rated the question related to clear, easy, and understandable objectives a 4.93 out of 5.00. In the telephone interviews, while there was no question related to objectives, participants did describe the VLA as “easy to understand” and “straightforward.” The survey score related to technical issues (4.39)
correlated directly with the feedback interview (88%) in which the majority of participants experienced no issues. There were two interview questions which did not have a companion question in the online survey; one related to where they viewed the VLA and the other related to multi-tasking (See Table 9).

**Design Features**

In the quantitative study, 89% of participants (4.49) rated the length of the session as ideal. In the qualitative study, the group identified 60 minutes as the maximum amount of time for an online session and suggested 45 minutes as ideal. Both strands revealed that leaders prefer a short, focused event.

“The amount of interactivity was ideal” was rated 3.90 (78%) which was the lowest rated question in the online survey. This correlated with the comments from the group of leaders interviewed who acknowledged the opportunity for interaction within the learning environment and expressed a desire for enhanced interaction.

“The use of video enhanced my learning” was rated 4.49 (90%) in the online survey which correlated with the interview question “What design features were most helpful?” That question revealed that all eight (100%) of interview participants cited videos as most helpful to their learning experience (See Table 10).

**Content**

There were two questions from the online survey regarding content. One related to the relevance of the material rated 4.63 out of 5.00, and a second which asked if content built on the participant’s current knowledge rated 4.49. Both are consistent with the feedback received during the qualitative interviews in which leaders were asked their
impression of the two topics covered in the VLA. All eight participants (100%) described the content as relevant and “appropriate” (See Table 10).

Overall

Two questions from the online survey correlated to one question from the telephone interviews. “I find online sessions a satisfying way to learn,” rated 4.41, and “I was satisfied with this event,” rated 4.55, correlated with “Describe your level of satisfaction with the VLA and virtual learning,” in which all eight participants (100%) spoke favorably in their words and descriptions of the VLA and the concept of online learning. Six out of eight (75%) cited convenience as the top benefit. When asked about what they disliked (opportunities for improvement) for the VLA, four cited repetitive content, three cited length, and one cited more interaction (See Table 10).
Table 10

Side-by-Side Comparison of Quantitative vs. Qualitative Questions (By Category)

<table>
<thead>
<tr>
<th></th>
<th>QUANTITATIVE SURVEY QUESTIONS</th>
<th>SURVEY SCORE</th>
<th>QUALITATIVE INTERVIEW QUESTIONS</th>
<th>QUANTIFYING QUALITATIVE QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LOGISTICS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Objectives were clear, easy to understand.</td>
<td>4.93</td>
<td>--</td>
<td>1. Describe your experience w/ technical aspects of the VLA</td>
<td>Seven out of 8 (88%) reported no technical aspects</td>
</tr>
<tr>
<td>2. I experienced no technical issues.</td>
<td>4.39 (88%)</td>
<td>--</td>
<td>2. Describe when, where, &amp; how you viewed the VLA?</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>--</td>
<td>--</td>
<td>3. How difficult was it to focus without multitasking?</td>
<td>Five out of 8 (63%) reported it was very difficult to avoid multitasking.</td>
</tr>
<tr>
<td><strong>DESIGN</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Length of the session was ideal</td>
<td>4.49 (89%)</td>
<td>--</td>
<td>4. What design features were most helpful?</td>
<td>Eight out of 8 (100%) cited videos as most helpful.</td>
</tr>
<tr>
<td>4. The amount of interactivity was ideal.</td>
<td>3.90 (78%)</td>
<td>4.40 (89%)</td>
<td>5. Regardless of content, describe your perception of the two approaches---in studio and in classroom.</td>
<td>Four preferred classroom; 2 preferred studio; 2 had no preference.</td>
</tr>
<tr>
<td>5. The use of video enhanced learning.</td>
<td>4.49 (90%)</td>
<td>4.49 (90%)</td>
<td>6. Explain your impression of the topics covered in the VLA---EI, and cup-of-coffee conversations.</td>
<td>Eight out of 8 (100%) described the content as relevant and appropriate.</td>
</tr>
<tr>
<td><strong>CONTENT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Content was relevant to my practice.</td>
<td>4.63 (93%)</td>
<td>4.63 (93%)</td>
<td>7. Describe your level of satisfaction with the VLA &amp; virtual learning.</td>
<td>Eight out of 8 (100%) spoke favorably of VLA.</td>
</tr>
<tr>
<td>7. Content built on my current knowledge.</td>
<td>4.49 (90%)</td>
<td>4.55 (91%)</td>
<td>8. Tell me what you liked about the VLA.</td>
<td>Six out of 8 (75%) cited convenience</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9. Tell me what you disliked about the VLA.</td>
<td>Three cited length, 1 cited more interaction, 4 cited repetition. No theme.</td>
</tr>
<tr>
<td><strong>OVERALL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Comparing the quantitative questions from the online survey to the qualitative questions from the telephone interviews provided an opportunity to corroborate findings from the two different methods and provide a more complete understanding of the analysis.

