

Organizational Perspectives on Online Programming

Implementation in Three Traditional High Schools

A DISSERTATION

SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL  
OF THE UNIVERSITY OF MINNESOTA

BY

Dana Darice Luehr

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF  
DOCTOR OF EDUCATION

Dr. Joyce Strand, Adviser, Dr. Susan Damme, Co-Adviser

April 2011

© Copyright 2011 by Dana D. Luehr

## **Acknowledgements**

I wish to thank and acknowledge my advisor, Dr. Joyce Strand, who provided critical guidance and feedback throughout the research process. A special thanks to my co-advisor, Dr. Susan Damme, who provided countless hours of review, suggestions, support, and friendship from beginning to end of this project. I wish to acknowledge her brilliance and commitment to excellence. I also wish to thank my other committee members, Dr. Jean Stevenson, and Dr. Linda Deneen, for their willingness to share their academic expertise and advise which was welcomed and valued. A special thanks to the school districts and personnel involved in this research study. You provided access to your sites and were willing to share experiences regarding online learning implementation in your high schools, making this study possible. I would further like to thank the administration and faculty of my own school district for their support and encouragement and a shared vision of improving public education. A special acknowledgement to Shelley McCauley Jugovich who introduced me to the world of online teaching and learning. I would additionally like to thank the faculty and my fellow colleagues of EdD Cohort 1. We individually embarked on this degree with uncertainty of the journey but have learned and accomplished so much together. Finally, I would like to thank my friends and family for their understanding of my dedication to lifelong learning.

## **Dedication**

To my parents: Jack and Genevieve Johnson

To my husband: David Luehr

and

To my children: Christopher, Catherine, and Anna Luehr

## **Abstract**

With the rapid growth of online teaching and learning at the secondary education level, the question of whether online programming should be adopted is being replaced with questions of how online education should be implemented. Research identifying the experiences of online program implementation is lacking. This is especially true for traditional high schools. This qualitative multi-case study has identified the systemic changes experienced by three traditional high schools in the process of establishing online courses as part of their overall curricular offering, the impact online learning options have on organizational policies and procedures, and the factors needed to achieve practical and sustainable models for successful programs. Considering the operational changes online teaching and learning present compared to traditional face-to-face teaching and learning, data from surveys, personal interviews, and document review show numerous motivators for online program implementation. Systemic impact and implications of online programming implementation were dependent on the school culture and capacity developed by administrators and faculty. Organizational policies and procedures were also impacted by the incorporation of online programming. This multi-case study identified factors leading to practical, sustainable, and successful online programs. As traditional high schools implement this educational initiative, administrators, teachers, and policymakers need to be aware of not only the potential of online programming but also the impact this innovation will have on the whole educational system.

**Keywords:** secondary online programming, systems thinking, change, educational policy, sustainability.

## Table of Contents

Acknowledgements.....	i
Dedication .....	ii
Abstract .....	iii
List of Tables .....	viii
Chapter One: Introduction .....	1
Overview.....	1
Statement of Purpose .....	2
Research Questions.....	3
History of Online Learning.....	3
Significance of the Study .....	5
Current research.....	5
Current educational policy .....	6
Study Design.....	8
Setting .....	8
Participants.....	8
Assumptions.....	9
Definitions.....	9
Chapter Two: Literature Review .....	12
Systems Change .....	14
Dynamics of change.....	16
Schools as systems.....	17
Conceptual framework for school change.....	18
Implications for online learning development .....	21
Facing change.....	23
Barriers and issues. ....	26
Educational Policy .....	28
Historical overview.....	29
Impact of policy on school systems.....	34
Policy recommendations for e-learning.....	37

E-learning policy issues .....	41
Practical and Sustainable Online Models .....	42
Nature of sustainability.....	42
Planning for sustainability.....	44
The disruptive innovation theory.....	46
A Learning Model for the 21 <sup>st</sup> Century.....	49
Misconceptions and myths.....	49
Elements of successful and practical models.....	50
Content providers.....	51
Statewide virtual schools.....	51
Cyber charters.....	51
Consortium.....	51
College- or university-based.....	51
Private providers.....	52
Local school district.....	52
Curriculum.....	52
Professional development and teacher quality.....	53
Technology infrastructure.....	55
Management and support services.....	56
Costs and financing.....	56
Chapter Summary .....	58
Chapter Three: Methodology and Research Approach.....	61
Study Design.....	61
Research Sample .....	64
Overview of Information Needed .....	65
Contextual information.....	66
Demographic information.....	66
Perceptual information.....	66
Theoretical information.....	67
Research Design Overview.....	67

Data Collection Methods .....	68
Phase I: Survey. ....	68
Phase II: Interviews.....	69
Interview questions. ....	70
Interview process. ....	70
Confidentiality and anonymity. ....	71
Data Analysis and Synthesis.....	72
Issues of Trustworthiness.....	73
Credibility. ....	74
Dependability.....	74
Confirmability.....	75
Transferability.....	75
Limitations of the Study.....	76
Chapter Summary .....	77
Chapter Four: Findings .....	78
Settings and Participants .....	78
Findings.....	79
Implementation. ....	79
Motivators.....	80
Systemic impact and implications. ....	81
Reactions.....	82
Outcomes. ....	85
Policies and Procedures. ....	85
Financial implications.....	86
Scheduling and enrollment. ....	86
Infrastructure.....	87
Teacher contractual issues. ....	88
Content and curriculum.....	88
Sustainability.....	89
Administrative factors.....	89

Teacher factors.....	91
Student factors .....	92
Financial support.....	92
Chapter Summary .....	93
Chapter Five: Discussion and Conclusions.....	95
The Implementation of Online Programming within Traditional High Schools ..	95
Impact on Organizational Policies and Procedures with Implementation of Online Learning Programs.....	99
Factors Necessary to Create Sustainable Online Programming .....	101
Educational Implications .....	104
Recommendations for Future Research.....	106
Summary .....	107
References.....	108
Appendix A: Institutional Review Board Approval .....	118
Appendix B: Research Request Letter to Superintendents .....	119
Appendix C: Phone Script: Recruitment and Introduction of Study to Subjects.....	120
Appendix D: Consent Form.....	121
Appendix E: Survey Questionnaire .....	123
Appendix F: Interview Questions .....	124

## **List of Tables**

Table 1: Demographics of Research Site.....	78
---	----

## **Chapter One: Introduction**

With the rapid growth of online learning, instructors are faced with the need to develop ways to use the new media available to support their traditional teaching practices. Discussion raised a decade ago by Newberry (2001) about online education continues to be expressed today. The question should no longer be “should we adopt online education?” but “how should online education be implemented?” Investigation within this study identifies the systemic changes experienced as traditional high schools implement online learning programs, and the impact the educational option of online learning has on organizational policies and procedures. The factors needed by traditional secondary schools to achieve success and sustainability with online teaching and learning are identified in this study.

Chapter 1 includes an overview of the issues, statement of purpose, research questions, significance of the study, case study design, description of the study setting and participants, assumptions, and definition of terms. Chapter 2 contains a literature review relevant to the research topic followed by Chapter 3 which provides a description of the methodology and research approach. Chapter 4 presents the research findings and Chapter 5 is a discussion of the research findings concluding with educational implications and recommendations for future research.

### **Overview**

The use of computer technology in K-12 education has been in existence since the mid-1970s. As new discoveries and improvements in computer hardware and software were made available and affordable, schools began to incorporate this new technology at an increasing rate. In 1995, the average school had 72 computers to support instruction,

rising to 136 computers by 2003 (Christensen & Horn, 2008). The Metiri Group (2006) reports states such as Maine, Texas, New Hampshire, and Michigan invested in 1:1 laptop initiatives on a broad scale. With the utilization of computer technology within the teaching and learning process, innovations incorporating this technology began to emerge. For the past decade, an innovation incorporating computer technology that has evolved and grown is online learning programs (Cavanaugh, Barbour, & Clark, 2009).

### **Statement of Purpose**

A review of educational research regarding online programs at the secondary and higher education levels yields a number of studies. Research has focused on student performance, interaction, and perceptions of online learning. Additional online learning research has studied learner support and teacher immediacy behaviors such as timely interaction and feedback with online students. What is lacking however is research identifying sustainable and practical models resulting in successful online learning (Cavanaugh & Blomeyer, 2008).

This study explores three traditional high schools that have established online courses as part of their overall curricular offering. For this study a traditional high school is defined as a brick and mortar building located within a school district and under the control of local government. The purpose of this study is to provide insight into the change process regarding how each of these high schools have established and currently maintain their online programs followed by a comparison across the schools to determine the factors necessary to create practical and sustainable models for successful online learning.

## **Research Questions**

Three questions will be addressed in this study in the context of three traditional high schools:

1. How have these schools adopted and implemented online programs into existing curricular offerings?
2. From an educational policy perspective, how has the incorporation of online programs impacted current organizational policies and procedures within these schools?
3. What factors are necessary to create practical and sustainable models for successful online programs within existing traditional schools?

## **History of Online Learning**

The historical development of online learning has its roots in distance education. Distance education is institutional-based formal education where interactive telecommunications systems are used to connect learners, resources and instructors (Simonson, Smaldino, Albright & Zvacek, 2003). Distance education, where teachers and students are separated by distance, time, or both, has a history dating back more than a century (Tiene & Ingram, 2001). Tiene and Ingram go on to explain distance education, which was originally called correspondence study, was first established through the mail in the early 1880's, then moved into educational radio broadcasts and experienced a revolutionary development with the advent of television in the 1950's. The original target groups of distance education efforts were adults who had occupational, social, and familial commitments (Simonson et al., 2003). With the telephone/speaker phone

developing into audio-conferencing opportunities and television developing into videoconferencing, the interactivity of both of these mediums provided a closer duplication of the conventional face-to-face classroom (Tiene & Ingram, 2001). The development of fiber-optic communication systems provided expansion of live, two-way, high-quality audio and video systems for education and served as the backbone for computer telecommunications and Internet-based instruction. Providing a means for both synchronous and asynchronous interaction and collaboration between students and instructors, the capabilities of this technology have had the most significant impact on distance education (Simonson et al., 2003). The integration of computer technology in face-to-face classroom instruction has allowed teachers and students to use a variety of hardware devices, software applications, and Internet-based tools to enhance the learning process. Hardware such as digital cameras, personal digital assistants, the smartphone, and interactive whiteboards engage students with hands-on devices allowing for sharing and collaboration. Audio and video editing software allows students and teachers to produce multi-media content adding a creative element to learning. Finally, Web 2.0 Internet-based tools such as blogs, wikis, and social networking sites give users the opportunity to design and author original digital content for worldwide distribution.