**Discussion**

This study explored the various features and components of a virtual leadership academy for physicians. The researcher surveyed 166 physician leaders online and interviewed eight physician leaders by telephone to determine their level of satisfaction with online learning as an approach to educating physician leaders. The results from both strands supported the concept that online learning is an acceptable and satisfying way for physicians to learn. The survey results provided quantitative data including a mean score of 4.51 (out of 5.0) for the question “I find online learning a satisfying way to learn” and 4.63 (out of 5.0) for the question “Content was relevant to my practice.” These scores were supported by feedback from the qualitative interviews in which eight out of eight (100%) of the participants provided spoke favorably of the VLA and the concept of virtual learning. Several offered unsolicited quantification of their views by stating they would give it a “9 out of 10,” or “4.5 out of out 5.” Others suggested that virtual meetings and education would work for nearly “any topic” and is definitely the “way to go.” An additional perspective was to examine verbatim comments that were offered by those who completed the online survey. Table 11 summarizes the highlights of those comments as they correlate to the qualitative interview comments.
<table>
<thead>
<tr>
<th>Quantitative Questions</th>
<th>Quotes from Corresponding Qualitative Interviews</th>
<th>Open-Ended Comments from Quantitative Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Logistics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Objectives were clear &amp; easy to understand.</td>
<td>“Do what they are intended to do (SR01).”</td>
<td>“Straightforward”</td>
</tr>
<tr>
<td></td>
<td>“Simple (LJ03)” and “Easy (GJ04)”</td>
<td>“Clear”</td>
</tr>
<tr>
<td>2. I experienced no technical issues.</td>
<td>“No problems (TS06).”</td>
<td>“It hung up about 38 minutes into it.”</td>
</tr>
<tr>
<td></td>
<td>“It was very easy (CM08).”</td>
<td>“Problem buffering on iPad.”</td>
</tr>
<tr>
<td></td>
<td>“Some minor issues with stuttering video (MC05).”</td>
<td>“Could not view on smartphone.”</td>
</tr>
<tr>
<td><strong>Design Features</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Length of the session was ideal.</td>
<td>“Shorter is better (HR02).”</td>
<td>“Concise is good.”</td>
</tr>
<tr>
<td></td>
<td>“Short is good (WK07).”</td>
<td>“Keep it at 30 minutes.”</td>
</tr>
<tr>
<td></td>
<td>“Maybe 30 minutes (MC05)”</td>
<td></td>
</tr>
<tr>
<td>4. The amount of interactivity was ideal.</td>
<td>“The secret word helped focus my attention (CM08).”</td>
<td>“I watched! But I Never saw the secret word.”</td>
</tr>
<tr>
<td></td>
<td>“More interaction (WK07)”</td>
<td>“No thanks on the secret word.”</td>
</tr>
<tr>
<td></td>
<td>“A better way to ask questions (TS06).”</td>
<td>“Not enough interactivity.”</td>
</tr>
<tr>
<td>5. The use of video enhanced learning.</td>
<td>“Embedded (videos) were most compelling (SR01).”</td>
<td>“Video session was quite revealing.”</td>
</tr>
<tr>
<td></td>
<td>“Live video conference was best (LJ03).”</td>
<td>“My video kept freezing.”</td>
</tr>
<tr>
<td><strong>Content</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Content was relevant to my practice.</td>
<td>“I think they were both appropriate subject matter (CM08).”</td>
<td>“Great review!”</td>
</tr>
<tr>
<td></td>
<td>“Any topic can lend itself to a virtual approach (GJ05).”</td>
<td>“Very applicable to my job.”</td>
</tr>
<tr>
<td></td>
<td>“On the money.”</td>
<td>“Content was relevant.”</td>
</tr>
<tr>
<td>7. Content built on my current knowledge.</td>
<td>“Some stuff is a repeat (MC08).”</td>
<td>“Just the right amount &amp; tone.”</td>
</tr>
<tr>
<td></td>
<td>“I had it double (LJ03).”</td>
<td></td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I find online sessions an effective way to learn.</td>
<td>“Any topic can lend itself to a virtual approach (GJ05).”</td>
<td>“Great way to disseminate information.”</td>
</tr>
<tr>
<td></td>
<td>“It works pretty well (HR02).”</td>
<td></td>
</tr>
<tr>
<td>9. I was satisfied with this event.</td>
<td>“Very satisfied with it (LJ03).”</td>
<td>“Good information without wasting my time.”</td>
</tr>
</tbody>
</table>
CHAPTER 5. CONCLUSION

The first four chapters articulated the development of this study of an alternative method for educating physician leaders. This Chapter reviews the study and discusses its findings, interprets them, and describes implications from the data analysis.

Overview of the Study

This study was an investigation of participant perception on the use of an online learning approach for developing physician leaders. Advances in technology allow learning to occur at a distance from anywhere in the world enabling participants to take part in educational programs over the internet using a computer, iPad, smartphone, or any device with a browser (GoToWebcast, 2013; Ryan et al., 2007). This study applied adult learning principles from Knowles (1990) and research from literature on optimizing multimedia learning (Simon, 2013; Mayer, 2007) to determine if a group of physician leaders were satisfied with such an approach for their own learning and development.

Research Question

While the study did not directly explore effectiveness of learning or retention of information, participant satisfaction was identified as a core element of learner motivation and ultimately effectiveness (Bradford, 2011). The stated research question, identified at the outset of the study: *What is the level of participant satisfaction of an online learning academy as an approach to developing physician leaders?*

Purpose of the Study

A virtual leadership academy (VLA) was developed to exploit the advances in technology along with a perceived interest from participants to engage in a new learning approach and a need to manage the high cost of delivering leadership development in a
traditional manner. An analysis of the development and implementation of the VLA served as the primary subject for this study.

**Review of Methodology**

This was a mixed methods, convergent parallel study in which an online survey provided quantitative data while personal interviews contributed to the qualitative component of the study. The two strands were then merged into an overall interpretation during the analysis phase to bring greater insight into the research question (Creswell & Plano Clark, 2011).

**Study Findings**

The results of the study suggested that participants were satisfied and interested in an online learning academy as an approach to their education as physician leaders. Data from the survey indicated a high level of satisfaction in the virtual medium. The quantitative survey results rated their level of satisfaction as 4.55 (out of 5) which was supported by verbatim comments in the survey. The qualitative interviews corresponded with the quantitative data in their direct comments along with their unsolicited quantification of virtual learning which rated it a “9 out of 10,” and a “4.5 out of 5.”

The themes that emerged from the interview transcripts (type of content, method of delivery, limitations of virtual education, benefits of virtual education, preferred design features, and overall satisfaction) and their associated comments also supported the concept of delivering content in a virtual manner. Participants were complimentary of the academy and supportive of the concept, relevant content, and use of video and interactivity; all of which appeared to support their level of satisfaction.
Analysis of the convergent data corroborated the findings of the individual strands when the quantitative score of 4.55 (for overall satisfaction) was compared to the recognition that all eight participants in the qualitative interviews (100%) spoke favorably of the virtual modality and encouraged the broadening of its use.

**Findings Related to Literature**

A review of findings was compared to the literature to provide a robust data analysis and add another dimension to the study. The six themes that emerged from the interviews were coupled with the survey data for this review.

*Type of Content* – The type of subject matter presented emerged as a theme in the study and seemed to be an aspect that contributed to participants’ satisfaction. Their comments suggested that content should be appropriate and informative which is supported by components of Knowles’ theory (1990) and others which emphasized the role of relevant and meaningful content (Pullen, 2013). An aspect of this theme suggesting that some material was repetitive was reported by some participants in the study. They suggested such repetition was potentially distracting and could encourage multitasking (because they had heard it before). While a tenet of adult education is to build on existing knowledge and to occasionally employ repetition, some participants acknowledge that it can take away from their learning and lead to multitasking (especially in a virtual classroom) (Caffarella, 2002).