With the computer technology infrastructure in place and the availability of hardware, software, and Internet-based tools, schools were able to offer students courses online in addition to the face-to-face classroom instruction. A 2006 survey given to 232,781 students in grades 6-12, found twenty percent had taken an online or distance learning course at school or on their own (Blackboard & Project Tomorrow, 2008). From a survey of 900 administrators, the Greaves Group (2006) reported online learning was

currently used by 4% of K-12 students and this number is expected to grow to 15% by 2011. This rapid expansion has accelerated at a faster rate than the understanding of how to plan, organize and evaluate online programs effectively (Mariasingam & Hanna, 2006). For example, Christensen and Horn (2008) found an increase from 45,000 students in 2000 enrolled in online courses across the country to one million in 2007. This growth, however, accounts for only one percent of all courses offered in 2007. When viewed from a logarithmic perspective, however, the data suggest 50 percent of high school courses will be delivered online by 2019. Considering the current enrollment of students in online courses and the projected numbers for the future, online learning cannot be considered a passing trend in education, but rather a method of teaching and learning that has taken root and is rapidly establishing itself as a viable educational option.

### **Significance of the Study**

Based on the strong interest from high school students, the changes in educational policy at the local, state, and federal level, along with the current trends in higher education, high schools need to meet the demand to offer online learning programs for students. There is however a lack of research in these areas. Research into the process necessary to implement online learning programs will yield valuable information regarding the success and sustainability of these programs.

**Current research.** A recent (Fall, 2008) Speak Up online survey was conducted by Project Tomorrow, a national education nonprofit organization, in collaboration with Blackboard, Inc. In the survey 281,000 students from schools and communities in all 50 states were asked to envision the ultimate school for today's 21<sup>st</sup> century learners (Project

Tomorrow, 2009). Over 40% of the respondents surveyed in grades 6-12 included online tools to help them with class work, assignments, and to communicate with their teachers. The survey also reported 41% of respondents believed online courses will have the greatest positive impact on their learning in the 21st century. This was a 20% increase from their survey findings in 2006 (Blackboard & Project Tomorrow, 2009). The report identifies many reasons for this increased interest in online learning, which include: a) to learn about a subject, b) course not offered, c) to work at own pace, d) to get extra help, e) scheduling, and f) college credit. Whether the reason for taking courses online is personal preference, learning style, or geographic constraints, online courses provide an individualized educational experience many learners find desirable. Much of the literature and research associated with online learning has focused on post-secondary education where 22% of the population is enrolled in fully online courses. This infiltration of online courses at the higher education level is not being duplicated at the secondary level where the incorporation of online courses is still burgeoning (Picciano & Seamon, 2009). Most local, state, and federal educational policy was developed when the primary model was synchronous face-to-face instruction. This model may not be appropriate for online education (Pape, 2005). Issues regarding online instruction at the K-12 level need to be examined to inform policymakers at the local, state, and federal levels as they consider how to use this technology to expand and improve teaching and learning (Picciano & Seaman, 2009).

**Current educational policy.** Legislation regarding online learning has been passed at the local and state levels in some states. Some local school boards are establishing goals to require online learning as a graduation requirement. For example, in

2006 the state of Michigan enacted a state graduation requirement for every student to have online experience. The rationale for this online learning requirement is to prepare students for the demands they will encounter in higher education, the workplace, and in personal life-long learning (Michigan Department of Education, 2008). The 2008-2011 technology planning guide for the state of Minnesota asks schools about plans for students and staff to access courses delivered online or through distance learning technology (Minnesota Department of Education, 2007).

In addition to revising educational policy to include online instruction, curriculum standards must also address online design and delivery to help guide online course developers, instructors and consumers (Pape, 2005). School districts depend on multiple online learning providers, including postsecondary institutions, state virtual schools and independent providers as well as developing and providing their own online courses (Picciano & Seaman, 2009). Thoughtful planning and decision-making must guide school districts as they implement online learning programs.

The importance of researching the implementation of online programs into the traditional high school curriculum is driven not only by student demand and educational policy, but also by current trends in higher education. In addition to netbooks, social networking, smart phones and podcasting, online education will continue to play a role in the typical college student's life (McCrea, 2009). Nagel (2009) comments that the research firm Ambient Insight forecasts by 2014, most college students will take classes online, generating a number of more than 22 million students. High school students bound for college will be expected to successfully complete courses online.

In an effort to ensure students have mastered a set of basic skill requirements and

to reduce the number of high school graduates who need remedial courses after they enroll in college, a program has been organized by the National Center on Education and the Economy. The program, targeted for implementation in the fall of 2011, will allow 10<sup>th</sup> grade students to pass a battery of tests, receive a high school diploma two years early and then enroll in community college. The hope of the board exam system is to help students move into careers, into higher education and technical colleges, and to the workplace sooner rather than later (Dillon, 2010). This college option along with college-level courses already being offered in high schools will require students to engage in online course delivery and is one more reason why traditional high schools need to incorporate online learning programs into existing curricular offerings.

### **Study Design**

Three high schools were involved in this study. This research follows case study methodology and seeks answers to the three research questions identified above by in-depth review of the adoption, implementation, and impact of online programming on the existing curriculum at these schools.

**Setting.** In this research, a multiple case study design was implemented with three school districts participating from three different geographic settings—rural, urban, and metropolitan. Each school district was studied and is presented individually. The school districts were then compared for common elements of online programming implementation within the high school setting.

**Participants.** Eight participants were interviewed including superintendents, principals, teachers, and a media specialist. Each of the participants was interviewed using questions relating to their experience in establishing and participating in online

programming implementation within their individual high schools. The focus of the interviews was not to gather data regarding the quality of the online programming within each high school. Instead, data were collected to determine the process each high school implemented while establishing their online programming and the overall impact this programming had on the existing educational framework.

The use of multi-districts for this research provided data that were compared across many different entities. The results provided a model for online program implementation that can be utilized by administrators and faculty at many high schools planning to incorporate similar online programming.

### **Assumptions**

The author of this research study has a variety of experiences with online learning and programming. This experience includes involvement in fully online and partially online courses at the university level as both an instructor and as a graduate student. In addition to experience at the university level, the author was instrumental in implementing and instructing online learning at the high school level. Because these online teaching experiences have been positive, a favorable perspective on the online learning format persists for the author which has resulted in a dedication to discover the optimal process necessary for successful and sustainable implementation of online learning at the high school level.

### **Definitions**

The following terms relate to concepts of educational computing and online learning used throughout the chapters of this study. The definitions will provide an explanation and understanding of each of the terms and concepts.

Asynchronous: Not occurring at the same time. Most of the online programs at the K-12 level are asynchronous which allow students and instructors to participate according to their own schedule (Watson, 2007).

Course management system (CMS): A CMS includes software for the creation and editing of course content, communication tools, assessment tools and other features (Blackboard & Project Tomorrow, 2008).

Distance learning: Institutional-based, formal education, where interactive telecommunications systems are used to connect learners, resources and instructors (Simonson, et al., 2003) and where teachers and students are separated by distance, time, or both.

Face-to-face: Describes an educational setting where the instructor and students are physically together in a classroom.

Hybrid courses: Courses using a combination of face-to-face instruction and online instruction.

Online learning: Educational instruction and content are delivered primarily via the Internet. Online learning is a form of distance education (Watson, 2007); also known as e-learning or virtual learning.

Sustainability: Whole-system capacity building on an ongoing basis leading to continuous improvement (Fullan, 2005).

Synchronous: Occurring at the same time. Using real-time Internet-based collaborative software combining audio, video, file-share, and other forms of interaction (Watson, 2007)

Virtual school: An educational organization offering courses to K-12 students via the Internet or by other Web-based methods (Cavanaugh & Blomeyer, 2007).

Web 2.0: Term used to describe the current state of the Web as it transitioned from static HTML pages where readers could find and copy information to interactive services where users create and post information (Solomon & Schrum, 2007).

## **Chapter Two: Literature Review**

Since the introduction of computers into education in the 1970's and the subsequent addition of the World Wide Web in the 1990's, schools and teachers have experienced an explosion of teaching and learning possibilities regarding computer technology. The past two decades have yielded the creation of browsers for the World Wide Web, searchable databases of documents and resources, digital cameras, personal digital assistants, webcams, and a variety of web authoring tools. The computer itself has seen a transformation over the past twenty years from a desktop personal computer to a wireless handheld device. With the infusion of computer hardware and software in education, the options for alternative methods of teaching and learning have evolved. One of those alternative methods is online learning.

Sometimes described as *anytime, anyplace learning*, online learning is defined by the National American Council for Online Learning (NACOL) as, "Education in which instruction and content are delivered primarily via the Internet" (Blackboard & Project Tomorrow, 2008, p.2). Online learning, also known as virtual or e-learning, is the most recent form of distance education emerging from a century of new technologies. At its inception, distance education relied on copy machines and the postal service. Today, the latest multimedia computer and high-speed network connection allow for two-way audio and video communication to occur, resulting in online learning programs that are both synchronous and asynchronous (Simonson et al., 2003). This latest form of distance education has been used at the higher education level since the 1990s (Picciano, 2006) and is gradually infiltrating the K-12 system. Some of the established K-12 online programs have existed for more than ten years. Some of the newest programs, less than

five years old, are drawing on the expertise of the early adopters of K-12 online programming as well as the knowledge base of postsecondary institutions and the corporate world (Watson & Gemin, 2009). Student interest is a driving force behind inclusion of online learning programs, but the response by schools to provide this learning option is lagging.

Students at the secondary level are reporting widespread interest in online learning to meet such needs as access to Advanced Placement courses for college credit, the ability to take courses not offered at their own high schools, and the ability to work at a pace based on individual needs. Online learning is being offered as an add-on or alternative rather than a regular part of the curriculum offering (Project Tomorrow, 2009). A closer look at the history of the integration of online learning at the higher education level may assist high schools in the implementation of similar educational programming.

Daniel (1997) reported that higher education was mired in a crisis involving three issues: access, cost, and flexibility and even with the world's strongest university system, the United States was unable to resolve the crisis. Daniel maintained using the new technologies in distance education would provide a response to the crisis. That advice given over a decade ago can apply today, not only at the university level but also at the high school level. Fulfilling the demands for access, affordable cost, and scheduling flexibility are only a few of the issues involved in the discussion of online learning in today's schools. Local district and state policies need to be scrutinized.