*Method of Delivery* – The method and manner in which the subject matter was presented emerged as a theme. In general, the participants seemed to find the speakers satisfactory and appeared to have no preference for the studio or classroom as the mode of delivery. While some leaders acknowledged the classroom as more “dynamic,” others
preferred the studio citing direct eye contact from the speakers. Little information is available in the research related to these aspects. The participants’ preference for a short, focused and interactive session is supported extensively in the research (Koegel, 2010; Mayer, 2007; Simon, 2013). Sixty minutes seemed to be the maximum time for an event that participants considered appropriate with 30 to 45 minutes or less emerging as the desired duration. Koegel (2010) suggested 20 minute intervals for learning blocks and emphasized the role of interactivity to maintain attention, limit multitasking, and enhance retention.

Another aspect of the theme related to the method of delivery was interactivity which arose from the qualitative analysis as the lowest ranking score (3.90 out of 5.00) and the greatest opportunity for improving the VLA. When students interact with their environment, they engage as active participants in their own learning which increases the likelihood of a successful transfer of knowledge (Bradford, 2011; Caffarella, 2002). In this study, the potential for interaction was limited by the software and the decision to broadcast in a faux-live manner. Polling, a question-and-answer button, and an end-of-session survey were incorporated into the VLA; all of which were mentioned in the study as positive aspects. In a true live event, there is a much greater opportunity to use polling, questions, and social media (Stanford University & GoToWebcast, 2013). Koegel (2010) suggested the practice of requesting participants express their commitment to watch, learn, and engage by typing their initials in the chat function or email. Doing so through Twitter® might be an effective alternative approach to consider for future events.

*Limitations of Virtual Education* – Three categories arose under the theme in which participants identified aspects of the VLA that might limit participant satisfaction—the
potential for technical problems, for participants to multi-task during the event, or for participants to not be held accountable to watch the event by the deadline.

Personal intuition suggested if participants experienced difficulty with the technical aspects of a virtual session that it could negatively affect their satisfaction with the event. This perception was supported by Koegel (2010) who suggested selecting a platform that complements the desired message and will enhance its delivery and not distract from it. This study revealed few technical problems in the verbal comments or the online survey, and while the qualitative score for the question related to technical issues was lower than the mean, it was a respectable score of 4.39 out of five. The minor issues experienced by some viewers did not appear to affect the overall participant satisfaction, but one might consider if the severity or prevalence of issues were greater, they might have a negative impact on the VLA experience.

Potential for multitasking was a second aspect identified by participants as a possible limitation of virtual education. Koegel (2010) cited a study by Forbes in which 58% of professionals admitted to engaging in other activities such as checking email or looking at their phone during digital meetings. This recognition correlated with participants in this study, 63% of whom acknowledged that it was difficult to focus on content without multi-tasking. While a few participants mentioned the use of a “secret word” as helpful in focusing their attention, it is unclear to what degree this tool played in focusing the larger group. The use of video, a varied delivery style (classroom vs. studio), and interactivity (polling and online questions) were designed to mitigate multitasking.

Benefits of Virtual Education – The features the VLA participants identified as benefits emerged as a theme. In addition to acknowledging the cost savings, participants
recognized convenience, ease-of-use, and ability to watch when and where they wanted (autonomy) as a benefit and a major contributor to their satisfaction. This recognition along with the role of interactivity, relevance, and clear purpose and objectives were supported by the Sloan Model for online learning (Bradford, 2011; Pullen, 2013).

*Preferred Design Features* – The participants concurred with Mayer (2007) who promoted the use of relevant multimedia and graphics to enhance learning in the classroom. The use of video was cited by all eight interview participants in the interview and scored this item above the mean in the survey study. The research is mixed on whether broadcasting video and slides side-by-side is more effective than alternating them one after the next, but using slides that are low density, simple, and with relevant graphics is optimal (Strauss, Corrigan, & Hofacker, 2011). While relevant multimedia might enhance learning by triggering dual-encoding (Simon, 2013), excessive or irrelevant material might distract from retention (Mayer, 2007). A challenge for planners is to incorporate design features that users appreciate that also enhance their learning.