As online learning programming responds to the demand of students, some states are reporting growth of 15% to 50% annually. State policies however, regarding this

latest form of distance education lag behind this expansion (Watson & Gemin, 2009). Without the availability of statewide policies regarding online learning programs to inform local school districts, administrators, teachers, and students are venturing on their own to figure out how best if at all to implement this new method of teaching and learning. Issues such as changes in organizational structure, funding, technology infrastructure, curriculum, staff training and support, student training and support present challenges and even controversy in some states (Watson, 2007). Recognizing these challenges and controversies, K-12 schools need online learning program models to help guide them through the process of implementing this new form of distance education into the existing educational framework. Literature regarding online learning focuses on K-12, however the focus of this study will be the high school level.

This chapter will explore the relevant literature on systems change and the change process experienced by traditional high schools with the incorporation of online learning programs. Consideration is given to existing state and local procedures and policies as online learning impacts current educational organizations. Finally, factors necessary for the creation of practical and sustainable models traditional high schools need to incorporate online learning programs will be investigated. This literature represents a thoughtful conjecture at understanding the change process in this study; it will, however provide the foundation for the interview process to follow.

### **Systems Change**

The transformation of students and classrooms over the centuries has yielded many changes. For some generations, learning took place in a one-room schoolhouse with one teacher for all grade levels and subjects. For the generations that followed,

classrooms were compartmentalized into individual grade or age levels and also individual subject or content areas. The shape of the classroom has remained surprisingly stable over the decades (Tyack & Cuban, 1995).

For the 21<sup>st</sup> century learner, the image of the classroom can mean something virtual, high-tech, and global. Yet many students find themselves scaling down their use of technology as they enter the classroom. Today's students, with their ubiquitous access to technology, embrace the use of technology more so than their parents, teachers, or principals, earning themselves the label of "free agent learners" (Project Tomorrow, 2009, p.1). As students exercise their ability to maneuver the Internet to aggregate data and information, they are becoming less dependent upon traditional educational institutions for acquiring knowledge. This phenomenon of the shift in knowledge acquisition should signal those involved in teaching and learning to consider these emerging technologies. One of those emerging technologies is online learning.

K-12 online learning has generated significant public interest but also controversy. Because online learning is more prevalent at the postsecondary level, there is an interest among students and parents for access to online courses prior to college attendance. Most universities have adopted online learning and many employers use web-based technologies to teach workplace skills (Watson, Gemin, & Coffey, 2010). Opinion polls show however only about 30% of U.S. adults think students should earn high school credits over the Internet without attending a regular school (Cavanaugh & Blomeyer, 2007).

The U.S. Department of Education released the new National Educational Technology Plan in November 2010. This document lists goals and recommendations in

the areas of learning and productivity. These goals and recommendations promote the adoption of learning resources that exploit the flexibility and power of technology to reach all learners anytime and anywhere. The document also reflects a call for rethinking basic assumptions in our educational system that organizes student and educator learning around seat time instead of demonstration of competencies (U.S. Department of Education, 2010).

With a strong public interest in access to online learning and federal goals and recommendations promoting anytime, anywhere learning, K-12 schools need to adopt and implement online programming into existing curricular offerings. This requires change not always welcomed and may require changing not just a single entity within a school but the entire school district system.

**Dynamics of change.** Change can involve gains but also loss and uncertainty. It can be complicated and complex. Schools, however, do not manage change well (Smith, 2008). Viewing change from the corporate world provides new insights for administrators and educators within the school setting.

Reich (2000) states change in the corporate world involves moving people to a new place, a place where they often do not want to go. The resisters will defend their reluctance to change with phrases such as, “That seems risky” or “Let’s go back to the basics” or “We’re fine just the way we are” (Reich, p.150). Change is risky but consideration must be given to determine whether the risk is worth it. Going back to basics assumes there is one right way to do everything, which does not fit in today’s ever-changing world. “Being fine” does not ensure remaining fine. Just as every company needs new ideas, new perspectives, new ways of thinking about its products, its services,

and its customers (Reich, 2000), schools must be open to new ideas about teaching, explore alternative views of learning, and rethink how courses are delivered to students.

Change has traditionally been thought of as a rational, linear, and neat process but reality will reflect the opposite. A linear model fails to take into consideration the human factor of those involved in the change. The interpretation and reaction of those involved are significant variables to the proposed changes and implementation of the process can be messy (Smith, 2008). In talking about school reform, Tyack and Cuban (1995) note reformers, who adopt a rational approach to educational reform and expect improvement to schools, most often discover it is not that simple. Innovations in education never start completely from scratch, adding complexity and chaos into school planning. The linear thinker will try to control the chaos to create order. This control over people, events, and ideas, however, is an illusion (Ollhoff & Walcheski, 2002).

**Schools as systems.** Ollhoff and Walcheski (2002) describe a system as “a group of parts that function as a whole” (p.14). They further state systems thinkers are concerned with how the whole behaves. An organization is a system comprised of different people with different personalities and agendas, interacting for a goal. Without attention to the culture and systemic nature of the organization however, there will be no movement toward a goal (Ollhoff & Walcheski, 2002). As Morgan (2006) states, systems thinking involves having a common vision. Applying these descriptions of systems and systems thinking to the K-12 setting, an established goal or common vision can be educating and developing all students into competent and productive individuals for future society. This vision is most likely shared by students, parents, teachers, administrators, school boards, and community members.

Systems thinking within the school organization allows people to talk across grade, department, and school levels. A systems thinker in school planning does not focus on any particular practice, but on the process of building collaborative relationships and structures for change (Senge, 2006). In the midst of chaos, system thinkers try to find patterns which do exist in spite of chaos (Smith, 2008; Ollhoff & Walcheski, 2002).

**Conceptual framework for school change.** In his conceptual framework for looking at school change, Smith (2008) first identifies three critical and overlapping elements for significant change, which are (a) *context*, (b) *capacity*, and (c) *conversations*. Smith states context is the interplay of culture, climate, messages, and environment. Fullan (2005) adds contexts are the structure and culture within which one works and which determine why a particular innovation succeeds in one situation and not in another. Identifying context as a key *tipping point*, Gladwell (2000) states, “The Power of Context says that what really matters is the little things” (p.150). Gladwell further points out in order to change people’s behavior, it is necessary to create a community within which new beliefs can be expressed and nurtured. Reflecting the concepts of complexity theory, Fullan (2005) maintains if a change in systems is desired, there needs to be an increase in the amount of purposeful interactions among the people within and across the levels of the community.

Culture, what people believe, value, and prioritize, helps identify and describe an organization as it exists and provides opportunities for impacting existing cultures. The role of culture needs to be appreciated by any change agent (Hargreaves, A., Earl, L., Moore, S., & Manning, S., 2001). Acknowledging that cultures consist of the shared values and beliefs in the organization, Fullan (2005) believes even though it is difficult,

changing school cultures for the better is not impossible and can be done through capacity-building training that fosters and embeds professional communities.

An extension of culture is climate, which refers to the tone within an organization. Leaders who stimulate a sense of curiosity and promote the practice of inquiry will develop followers who feel encouraged to come forward with new ideas (Smith, 2008).

The physical environment and the dominant messages being conveyed are the last two dimensions of context. Conveying messages through an environment that is inviting and welcoming, particularly schools, along with the climate and culture within schools, shapes context and ultimately creates the schools desired for all children (Smith, 2008).

Capacity is the next aspect of Smith's conceptual framework for looking at school change. Capacity means strengthening a school's ability to plan, teach, assess, work in teams, and learn (Smith, 2008). With the purpose of enhancing pupil learning first and foremost, internal capacity is the power to engage in and sustain continuous learning of teachers and the school (Stoll, n.d.). Elmore (2004) further describes capacity as the resources, knowledge, and skills teachers and students bring to the instructional core along with the ability to enhance and support those resources, knowledge, and skills. By maintaining the capacity within a school organization that builds effective teams and equips teachers with the skills necessary to be successful, critical decisions can be made in a collaborative manner resulting in team learning (Smith, 2008). In Senge's (2006) discussion of learning organizations, he identifies team learning in addition to personal mastery, mental models, shared vision, and systems thinking as disciplines crucial to facilitating substantial change. Premised on dialogue, people listening to each other in an

effort to “discover insights not attainable individually” (Senge, 2006, p. 10), team learning is built on common experiences that drive individuals and organizations.

The third essential element in Smith’s conceptual framework for looking at school change is conversations (Smith, 2008). Within the ideal collaborative school, Ogden and Germinaro (1995) believe conversations need to be student-centered, not adult-centered. Smith (2008) adds these conversations need to be about students, about teaching and learning, about the school’s vision, and about progress. The importance of these conversations is the potential they have for bringing about significant change. These interactions can be progressive, building an organization’s intelligence and allowing an organization to move forward. Or the interactions can be regressive and will slow things down or make them worse (Perkins, 2003). When stress is evident, individuals tend to regress to earlier learned behaviors making it difficult to present progressive ideas. In order to lead an organization to transformation, Fullan (2005) suggests action theories can provide direction on how to accomplish things. Perkins (2003) labels action theories as action poetry, i.e. “built for action - simple, memorable and evocative” (p.213). Perkins recognizes ideal developmental leaders, or “system thinkers in action” (Fullan, 2005, p.50) will adopt progressive interactions regardless of the actions of others. This adoption results in these developmental leaders functioning as exemplars, facilitators, and mentors within a group, moving toward the establishment of a progressive culture. These issues of adoption are relevant for school district leadership when entering into discussions of implementing online learning programs. Taking this further, Elmore (2004) suggests the idea of distributed leadership for large-scale improvement within schools.

Distributed leadership involves organizing the diverse competencies of a system into a coherent whole. Within a school system this requires understanding individual differences of principals and teachers, and how the knowledge and skills of an individual can complement as well as be shared with another. This distributed leadership also includes searching outside the organization for new knowledge and skills not found within the organization (Elmore, 2004). Zimbalist (2005) summarizes this well: “Research indicates that change involves more than one charismatic leader charging up the hill to victory. The change process represents a complex combination of factors that, when assembled in the proper order can make reform possible” (p.3). Adoption and implementation of online programming into existing school curriculum may involve decision-making by school personnel at many levels

**Implications for online learning development.** In 2006-07, only 73.9 percent of high school students graduated on time. This means more than one-quarter of the students did not receive a diploma four years after beginning their freshman year of high school (National Center for Educational Statistics, 2009). Only 32 percent of all students leave high school qualified to attend four-year colleges (Watson, 2007). Compounding the severity of this phenomenon is the fact there is a significant demand for skills to function and succeed in the new global economy. Even though American classrooms may look physically different than they did a century ago, the entrenched practices, governance structures, and low expectations inhibit the education sector from evolving and adapting to this new global economy (Alliance for Excellent Education, 2010). Searching for solutions to the low completion rate of high school students and the demand for 21<sup>st</sup> century skills, high schools need to reform the current infrastructure for how students are

educated. An inspection of sectors other than education and how these sectors have adapted to the dramatic changes occurring in the 21<sup>st</sup> century world shows a focus on new technologies as a vital component of change (Alliance for Excellent Education, 2010).