*Overall Satisfaction* – The final theme that arose was related to the participants’ overall experiences with the online learning environment. Feedback that led to this theme arose from nearly every question in the online survey and telephone interviews. The feedback that emerged from the study concurred with the elements of the Sloan model for online learning satisfaction which includes reduced ambiguity (clear objectives), enhanced sense of value (relevance), reduced ambivalence (motivation to learn), clarified rules (clear expectations), a responsive learning environment (supportive platform), interactive learning, and increased latitude (autonomy) (Bradford, 2011).
Unanticipated Results

While there is always uncertainty on what a study will discover and while there were no preconceived thoughts on what the participants’ opinions might suggest, a few observations arose that surprised the researcher:

- **Overall response.** While the researcher had suspected that participants would express a positive opinion of the virtual learning experience, the degree to which they did was surprising. Emergency physicians are highly intelligent, busy professionals and are known for expressing their opinions. The overwhelmingly positive opinions expressed in both data strands were significant.

- **Junior and senior leaders scoring.** The recognition that readers with two or fewer years of experience scored the quantitative survey similarly to leaders with greater than 15 years was a second interesting development. There is no apparent explanation for the similar scores and perhaps an observation for future research.

- **Repetition.** The opinion that emerged during the study that some of the material was repetitive and such repetition might lead to multi-tasking never occurred to the researcher. Instead, the program was developed on the premise that a learner might do well by hearing the same or similar information more than once for optimal effectiveness in learning and retention.

- **Secret word.** Asking participants to watch for a secret word seemed straightforward. The fact that 26% of participants could not correctly identify the secret word that was shown twice was higher than anticipated, perhaps suggesting a greater opportunity to confront multi-tasking.
• *Viewing device.* The use of iPads and smartphones has increased dramatically in recent years. It was thought that more viewers would watch using either of those devices. The fact that most (87%) used a desktop or notebook was surprising.

• *Accountability with a deadline.* The recognition by some participants that there is a need to hold all leaders accountable to watch the VLA by a strict deadline was something the researcher would not have predicted. This is perhaps a reflection of the value that some leaders who watched place on the content by wanting every other leader to watch and within a set timeframe.

**Implications and Recommendations**

Based on the analysis and interpretation of the convergent data in this study and related research, planners should consider seven tactics when developing a virtual learning event such as a leadership academy for physicians:

1. *Plan well.* Participants rated the experience positively and acknowledged satisfaction with the event and its features which is likely a result of good planning. This preparation includes selection of a reliable vendor to ensure the technical aspects are minimized and that the overall experience is optimized.

2. *Select relevant topics.* The topics presented virtually in this study were perceived of value to the participants and tactics they could apply to their everyday practice. Participants are much more likely to pay attention and to engage in their own learning if the topic is perceived as adding value to their lives.

3. *Ensure quality speakers.* The characteristics of an effective in-person instructor are not necessarily the same as those required for someone presenting online. Select speakers who are comfortable in front of a camera and who can engage the
audience with their voice and delivery. Monotone, boring speakers who present in a non-captivating manner will detract from the message and encourage participants to drift from the screen and multi-task.

4. *Keep it short.* Literature and data from this study suggest a short, focused version is preferred by physician leaders. While the ideal duration is unclear, 30 to 45 minute appears to be an acceptable starting range while 60 minutes is considered too long. An innovation to consider is to develop brief learning “nuggets” that are 10 minutes in duration and focused on a single topic.

5. *Incorporate relevant videos and multimedia.* The use of videos was clearly a major advantage of the VLA. Program planners should incorporate the use of relevant video and multimedia material into educational events.

6. *Incorporate interaction.* Participants appreciate and learn best when actively engaging in an activity. Use polling, chatting, question-and-answer, games, or any innovation that increases the ability for the participants to interrelate with their surroundings.

7. *Use variety.* Vary the design and approach of the learning environment to maintain a high level of energy in the virtual classroom, to engage students actively, and to encourage their attention.

Findings from this study and related research provide the foundation for the acronym BELIEVER which provides eight specific suggestions for planners to consider when developing a virtual learning event for leaders, such as a webinar or leadership academy:
- Brief – Sessions should be 60 minutes or less with 20 minute blocks.
- Easy – Ensure access to the event is simple and easy to navigate.
- Linked to action – Planners should ask, “What will they do with the information?”
- Interactive – Incorporate polls, chat, questions, or other ideas to encourage interaction.
- Engaging – One of the primary principles should be to keep the learner’s attention.
- Visual – Incorporate graphics and videos that are relevant and non-distracting.
- Effective Speakers – Use strong, engaging speakers who are comfortable on camera.
- Relevant – Focus online sessions on topics that are applicable to the learner.