Technology is pervasive throughout today's society. Technology has transformed how people do business, manage their finances, purchase goods and services, access entertainment, and communicate with each other. Computers are omnipresent in schools today. Unlike other facets of society, schools have not embraced the transformative power of computer technology, implementing its use as an add-on rather than an integral part of teaching and learning. Computers may be used for research, word processing, or constructing multimedia presentations. Yet delivery of instruction is primarily done by a teacher within the classroom (Christensen & Horn, 2008). Students discover they need to power down as they enter the school building and power back up as they exit (Project Tomorrow, 2009; Alliance for Excellent Education, 2010). By integrating a system of efficient technology applications within an effective school model, schools can transform education into a system better equipped to improve graduation rates and also prepare students for college or the global-based workplace they will face (Alliance for Excellent Education, 2010). One of those new efficient technology applications is online learning.

Online education represents a response to the shortcomings of low graduation rates and the lack of student preparation for college or the workplace. Online education can facilitate the mastery of essential 21<sup>st</sup> century skills by emphasizing self-directed learning, time management, and personal responsibility while fostering technology literacy in a context of problem solving and global awareness (Watson, 2007; Cavanaugh, 2009). Project Tomorrow, a national education nonprofit organization, in collaboration

with Blackboard, Inc., has tracked the increasing demand for online learning. Examination of the data collected from annual online Speak Up surveys, 2002-2008, completed by K-12 students, teachers, administrators, and parents across the nation, shows an increasing acceptance and awareness of online learning (Project Tomorrow, 2009). As noted earlier, the data from the survey indicate a variety of personal and academic reasons listed by students for taking online classes. The students' interest in and demand for online learning options exceeds the opportunities available in many states (Project Tomorrow, 2009; Watson, Gemin, Ryan & Wicks, 2009). Organizations such as schools must not ignore the market environment or the organizations will become smaller and less relevant (Ollhoff & Walcheski, 2002). If the students cannot enroll in online courses within their own district, they will go elsewhere. As schools try to accommodate the interest in and demand for online learning opportunities, a lack of statewide policies regarding online learning programs has resulted in many local school districts trying to figure out how best to implement online programs into existing curricular offerings (Watson, 2007).

By looking at organizational change in a broader sense, application of concepts involved is more easily applied to specific organizations—schools. A look at the change process within educational organizations through a systems lens will provide insight regarding the dynamics of change and the challenges involved as high schools adopt and implement online programs.

**Facing change.** To meet the interest in and demand to provide online learning opportunities for high school students, school districts, specifically administrators and teachers are searching how best to provide a teaching and learning model quite different

from their own educational experiences. Over the past century, structures, rules, and practices that organize the work of instruction have changed very little. These practices include age-grading of students, the division of knowledge into separate subjects and self-contained classrooms with one teacher (Tyack & Cuban, 1995). Having been educated within this teacher-centered model consisting of a physical classroom filled with other students learning in real-time, most administrators and teachers duplicate this model within their schools and classrooms. These same administrators and teachers are now being asked to make a fundamental change to their basic practice. Shifting from the status quo of face-to-face teaching to interacting with students online challenges some teachers who feel it is unnecessary to change the method of teaching they have been using (O'Hanlon, 2009).

Because teachers retain autonomy within the classroom to a fair degree, the suggestion of a new innovation is sometimes met with moderate enthusiasm, mild compliance or outright rejection (Ogden & Germinaro, 1995; Tyack & Cuban, 1995). In the case of implementing online programming into high schools, how the concept is presented may be the key to acceptance. O'Hanlon (2009) states for teachers, the way a technology is introduced into the academic environment will make the difference between teachers adopting or abandoning the innovation. If teachers are forced into using technology without being shown the value the technology will bring to their classrooms, they will resist. Those who are the early and eager adopters of the technology can provide the needed motivation within the school community, encouraging the resisters to explore new ways of teaching and learning (O'Hanlon, 2009).

Elmore (2004) suggests the focus of leadership should be attention to instruction. Leadership within the school will be a driving force as schools consider the adaptive challenge of implementing online programming. When system leaders understand the big picture, and are able to communicate through a multitude of interactions the overall purpose and plan, they will be effective with the members of their organization (Fullan, 2005). Fullan further explains when system leaders (a) provide the public with the content and underlying principles and strategies of the plan, (b) establish learning opportunities for interaction around the plan, and (c) schedule periodic occasions where the plan is assessed and reviewed in order to generate ideas for revisions, an increase in systems thinking will occur. School leadership wishing to incorporate online learning programs will be facing a major change from the way teaching and learning is currently delivered.

Systems thinking, effective leadership, and a shared vision will lead to learning teams and provide collaborative relationships among school members. These relationships will be essential as teachers learn the skills necessary to design and teach online courses. Senge (2006) states however, a shared vision and talent are not enough for team learning—additional dimensions are critical for team learning. These include insightful thinking based on collective intelligence, innovative coordinated action, and continuous urging of the practices and skills of team learning. And as mentioned earlier, as school members engage in collaborative relationships and team learning about incorporating online learning into the curriculum, the conversations need to be student-centered. Online course design and delivery can reflect a student-centered model by providing differentiated instruction, self-pacing, and flexibility (Cavanaugh & Blomeyer,

2007). There is a direct correlation between the ability of a teacher to utilize multiple technology tools to support student learning and student outcomes. Professional development, therefore, is critical to the continued success of online programming (Watson et al., 2009).

**Barriers and issues.** Data from the 2008 Speak Up survey show 3,115 principals report relatively few teachers are willing to teach an online class (Project Tomorrow, 2009). The barriers to offering more online classes as listed by the principals included (a) teachers are not comfortable using the tools or teaching online, (b) teachers are reluctant to try online teaching, or (c) the school does not have the expertise to create online courses.

The issues listed by teachers relating to online learning are (a) the concern of course quality, (b) course development, (c) receiving funding based on student attendance, (d) limited technological infrastructure to support online education, (e) the need for teacher training, and (f) restrictive federal, state, or local laws or policies (Picciano & Seaman, 2009).

With these barriers and issues in mind, teachers who are new to online teaching will require instructional time with mentors, practice with the media, knowledge of methods that work well in an online environment (Cavanaugh & Blomeyer, 2007), and professional development opportunities allowing teachers and administrators to learn together about how different distance learning is from classroom learning (Project Ideal, n.d.).

It is also important for schools offering online courses to continually evaluate the potential and the promise of innovative tools for teaching and learning. These innovative

tools can enhance student learning in new ways while allowing teachers to accomplish their pedagogical goals (Watson et al., 2009).

Most of the basic costs of online programs parallel face-to-face programs. Both environments require instructors, administrators, staff, professional development, curriculum and materials, assessment and evaluation, and data systems. However, for online course delivery the additional cost is substantial in order to provide the technology infrastructure including a course management system (CMS), support staff, and course design (Watson et al., 2009). Watson et al. further suggest critical decisions about online learning resources are being made solely on the basis of price, which can lead to inferior results for individual schools and for education as a whole.

As online learning grows in viability and popularity, supporting policies are lagging behind this growth. Online programs can present conflict between traditional schools, between districts, and between differing views of access and equity (Trujillo, Griffith, Snyder, & Urschel, 2007). Policies are needed regarding course quality and content standards, funding, attendance, equitable access, and locus of control (Watson & Gemin, 2009). Policymakers must also understand the characteristics and value of online learning and the impact of new legislation on the current framework within high schools. Online education should not be viewed as a separate system of public education but rather a collaborative effort within the public education system (Trujillo et al., 2007). As online programming and learning become more pervasive, there are concerns about how this innovation in education will fit into the existing school environment. An examination of educational reform and the development of e-learning policies are essential.

## **Educational Policy**

Within the past three decades major federal legislation has been passed linking our nation's status in the global economy with an educational system that is presumably failing. This phenomenon indicates some obvious assumptions: (a) the present educational system does not effectively educate its students to think and act globally, (b) an improved educational system will produce future workers who are committed to our nation's economic welfare, and (c) educators have an understanding of the curriculum needed to produce workers who can successfully compete in a global economy.

With politicians authoring legislation designed to remedy the currently inferior global economic status of the U.S., education has been deemed a solution. However, U.S. education has also been blamed for being the problem. A closer look at education in the U.S. today will reveal an educational ideology slow to adjust to American society and the demand of the global economy.

Historically, there has been a disconnect between educational policy and practice (Tyack & Cuban, 1995). Educational policy throughout the 20th century resulted in debates about progressive education, emergence of theories regarding cognitive and behavioral approaches to instruction in reading and writing, and the surfacing of child development theory. The discourses of policy and practice, however, have seldom intersected (Elmore, 2004) resulting in a gap between legislative committee rooms and the classroom.

“Public education in the United States is political” (Gutek, 2004, p. 114). Gutek points out statements regarding the purpose of education emanating from professional educators are often based on particular ideological agendas with hidden goals. Ideologies

are based on given historical, political, and economic situations and emphasize specific membership based on identity with a nation, tribe, ethnic group, political party, religious beliefs or socioeconomic group. The educational ideology of any society at any given time in history will reflect the influences of a dominant group at the exclusion of subgroups. The results are policies reflective of the ideology of education in the U.S. shaped by the dominant group in power at the exclusion of other groups. Public discourse surrounding this exclusion is insufficient to prompt any significant change. Reform needs to reflect the ideal of equality and equity as policies are put into practice.

**Historical overview.** As the U.S. moved into the Industrial Era during the 1800's, the ideals of free enterprise and individualism were competing with the ideals of collectivism and socialism (Toffler, 1980). The need to produce trained factory workers to perpetuate the industrial sector gave birth to mass education. This mass education was a way to provide learners with traits that contributed to industry by means of a "covert curriculum" with an emphasis on punctuality, obedience, and repetitive work needed in the workplace (Toffler, 1980, p.45).

As capitalism continued to promote a competitive free market, resulting in efficiency and productivity, Marx saw capitalism as an exploitation of the economy. This capitalistic exploitation produced racism, sexism, and other forms of discrimination against those not in power (Toffler, 1980; Gutek, 2004). At the turn of the century, this discrimination and exclusion continued as the *Committee of Ten* and the *Cardinal Principles of Secondary Education* were established impacting the ideology of education.

The Committee of Ten was established in 1893 for the purpose of establishing a high school curriculum that would better prepare students for entering college. The

curriculum, however, did not provide any variations for those students not going on to college (Helton, n.d.). In order to make secondary education available to the greatest number of high school age students and to diminish the emphasis of the Committee of Ten to formulate a college-bound curriculum, the Commission of the Reorganization of Secondary Education created the Cardinal Principles of Secondary Education in 1918. The curriculum design was to match courses of study with the interests and abilities of students. The curriculum however simply reproduced the social, political, and economic structures of the outside world (Modell & Alexander, 1997).

The impact of the Industrial Era, the Committee of Ten, and the Cardinal Principles of Secondary Education illustrates how the creation of a dominant society via economics will thus create an educational ideology influenced by ideals of the dominant group. In an effort to curb the monopoly of corporations that were developing at the turn of the 20<sup>th</sup> century, Progressivism began to emerge as an educational theory promoted by John Dewey (Gutek, 2004).

The principles of Dewey and pragmatism combined with the progressive movement to influence educational ideology at the beginning of the 20<sup>th</sup> century. With an emphasis on experiential learning through collaboration and cooperation, Dewey had a strong impact on the educational environment (Johnson & Reed, 2008). Dewey (1900) states, “What the best and wisest parent wants for his own child that must the community want for all its children” (p.19). This was reflective of the democratic ideal important to Dewey. The progressive ideology is concerned with educating the whole person. This includes the psychological, moral, social, civic, and economic needs of students by the creation of schools that are multifunctional (Gutek, 2004).

Progressivism was not without its critics. The ideology of conservatism and the educational theories of essentialism and perrenialism responded to Dewey and his progressive ideals.

Critical of progressivism, conservatism is an ideology promoting the maintenance and preservation of schools for their primary and intended purpose. Influenced by the philosophy of Plato, conservatism excludes the individual's pursuit of identity in favor of a traditional collective history (Gutek, 2004). This is a clear example of how the dominant culture is fostered not only in society but also in the formulation of an educational ideology. Two education theories stemming from the conservative ideology are essentialism and perennialism. Both of these educational theories have had a dominant presence in education through the latter half of the 20<sup>th</sup> century and into the 21<sup>st</sup> century.

Promoted by Hirsch (1996), essentialism rests on a back-to-the-basics mantra. In order to preserve cultural continuity, essential skills of literacy and computation and also subjects such as mathematics, history, science, language and literature need to be provided for all students. These essential skills come at a cost of the exclusion of life skills such as interpersonal relations and money management (Gutek, 2004).

Perennialism, with roots dating back to Aristotle, believes human nature is the same at all times and places. For the perennialist it is important to teach ideas that are everlasting (Gutek, 2004). Both essentialism and perennialism exclude multiculturalism in order to preserve cultural continuity, and both teach ideas that are everlasting. As a result, the influences these conservative views have on the formulation of an educational ideology that is inclusive fall short.

A final conservative ideal that had the most significant impact on education for the past two decades has been the push for standardization in education. Beginning with the publication of *A Nation at Risk* in 1983, commenting on the inferiority of education in the U.S., followed by the passage of the federal legislation, Goals 2000, standardization in education has been a priority. With the enacting of the No Child Left Behind (NCLB) legislation in 2001, there has been a conservative push to accomplish uniform achievement for all students. NCLB requires the use of standardized testing, mandatory annual yearly progress, and sanctions for failure. Critics say this testing narrows the curriculum that can be offered. The testing preparation ignores student needs in an attempt to stress information on the test (Hess & Petrelli, 2007).

This conservative ideology influences the ideology of education with the promotion of conservative and capitalistic ideals. Equality is overshadowed (Green, Little, Kamat, Oketch, & Vickers, 2007). The evolutions of postmodernism and critical theory both provide new perspectives and balance needed as a 21<sup>st</sup> century educational ideology is formulated in order to give voice to those traditionally excluded.

As a philosophy, postmodernism has the shortest history. Critical of the modern industrial revolution and the exploitation of natural resources, postmodernism is influenced by the work of Foucault. Foucault states truth-power relationships produce ideologies perpetuated in an exercise of power by those who claim to know the truth (Gutek, 2004). A timely illustration of a truth-power relationship can best be illustrated with NCLB. A premise of NCLB is a quality education should be available for all but then shifts the focus stating in order to determine if a quality education exists, standardized tests must be given. Questions such as “Who designs the test?” “Who

mandates the test?” and “Who interprets the results?” are questions spurring the debate of whose rights should be dominant (Phillips, 2008). A more definitive debate is if anyone’s rights should dominate regarding educational ideology. Critical theory offers a valid perspective regarding this potential debate with serious challenges regarding who decides.

Advocating for disempowered and subordinate groups, critical theorists feel there are rival ideologies existing in schools today and the dominant class in politics, the economy, and education reproduce inequality and exploit those in sub-dominant groups. Promoting self-determinism as did the humanists during the Renaissance period, critical theorists advocate for the oppressed to break free from domination (Gutek, 2004). Critical theorist Paulo Freire’s pedagogy of the oppressed stressed the yearning of the oppressed for freedom and justice and a transformation of established institutions as a move toward humanization (Freire, 1972).

Ellsworth (1989) encourages a discussion of the tenets of critical theory through public discourse, however this is not enough to make significant change. The U.S. educational ideology must be designed to include equity and equality. School reform needs to mirror these ideals with a connection between policy and practice.

As with other areas of our society such as business, politics, and the economy, transitions into a new era of the 21<sup>st</sup> century create speculation regarding a vision for education. Questions arise regarding whether educational policy should be based on the influences of postmodern multiculturalism, conservative standardization, or progressive individualism.

Over 20 years ago, Naisbitt (1982), along with others, predicted a shift from an industrial society to an information society. Toffler (1980) also anticipated a change from the modern mentality of machines and mass production to a postmodern mindset of individualization and synthesis. Bereiter (2002) talks of the *Knowledge Age* and the importance of rethinking how education is conceptualized. Instead of thinking of the mind as a container to fill with knowledge, the 21<sup>st</sup> century educator needs to think beyond knowledge acquisition to knowledge building.

The influence of the Industrial Era is still evident in our school system today. Examples of this include our standardized curricula and standardized testing as in NCLB, grading policies, accreditation rules, and admission policies, which prepare our students for a job market of standardization (Shantz & Rideout, 2003).

In response to this mass produced and standardized style of education of the industrial era, education of the 21<sup>st</sup> century needs to feature decentralized production, renewable energy, de-urbanization, and working at home (Toffler, 1980). Educators need to shift their focus from the schooling paradigm where the individual serves the organization to an education paradigm. The education paradigm values multiple intelligences, individual knowledge possession and collaborative interactions (Shantz & Rideout, 2003) Instead of reproducing individuals who fit the mechanical mold of the 20<sup>th</sup> century, a new way of thinking about education can help produce individuals who are reflective of the true intersection of social, cultural, and political forces.

**Impact of policy on school systems.** With recent federal legislation affecting school reform, schools are expected to enact curriculum that will impact our nation's status in the global economy. There is often, however, a disconnection between policy

and practice (Elmore, 2004; Tyack & Cuban, 1995). In order to address this disconnection, Fullan (2005) suggests systems thinking provides a different lens to view problems and goals. Systems thinking views problems and goals not as isolated entities but as components of a larger structure. Fullan (2005) further states the purpose of systems thinking is to understand the system and change it for the better.

By looking at the current state of education in the U.S. today through a systems thinking lens, the ideals of equality and equity in education are not isolated entities but part of a larger structure, the educational ideology. From federal policy, to reform, and finally to practice, consideration for an education ideology that does not promote the ideals of a dominant group but reflects the ideals of every group is crucial for the success and sustainability of education in the U.S

Elmore (2004) states “the problems of the system are the problems of the smallest unit” (p.3). In reference to policy and schools, Elmore contends this proposition operates in two directions. The effects of policies are determined in important ways by the conditions and constraints existing in everyday schools and classrooms. Conversely, the activity of schools and classrooms can teach policymakers about the design and implementation of good policy. In order to succeed, school reform has to happen “from the inside out” (p.3). Schools successful in changing practice start with the practice and make modest modifications in school structure to accommodate the practice. School reform advocates and policymakers continue to think about the effects of educational policy in simplistic and mechanical ways and hold the belief schools can be changed by mandates. In reality, the school environment functions upon multiple organizational, political, and human relations dimensions (Elmore, 2004).

Regarding learning realities in education today, very little policy is tied directly to student achievement (Watson & Gemin, 2009). Elmore (2007) supports this by stating “Education policy in the United States has arguably not been much about education, at least the sort of education that occurs among teachers and students in classrooms” (p.212). Elmore further explains during the 20th century significant political and social struggles around education such as mandatory attendance, financing inequities, desegregation, and special education redesigned the institutional structure, rules of access, and social conditions of schooling. The daily experiences of teachers and students in the classroom, however, were not directly impacted.

In order to develop school reform that improves achievement results, is long-lasting and directly impacts teachers and students within the classroom, Hargreaves and Fink (2000) offer a three dimensional approach of depth, length, and breadth. Reform promoting deep learning and is culturally and emotionally sensitive will ensure cultural connections necessary for educators to become more responsive to various student cultures. Successful school reform is also dependent on the ability to anticipate and overcome obstacles in order to sustain change over time. This will require government policies that do not directly undermine individual school changes. Finally, by using model schools to reculture not just to restructure innovative policies, specific parts rather than the whole of an innovation can be incorporated successfully. The result is the development of an initiative without compromising the development of others in the surrounding environment.

There are implications of these recommendations for online learning. Federal and state policies will affect policy decisions made by local school boards regarding the

incorporation of online learning programs. Because the effects of any policy are determined by the conditions and constraints operating within a school, careful consideration must be given regarding key issues of online learning. The approaches used by practitioners and policymakers regarding the political, practical, and social matters of online learning can help to clarify the challenges and benefits of online learning. By creating a framework for online learning policy development, the potential for positive policy change promoting reform and benefits education as a whole will result (Watson & Gemin, 2009).

**Policy recommendations for e-learning.** Education is the key to America's economic growth and the ability to compete in a global economy (U.S. Department of Education, 2010). The Obama administration has designated education as an urgent priority guided by two goals:

- We will raise the proportion of college graduates from where it now stands (around 41 percent) so 60 percent of our population holds a two-year or four-year degree by 2020.
- We will close the achievement gap so that all graduate from high school ready to succeed in college and careers. (U.S. Department of Education, 2010, p. ix)

In order to achieve these goals the National Educational Technology Plan (NETP) 2010 states technology-based learning and assessment systems will be instrumental in improving student learning and generating data that can be used to continually improve and transform the education system at all levels. The NETP was developed with the input and collaboration of dozens of leaders from the U.S. Department of Education and the White House Office of Science and Technology Policy; focus groups of teachers,

administrators, and members of the Consortium on School Networking (CoSN) and the Software Information Industry Association; technology officers and chief information officers from school districts across the country; and state and local policymakers (U.S. Department of Education, 2010). The NETP explains in order to achieve the goal of transforming American education, rethinking some basic assumptions is essential.