**Suggestions for Future Research**

Suggestions for research studies include conducting a study that explores the effect of online learning on retention of information or job performance to answer the question, “Does this make a difference?” Another potential study could compare the benefits of online learning versus the traditional classroom. A third concept would conduct a survey with a larger group or participants from more than one organization. Possible opportunities for future studies include the use of a different vendor, varying the length of the session, incorporating additional interactivity or videos, and considering a live broadcast (versus taped, faux live, or a combination).

**Conclusions**

Roberts (2010) suggested that quantitative surveys ask *what* while qualitative interviews ask *why*. In this study, the online questions answered *what* the participants’ level of satisfaction were, the interview questions answered *why* they seemed to like it, and the convergent analysis examined aspects of *what* and *why* in a deeper, probative manner.
While it is difficult to predict what the future holds for education, and specifically leadership development, the use of technology is likely to be part of it in some way.

This study supports the concept that physician leaders generally accept the use of technology to provide virtual learning as an approach to their own development, with some caveats and conditions that were outlined in this report. Adult learners, especially physician leaders, appreciate learning material that is new, and meaningful. They are open to new methods of learning as long as it short, focused, valuable, does not waste their time, and incorporates variety. Future studies should explore other vendors and options available to build on the extensive motivation of physicians to learn to explore a robust virtual learning academy.
References


Stolovitch, H. D., & Keeps, E. J. (2012). *Telling ain't training.* (2nd ed.). Alexandria: ASTD.


## Appendices

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Appendix A
Leadership Competencies

High-performing leaders are vital to the overall success of our organization. To that end, TeamHealth physician and client service leaders must retain competency in an array of skills. They include:

People

☐ Attracting, recruiting, & retaining high performance practitioners.

☐ Building an effective team.

☐ Coaching & mentoring others.

☐ Managing conflict and holding difficult conversations.

☐ Communicating with other leaders & the c-suite.

Transformation & Execution

☐ Managing complex change.

☐ Application of healthcare policy, rules, and regulations.

☐ Solving problems in specific situations (situational leadership).

☐ Working knowledge of healthcare policy & finance.

☐ Managing projects and executing goals.

Operational Leadership

☐ Managing patient flow.

☐ Managing the patient experience.

☐ Using metrics to lead (Result-based leadership).

☐ Synergy with other service lines.
Appendix B
Quantitative Survey Invitation

NEW Virtual Leadership Academy training is now available!

The latest Virtual Leadership Academy training is now available on-demand, anytime, anywhere.

This 40-minute interactive training session offers tactics to help TeamHealth leaders manage moderate performance issues through corrective conversations. And, because these conversations may pose challenges, the training introduces the concept of emotional intelligence and provides practical tips to help leaders improve emotional intelligence through self-awareness.

View the Training Now by Clicking [HERE].

Topics include:
Managing Performance:
Corrective Conversations
Presented by Wolf Schynoll, MD, FACEP, Vice President for Performance Improvement

Emotional Intelligence
Presented by Theresa Tavenero, RN, CEN, MBA, Senior Vice President of Client Services

Moderated by
Eric Heckerson, RN, MA, Vice President of Operational Performance

TeamHealth Regional Medical Directors (RMDs) and Facility Medical Directors (FMDs) are invited to view the training. To facilitate participation and collaboration, RMD leaders are encouraged to view the training with their respective FMD teams, if possible. All FMD and RMD leaders should complete the training and course evaluation by November XX, 2013.

You will be asked to participate in a survey after viewing the online academy. Your input will be used to improve the quality and content of future education programs at TeamHealth. It will also contribute to a doctoral research project. In the study, your confidential and anonymous feedback will assist in exploring if online learning is an acceptable method of developing physician leaders. Should you have any questions, you can contact Eric Heckerson directly at 802.791.6416. The study is being conducted with the approval of the Creighton University Institutional Review Board (IRB) which can be contacted if needed at 402.280.2126.
Appendix C
Qualitative Survey Invitation

DATE:

Dear Participant

Thank you for agreeing to participate in an in-person or telephone interview regarding the recent Virtual Leadership Academy (VLA) presented by TeamHealth. This letter serves as confirmation of your willingness to share your insights and opinions in a brief (15 to 20 minutes) conversation.