The most basic assumption identified by the NETP is currently our education system uses time-based or seat-time measurements of educational attainment. These measures were created in the late 1800s to smooth transitions from K-12 into higher education. The second basic assumption is how schools are organized. Students are organized into age-determined groups; there are separate academic disciplines; learning is grouped into classes of roughly the same number of students in a particular class, all receiving the same content at the same pace, and remaining in these groups all year. The incorporation of online learning provides opportunities to rethink these basic assumptions and restructure K-12 education.

The NETP offers recommendations for districts, states, and federal government involving online learning that will provide engaging and empowering learning experiences for learners and will also provide technology support for professional educators. These recommendations include:

1.3 States, districts, and others should develop and implement learning resources that exploit the flexibility and power of technology to reach all learners anytime and anywhere. (U.S. Department of Education, 2010, p. 23)

3.1 Expand opportunities for educators to have access to technology-based content, resources, and tools where and when they need them.

3.3 Use technology to provide all learners with online access to effective teaching and better learning opportunities and options in places where they are not otherwise available and in blended (online and offline) learning environments.  
(U.S. Department of Education, 2010, p.49)

The NETP recognizes a comprehensive infrastructure for learning is necessary to move from the traditional model of classroom learning to a model of teaching teams and students anywhere in the world where people have access to devices and adequate Internet connections. A goal identified by the NETP regarding online learning and infrastructure is:

4.0 All students and educators will have access to a comprehensive infrastructure for learning when and where they need it. (U.S. Department of Education, 2010, p.61)

To meet this goal, the following actions are recommended:

4.1 Ensure students and educators have broadband access to the Internet and adequate wireless connectivity both in and out of school.

4.2 Ensure that every student and educator has at least one Internet access device and appropriate software and resources for research, communication, multimedia content creation, and collaboration for use in and out of school. (U.S Department of Education, 2010, p. 61)

Likewise, the National Association of State Boards of Education (NASBE) is committed to continued leadership efforts to improve public education. The NASBE (2009) recognizes when used appropriately, electronically delivered education can improve how students learn, can improve what students learn, and can deliver high-quality learning

opportunities for all students. The NASBE suggests state education policymakers seize the opportunity to assure e-learning is used well and strengthens the education system. The NASBE (2009) suggests policymakers develop e-learning policy that (a) empowers families by offering new choices among different ways of organizing and delivering learning services; (b) assures equity with access to equipment and the Internet, high-quality educators, no-cost or low-cost e-learning opportunities, advanced coursework, and assistive technologies; and (c) delivers quality e-instruction to learners.

The International Association for K-12 Online Learning (2009), recognizes that online learning is emerging as an essential part of the K-12 education landscape. The organization therefore promotes through its advocacy and policy activities the right for every student to have online learning opportunities. This advocacy focuses on (a) responsive state and federal policies, (b) fair and sustainable funding, (c) sensible and responsible oversight, (d) modern frameworks for curriculum and instruction, (e) thoughtful teacher licensure requirements, and (f) valid research

Identifying a pattern to the development of e-learning, Brown, Anderson and Murray (2007) describe the first stage of development as when governments act to make e-learning possible, and the second stage as when work is done to integrate e-learning into the education system. A transformative role for e-learning is seen as the third stage, creating changes to viewpoints of e-learning. Policy initiatives should be formed following this pattern. These initiatives include developing physical infrastructure, building and ensuring quality in e-learning, creating a system wide approach to e-learning, and embedding e-learning and aiming for sector efficiencies.

The recommendations and research described above provide part of the foundation for e-learning policy decisions. The development of online learning policy needs to be guided by a host of other variables.

**E-learning policy issues.** Online programs vary widely in a number of dimensions: (a) comprehensiveness—part-time programs or full-time schools; (b) reach—district, multi-district, state multi-state, national, or global; (c) type—district, magnet, contract, charter, private, or home; (d) location—school, home, or other; (e) delivery—synchronous or asynchronous; and (f) operational control—local board, consortium, regional authority, university, state, or independent vendor (National Association of Charter School Authorizers, 2006). Along with the additional dimension of type of instruction, which includes fully online, blending online and face-to-face, and fully face-to-face, Watson and Gemin (2009) point out the four dimensions pertinent to online learning policy issues: (a) comprehensiveness, (b) reach, (c) blended learning, and (d) location. Some online programs may provide both full-time and supplemental options. Funding is based on this variable however and supplemental programs do not generate state funding whereas students enrolled in full-time online schools usually do.

Historically funding for K-12 education in the U.S. has been structured around local control. However, several states make a distinction between online programming primarily serving students within a district and programs serving multiple districts and states. This raises questions about who pays teachers' salaries, and who receives the state's per-pupil funding. Other issues regarding the dimension of reach include teacher certification and reciprocity, variations in graduation requirements, portability of credits, and meeting state standards and accreditation requirements. As schools blend online and

face-to-face learning, implications for policymakers surface relating to location and financing of physical facilities, attendance, and requirements for teachers. Lastly, with the anytime, anywhere flexibility of online learning, establishing physical facilities serving multiple districts will present policy challenges with regard to funding, supervision of instruction, responsibility for student grading and progression, and graduation requirements.

With an understanding of how change impacts organizations, the importance of systems thinking as schools address policy issues regarding online learning is evident. Systems thinking in practice leads to sustainability (Fullan, 2005); and as school districts plan for the incorporation of online learning, developing programming that is practical and sustainable is essential for successful reform.

### **Practical and Sustainable Online Models**

While federal, state, and local policy is being shaped, some school districts are successfully forging ahead with online programming. Identification of the factors necessary to create practical and sustainable models for successful online programs is helpful for those districts in the planning stages of online programming.

**Nature of sustainability.** “Sustainability is the capacity of a system to engage in the complexities of continuous improvement consistent with deep values of human purpose” (Fullan, 2005, p.ix). Fullan identifies eight elements of sustainability that include (a) public service with a moral purpose, (b) commitment to changing context at all levels, (c) lateral capacity building, (d) intelligent accountability and vertical relationships, (e) deep learning, (f) dual commitment to short-term and long-term results, (g) cyclical energizing, and (h) the long lever of leadership. When these elements are

combined to address adaptive challenges— those problems requiring a solution outside of the normal mode of operation— the resulting solutions will be theoretical and practical.

As systems encounter large-scale reform, the ability to draw on the capacities for individual and organizational learning is a key priority (Morgan, 2006). The ideas of deep understanding (Bereiter, 2002) and learning organizations (Morgan, 2006) define the capacity of a system to develop relationships and make decisions based on mutual goals, interests, and skills. Finding the correct balance of vertical relationships within a system involves the aspects of support and resources and also accountability (Fullan, 2005). Elmore (2004) points out how these two aspects work together, resulting in the principle of reciprocity. In practice this will be evident when management provides the necessary resources for the performance demanded of the individual workers.

The process of change is complex and current authors have congruent as well as conflicting opinions to offer. Supporting both short- and long-term results, Fullan (2005) argues short-term results are needed to build trust with the public for longer-term investments. Fullan cautions short-term progress should not be accomplished at the expense of mid- to long-term progress. Senge (2006) expresses a slightly differing viewpoint. By placing an emphasis on short-term results, Senge states attention is diverted away from the actual results people are trying to achieve. He suggests focus is the key to long-term results.

During the process of working on adaptive challenges within a collaborative culture, members of the group are putting out high levels of energy in an effort to implement strategies for success. The success value of these strategies, however, may eventually level off and investigation into alternative strategies for better solutions is

needed. Fullan (2005) terms this process cyclical energizing, an essential element to sustainability.

Ultimately however, and completing the circle back to leadership, in order to deal with the adaptive challenges faced by organizations a critical mass of sophisticated leaders committed to deep learning and problem solving is required (Smith, 2008). Fullan (2005) refers to this as the *long lever of leadership*. Fullan further comments leadership at all levels must be the primary engine if a system is to be mobilized toward the direction of sustainability.

**Planning for sustainability.** As schools address the challenge of large-scale reform with the adoption and implementation of online programming, sustainable growth of online education will require commitment to high quality education for all students. Practicing systems thinking at all levels is the key to sustainability (Fullan, 2005). At the state level, policies will need to be developed to accommodate the unique features of online education. At the district level, clarification of district goals and visions affect decisions made. Administrators at the school level, in addition to defining boundaries for online programming implementation, will need to provide the tools and support necessary to build the foundation for any online programming.

With resources in place, to meet the demand of administrators, teachers as leaders can engage in deep learning as they develop strategies for online programming that will best fit the needs of students. Fullan (2005) suggests people learn best from peers “who are further down the road” (p.18). During the planning stages, it would be valuable for schools and teachers to confer with other school districts that have developed and implemented online programming. By conceptualizing how online programming can

coexist with current curriculum offerings, a core group of school leaders can keep the school community learning by empowering others, faculty and students, to make decisions needed to enhance the sustainability of the online programming within the organization.

As schools implement their online programs, showing short-term results will be necessary in order to gain public support. Thinking of long-term options, however, will be one of the keys to sustainability (Fullan, 2005; Ollhoff & Walcheski, 2002). Once programs are established and are providing the online opportunities that meet the needs of students, a mechanism will need to be created for continuing discourse to review how these educational opportunities can be fostered to improve student achievement (Trujillo et al., 2007). This is an example of cyclical energizing, as described earlier by Fullan(2005), involving a process of expending high levels of effort within a collaborative culture as online programming initializes balanced with less intensive activities for replenishment of energy. This period of rejuvenation can be used for self-evaluation. When combined with outside evaluation, the whole system is involved in the process of accountability. These vertical relationships are a much-needed component of sustainability (Fullan, 2005).

Finally, distance learning is not possible without restructuring the bureaucracy currently inhibiting institutions (Cavanaugh & Blomeyer, 2007). Because funding is a complex issue, it demands ongoing research, understanding, and development. In the case of online education, funding decisions require careful consideration of the consequences involved with each of the online programming options (Trujillo et al., 2007). School districts may need to redeploy existing resources and give local governing bodies the

confidence to invest funding that will focus on teaching and learning. Sustaining districts will seek and attract resources, use them to produce the desired results, and create a “virtuous resource cycle” (Fullan, 2005, p.74). In the case of funding, Fullan suggests external partnering with business groups, foundations, community-based organizations, universities, networks and federations. When external partners are combined with strong school leadership and internal energy, the result is a workable and successful combination for undertaking the implementation of online programming within a school district.

Schools just like companies want to keep improving at what they do and have continued to do so based on the metrics used to judge improvement (Christenson et al., 2008). Educational reform since the 1990s has focused on accountability for student performance demanding new knowledge of curriculum, pedagogy, and organizational improvement (Elmore, 2004). Christenson et al. further point out with the new jobs schools were assigned to carry out as a result of the 1983 report, *A Nation at Risk: The Imperative for Educational Reform*, and the *No Child Left Behind Act* of 2001, schools have done remarkably well. Implementing disruption in education which result in positive outcomes is possible.

**The disruptive innovation theory.** A change theory having the potential to describe and inform this proposed online learning movement is the disruptive innovation theory. Christenson et al. (2008) explain a sustaining innovation will sustain the performance improvement trajectory within the established market. Examples of such innovations include airplanes that fly farther, cellular batteries that last longer, and computers that process faster. Companies introducing these innovations are already

industry leaders. Typically the technologies involved with these innovations are complicated and expensive allowing only those people with large amounts of wealth and skill to own and use the products. When IBM manufactured mainframe computers from the 1950s to the 1970s, people who needed to compute depended on computer experts to manage the stack of punch cards and run the computing job.

Occasionally, a disruptive innovation will emerge and disrupts the traditional improvement trajectory. The product or service is not actually as good as what companies have been selling; therefore existing customers cannot use it. But because the product is more affordable and easy to use, the non-consumer who is unable to consume the more expensive product can now benefit. A classic example of a disruptive innovation is the personal computer (Christenson et al., 2008).

Following the production of the mainframe computers was the minicomputer. While much smaller than the room-sized mainframe computers, it still sold for over \$200,000 and required an engineer to operate. Digital Equipment Corporation (DEC) was the leader in the production of the minicomputer (Shelley, Cashman, Gunter, & Gunter, 2006). DEC continued to be successful as the personal computer emerged into the market. The personal computer was not good enough for the problems customers of DEC needed to solve (Christenson et al., 2008).

The personal computer eventually resulted in the demise of DEC, however. The personal computer slowly improved with the capabilities of doing the work previously done by mainframes or minicomputers, thus creating a new market with its innovation. For DEC, improvement in their product meant making it bigger and more powerful, and appealing to existing customers—a sustaining innovation. The disruptive innovative

nature of the personal computer however, resulted in creating machines that were smaller, cheaper, and easier to use (Christenson et al., 2008) and available to many more new customers.

Applying the concept of disruptive innovation theory from the private sector to the public sector presents an interesting analogy. As public schools search for methods of instructional improvement for student learning, the concept of student-centered learning via the disruptive implementation of computer-based learning commands attention. A distinction needs to be made here regarding the use of technology in the form of computers in schools and computer-based learning in education. As mentioned earlier, the success of a disruptive innovation is dependent on non-consumption—when the alternative is nothing at all (Christensen et al., 2008). There are a many reasons why students do not or cannot attend traditional schools. Computer-based learning in the form of online classes represents a classic example of why this disruptive innovation can be successful for these students as well as other students.

The non-consumption factor does not apply to attending school since school attendance in the U.S. is required, but it does apply to other areas of non-consumption. Those areas include unavailability of courses due to funding, geography, or lack of qualified teachers at local schools; homebound students and those students with medical conditions preventing them from attending traditional schools; teen parents and other at-risk students who have exhausted the choices of schooling options (Watson & Gemin, 2010). These scenarios of non-consumption comprise an expanding market in which school districts can fulfill a need for education delivery via online courses.

## **A Learning Model for the 21<sup>st</sup> Century**

Distance education and the model of online courses supports 21<sup>st</sup> century skills such as creative problem-solving, synthesizing and integrating information; using networks and workgroups; understanding multiple perspectives; and the ability to communicate effectively in multiple media. The availability of these programs for K-12 students however, is not uniform (Cavanaugh, 2009). In addition to this inequity in online course access, many educators, policymakers, and parents are unaware of the basics of online education operations resulting in some common misconceptions (Watson, 2007).

**Misconceptions and myths.** Some critics will argue online learning is just a high-tech version of the old correspondence course and virtual schools are just about the technology. In truth, the technology is the medium and the student, instructor, content, and learning goals are still key (North American Council for Online Learning, n.d.). Another misconception is online courses are only good for gifted, talented, and highly motivated students. Online learning serves these types of students but also provides opportunities for at-risk students, dropouts, migrant youth, pregnant or incarcerated students as well as elite athletes or performers (Watson, 2007). It is also said by some that online courses lack interaction; students are isolated and are therefore socially disadvantaged. If designed and delivered thoughtfully, online courses can provide socialization through projects and activities requiring collaboration via technology in addition to face-to-face meetings (Watson, Gemin, & Coffey, 2010; Watson & Gemin, 2009; Watson, 2007; North American Council for Online Learning, n.d.). Finally, a common misconception is online courses are easier than regular courses and cheating is easier when the course is online. Well-designed courses are aligned to rigorous state

standards, are supervised by state-certified teachers, and have competency-based academic progress requirements in effect. Cheating online is no more prevalent than in a face-to-face classroom. In some cases, technological methods can track and even deter cheating (North American Council for Online Learning, n.d.).

When considering online learning, a good starting point is for school officials to assess their own school district as a systems thinking organization based on the criteria of the ability to successfully maneuver, manipulate, and manage change while implementing an innovative educational initiative. The potential value of providing online learning opportunities for students outweighs any criticism. Additional factors need to be considered, however, to create practical and sustainable models for successful online programs for high schools.

**Elements of successful and practical models.** A prediction regarding the growth of online learning is it will continue to grow as progress is being made in implementing K-12 online learning in the U.S. (Watson, et al., 2009; Cavanaugh & Blomeyer, 2007). Christensen et al. (2008) predict by 2019, 50 percent of all high school classes will be delivered online. The U.S. school system, however, is divided into 15,000 school districts and 50 states, each characterized by distinctive academic requirements and educational policies. This landscape makes it difficult to expand online learning globally, across state borders, and even outside of local districts (Gustke, 2010). This may account for why most of the online program growth is emerging from the individual school district level, which is where most American education trends experience lasting success (Watson, et al., 2009). As school districts respond to the increasing growth of online education,

decisions regarding a number of factors need to be carefully considered in order to create practical and sustainable online programs.

***Content providers.*** Online learning programs may be structured in a variety of ways. In addition to state-recognized charter schools, there are local and regional agencies as well as private profit and non-profit organizations developing programs. Postsecondary institutions also provide courses for high school students (Picciano & Seaman, 2009). Several existing approaches and providers are described below.

***Statewide virtual schools.*** These programs are developed, administered, or funded by state appropriations to provide online learning opportunities across the state. These schools mainly provide supplemental courses for students attending regular school and also serve home schooled students (Watson et al., 2009; Cavanaugh & Blomeyer, 2007).

***Cyber charters.*** These are tuition-free public schools operating under a charter from a sponsoring agency such as a school district. The district in which a student resides generally pays for the cost of these cyber charter schools (Cavanaugh & Blomeyer, 2007). Students enroll and earn credit issued by the school towards academic advancement based on successful completion of courses (Watson et al., 2009).

***Consortium.*** These are online programs serving students from multiple districts and can be led by a state, regional, or local education agency (Watson et al., 2009). Virtual school consortia pool the costs of developing and obtaining curriculum that follows common design standards (Cavanaugh & Blomeyer, 2007).

***College- or university-based.*** U.S. postsecondary institutions conduct a significant portion of K-12 online learning. Programs such as gifted education, dual enrollment, and

early college credit account for additional K-12 online learning via colleges and universities (Cavanaugh & Blomeyer, 2007).

*Private providers.* These for-profit agencies are independent vendors who offer online programs to individuals as well as educational agencies. Many of these companies offer online content, infrastructure, and instruction along with regionally accredited high school diplomas (Cavanaugh & Blomeyer, 2007). Demand for these providers may be high from small rural school districts that do not have the resources to offer a wide variety of courses or build their own online curricula (Gustke, 2010).

*Local school district.* The entity experiencing the largest rate of growth is individual school districts. This could be a result of districts fearing the loss of their own students to full-time online schools. Districts in states with multi-district full-time online schools want to retain their own students. Programs originating at the district level serve students who reside within the district providing the online courses (Watson et al., 2009) Local education agencies operate their own freestanding programs using their own online instructors and content that is either purchased or developed. Various state and local funding policies determine the operation of these local virtual schools (Cavanaugh & Blomeyer, 2007).

**Curriculum.** Pape (2005) suggests the philosophy of student-centered learning needs to guide the design of online courses. This philosophy should be evident in all course documents, activities, discussions, and assessments. Because of the nature of online delivery, both curricula and instruction can be individualized to suit students' unique developmental levels (Cavanaugh, 2009). Models for content development include principles and strategies based on researched learning theories that match student

needs (Cavanaugh & Blomeyer, 2007). By using Web 2.0 tools and other emerging approaches such as games and other interactive technologies within course design, students are being pushed to a higher level of thinking (Watson & Gemin, 2009).

While providing more differentiated instruction, there must be a direct connection between strategies and activities and outcomes or goals (Davis, 2010). Curriculum standards should be revised to guide online course developers, instructors, and consumers (Pape, 2005). A common national approach to content standards can provide improvement in both curriculum quality and accountability. With quality measures and data available to fully evaluate individual student outcomes, further development of online programming can be guided by actual results (Watson et al., 2009).

Likewise, curricula and instruction need to coincide with methods of assessment. Regardless of whether the instruction is delivered fully online or blending online with face-to-face instruction (hybrid), emphasis on authentic assessments over traditional tests and quizzes is necessary to provide methods of assessment that better meet the needs and learning styles of individual students (Pape, 2005).

**Professional development and teacher quality.** Before offering online courses to students, districts are discovering the value of online professional development and training. This allows administrators and teachers to become more comfortable with online learning (Watson et al., 2009) This comfort level can then lead to creating online professional development courses or modules, which encourage educators to start with a subject of interest, possibly outside their own content area, and develop online content using new online teaching strategies that support constructivist learning. This places an emphasis not on what to learn, but how to learn (Cavanaugh & Blomeyer, 2007). Ferdig

(2006) suggests educational innovations must be steeped in academic content and practice. Ferdig further states this involves “tying the innovation to learning theory to create authentic and engaging activities for students” (p.750). Learning from this social constructivist perspective involves improvisation and adaption to immediate, constantly fluctuating circumstances. Therefore, the same is required of teaching. Innovation merged with good pedagogy should be imbued with opportunities for active participation, collaboration, and social interaction (Ferdig, 2006).