Your input will used be to improve the quality and content of future education programs at TeamHealth, and it will also contribute to the research as part of my doctoral dissertation. In the study, I am exploring if online learning is an acceptable method of developing physician leaders. I am excited to be working on such a project which could provide insight into developing new ways of educating and developing leaders.

Your participation in the interview is voluntary, and your responses will be kept confidential and anonymous as outlined in the study design. Should you have any questions, you can contact me directly at 602.791.6416. I am conducting the study with the approval of the Creighton University Institutional Review Board (IRB) which can be contacted if needed at 402.280.2126.

Again, thank you for your interest and willingness to participate and speak with me.

Sincerely,

Eric W. Heckerson EdD(c), RN, MA, FACHE
Appendix D
Sponsoring Organization Agreement

Creighton University
2500 California Plaza
Omaha, NE 68178

August 28, 2013

Creighton University Institutional Review Board:

We are familiar with Eric Heckerson’s research project on the Participant Satisfaction of an Online Learning Academy as an Approach to Developing Physician Leaders. I understand TeamHealth’s involvement is limited to the facilitation of an online survey as part of a virtual academy and follow-up interviews with select participants.

We understand that this research will be carried out following sound ethical principles, that participant involvement in the study is voluntary and that confidentiality of participant’s research data is ensured, as described in the protocol.

Therefore, as representative of TeamHealth, I agree that Eric Heckerson’s research project may be conducted at our organization.

Thank you,

[Signature]
Barbara Blevins
Chief Operating Officer
Hospital Based Services
TeamHealth, Inc.
Appendix E
IRB Approval Letter

October 10, 2013

Eric W. Heckerson, Ed.D(c), RN, MA, FACHE
Graduate School
Department of Interdisciplinary Leadership

RE:
IRB #: 13-1847
TITLE: PARTICIPANT SATISFACTION OF AN ONLINE LEARNING ACADEMY AS AN APPROACH TO DEVELOPING PHYSICIAN LEADERS

Dear Mr. Heckerson

Thank you for submitting the above mentioned proposal to the Institutional Review Board office for review. This project has been determined to be exempt from Federal Policy for Protection of Human Subjects, as per 45CFR46.101 (b) 2. This IRB approval is for a 3 year period. The following documents were received, reviewed, and approved:

2. Study Design (No Date)
3. “Dear Participant” letter
4. Invitation Letter
6. Virtual Leadership Academy (VLA) Online Survey Questions (with identifiers removed)
7. Virtual Leadership Academy (VLA) Face-to-Face or In-Person Interview Questions

Continued approval is conditional upon your compliance with the following requirements:

1. Compliance with the Creighton University IRB policies and procedures
2. Problems must be reported using the Reporting Form for Reportable New Information. Problems requiring report can be found in the IRB Policy 134 “Reportable New Information”
3. All protocol amendments and changes to approved research must be submitted to the IRB and not be implemented until approved by the IRB. Please use the modification form when submitting changes to protocol or consent documents.
4. This study cannot continue after the expiration date, which is October 9, 2014.
5. You are required to submit a renewal/termination prior to this date. If you wish to continue the project, the renewal must be in the IRB office on or before the expiration date.

If you should have questions during the course of this project, please call the IRB office at (402) 280-2126 and one of the administrators will assist you, or you may email the office at irb@creighton.edu.

Sincerely,

Christine Scheuning, B.S.
IRB Administrator

The Creighton University is fully accredited by the Association for the Accreditation of Human Research Protections Program, Inc. (AAHRPP)

Creighton University has an Assurance on file with the Department of Health and Human Services: Assurance Identification No. FWA 00001078, the expiration date: July 6, 2016

IRB Registration Numbers: IRB #1Biomedical IRB # IRB00000155. (Expiration July 13, 2015); IRB #2 Social Behavioral IRB # IRB20097 (Expiration July 13, 2015)

Creighton University has an Assurance on file with the Food and Drug Administration (FDA)
Assurance Identification No. FWA0001078, the expiration date July 6, 2016
IRB Registration Numbers: Registration/Identification No IRB00000155