Implementing these professional development opportunities will require time and incentives (Cavanaugh & Blomeyer, 2007). As schools and teachers put time and effort into building an online course, they will need to receive financial compensation or release time from other assignments. Some states such as Ohio and Arkansas are providing small grants to cover teacher and administrator salaries. Maine requires schools to share the cost of teacher support with funds from a state grant. Successful states and school districts recognize development of online programming needs financial support if programs are to flourish (Project Ideal, n.d.).

Even though teachers are far more important to students than the technology (Watson & Gemin, 2009), a higher level of instructional technology skills will be needed by an online teacher. A successful online teacher will need effective communication skills to provide support for students (Cavanaugh, 2009). Well-designed online instruction combines opportunities to appropriately, (a) engage learners with multiple types of resources based on individual preferences, (b) improve the flexibility of instruction by integrating multiple types of interaction, and (c) include multiple forms of

communication among instructors, learners, and others beyond what might normally occur in a traditional classroom (Koszalka & Ganesan, 2004).

In addition to bringing knowledge of pedagogy, academic content, and pedagogical content knowledge into educational innovations, the classroom teacher may or may not be the technology expert. Regardless, the intended outcome is the creation of technology innovations supporting pedagogy and pedagogy fundamentally changed by its integration with technology (Ferdig, 2006). Discussing the importance of pedagogy as an innovation building block, Ferdig suggests innovations immersed with good pedagogy will provide many opportunities for active participation, collaboration, and social interaction, which can all be supported and enhanced by using technology.

Flexibility for the individual student is one of the appealing features of the online model. In order to accommodate this feature, successful online teachers will need to appropriately balance the use of synchronous and asynchronous content (Quillen, 2010). In addition to accessing online courses from home, students may need alternative methods of online access. The school day may need to begin earlier and end very late to accommodate access to school computer labs and classrooms. Partnerships with students' employers may result in computer availability before and after work hours. Providing Internet-connected mobile devices such as netbooks and smartphones to students will allow additional access for students as they travel between home, school, work, and extra-curricular activities (Cavanaugh, 2009).

**Technology infrastructure.** Adequate technology hardware and network access are essential for distance education programs along with the assurance every student in a school has access to the technology infrastructure required for online courses

(Cavanaugh, 2009; Pape, 2005). The technology requirements and level of functionality necessary to support online courses will be determined by the capabilities of gathering, retrieving, creating, and sharing of resources. Comparative analyses of learning management systems (LMS) show very little difference in the functionality of the systems. The cost and comfort level are more influential in the choice of LMS (Cavanaugh & Blomeyer, 2007).

Cavanaugh (2009) suggests there are opportunities to involve community-based organizations to ensure student access to low-cost computers, netbooks, and handheld devices within the school building. Outside of school hours, community organizations have the ability to provide access to computer labs or provide network access for students and families.

**Management and support services.** Just as with traditional schools, student services such as counseling and guidance, registration, grading, teaching assistance, and library resources will need to be provided for online students. Because of the nature of an online environment, 24/7 help-desk support is valuable in addition to an orientation on how to use the course platform and online etiquette (Pape, 2005). Cavanaugh (2009) suggests schools implementing online courses also include and prepare parents, online tutor/mentors, and site facilitators who can work where students are accessing online courses. Some schools have equipped a room within the school building with computers, staffed the room with an adult monitor, and have dedicated the room for use with online classes during the school day (Davis, 2010).

**Costs and financing.** The cost associated with online learning programs is similar to programs in a traditional school setting. Parallel cost items include instructors,

administrators, staff, professional development, curriculum and materials, assessment and evaluation, and data systems. Even though full-time online programs have no cost for an instructional facility, transportation, and related staff, there is a substantial cost for the technology infrastructure (Cavanaugh, 2009). Another significant front-end cost is for the development of instructional materials needed for online courses (North Central Regional Educational Laboratory, 2002). School districts deciding to develop their own online programs will have the advantage of complete control over what is produced and for whom. The disadvantage, however, is the need to invest in resources for learning how to set up a program and how to launch, manage, and evaluate online programs (Cavalluzzo, 2004).

The ways in which online education programs currently receive funding vary greatly from state to state. Two traditional methods of financing online learning have been by annual appropriation, and attendance and seat time. Most state-led virtual schools are funded by a specific amount the legislature appropriates each year. These funds can be useful for start-up costs, but the limited amount of funding prevents sustainability of programs. Traditional school funding is based on student attendance or seat-time (how long a student spends in class). This formula prevents the students from working at their own pace while taking an online course (Ash, 2010). Additionally, some school districts may face significant financial constraints, limiting the quality and the rate of development for online courses (Cavalluzzo, 2004).

The funding becomes complicated as for-profit providers seek enrollment from outside their school district causing a more competitive educational market. School districts pay on a per-student or course-credit basis for online courses. Some argue this

competition is a healthy transformation of public education while others will argue this for-profit ideology is incongruent with the tenets of public education (Cavanaugh, 2009).

Most virtual schools and online programs struggle with sustainable, adequate, and equitable funding. State-led programs are paid for through state appropriations and limits the number of students who can enroll in the program, preventing growth of the school. An alternative to this method is one used by the Florida Virtual School. First, funding follows the student. This ensures a sustainable way of providing funding for virtual schools and online programs and would eliminate enrollment caps. Second, funding is tied to student performance. This plan requires a student to successfully complete a course before the virtual school is paid. This method frees the student from time constraints and promotes continuous improvement in performance of students, teachers, and administrators (Ash, 2010). By funding students upon successful completion of defined benchmarks or milestones for incremental completion, the approach is more predictable and rational. One of the challenges states face in establishing funding models for online programs is the data systems and finance systems lack the sophistication to track funding for each student's individual courses. Based on our current educational system, time is the constant and achievement is the variable. Online learning provides an opportunity for achievement to be the constant and time the variable (Watson & Gemin, 2009)

## **Chapter Summary**

Online learning is fundamentally changing the dynamics of K-12 education. The present stage in the technological evolution of education has resulted in dramatic changes in both teaching and learning that are no longer dependent on time or classroom location.

This change in the paradigm of how and where students access their education offers personalized instruction via learning that is performance-based. Online learning also provides curricular options and expands access to education for all students. With the use of Web 2.0 tools such as blogs, wikis, and multiuser virtual reality applications such as Second Life, early adopters of online education have recognized the value of teaching and learning in a global environment.

The rapid growth of online learning has created pressure for individual school districts to provide an online option for students. Many categories of online programs exist including state virtual schools, multi-district, single-district, consortium, and post-secondary. Each of these options offers attributes that could fulfill the needs of school districts and students. The lack of statewide policies regarding online learning programs to inform school districts however, has resulted in administrators, teachers and students trying to figure out how best to implement online learning into existing curriculum offerings. School districts must also identify operational changes necessary to provide online learning for students successfully.

Change is a topic not unfamiliar to education. A historical look at educational reform will reveal a plethora of philosophies, ideologies, and theories influencing instructional practices. Innovations in education begin with a foundation constructed from a culmination of previous ideologies and practices, which can add complexity and chaos to school planning.

As school districts respond to the demand for online programming, issues such as changes in organizational structure, funding, technology infrastructure, curriculum, state and national policies and standards, staff training and support, student training and

support present challenges and controversies that need to be addressed. School districts can benefit greatly from the identification of essential elements in planning for and implementing online programs. Thoughtful planning and preparation of all stakeholders can help to ensure an online program that is successful and sustainable.

## **Chapter Three: Methodology and Research Approach**

The purpose of this study is to identify the systemic changes experienced as traditional high schools implement online learning programs, and the impact the educational option of online learning has on organizational policies and procedures. The factors needed by traditional secondary schools to achieve success and sustainability with online teaching and learning are also identified in this study. Three research questions are addressed in the context of three traditional high schools:

1. How have these schools adopted and implemented online programs into existing curricular offerings?
2. From an educational policy perspective, how has the incorporation of online programs impacted current organizational policies and procedures within these schools?
3. What factors are necessary to create practical and sustainable models for successful online programs within existing traditional schools?

### **Study Design**

For the purpose of this study, the qualitative research approach was chosen. This approach is rooted in phenomenology, a philosophy maintaining knowledge is gained by understanding the direct experiences of others: it is descriptive, and relies on narrative and story (Trochim, 2006). Throughout the research process, the researcher is personally involved in the phenomenon in order to gather data (Babbie, 2007; Trochim, 2006; Blaikie, 2000).

Creswell, (2007) identifies five types of qualitative approaches: (a) ethnography, (b) phenomenology, (c) narrative research, (d) grounded theory, and (e) case study. This

study uses the case study approach. The focus of case study is to develop an in-depth description and analysis of a case or multiple cases by studying an event, a program, or an activity of more than one individual. Data collection forms include interviews, observations, documents and artifacts.

To answer the questions proposed by this study, the qualitative research approach provides an appropriate and logical framework. In the context of traditional high schools, the phenomenon to be studied is how these schools adopted and implemented online programming, how the incorporation of online programming impacted organizational policies and procedures, and factors necessary to create practical and sustainable models for successful online programs. The qualitative research process provides elements allowing the capture and description of the phenomenon as it is experienced. In qualitative research, looking broadly and deeply to capture as many factors and influences that shape and are shaped by the experience is the goal.

McMillan (2004) describes the following elements that commonly define qualitative studies. *Natural settings* allow for the study of behavior as it occurs naturally without external constraints. *Direct data collection* results in obtaining information directly from the source as the investigator spends time in direct interaction with the setting or participants she/he is studying. Nothing is trivial or unimportant within a setting producing *rich narrative descriptions* recorded in words. Qualitative studies are process oriented with an emphasis on how a behavior, norm, expectation, or perspective is formed and how it plays out in the experiences of the participant. *Inductive data analysis* allows for theory to develop from the ground up as data are gathered first and then synthesized inductively to generate generalizations. By reconstructing reality as the

participants experience it, *participant perspectives* focus on the meaning of events and actions as expressed by the participants. With a commitment to *emergent research design*, the researcher begins the study with an idea, some formulated questions, a plan for data collection, and how the study will proceed but with the expectation all will evolve and change as the researcher learns from the data as the study progresses.

For this study, to understand the experience of traditional high schools as online programming is integrated into the existing school structure, the qualitative research approach was the best choice. This approach provided insight into the change process regarding how each of these high schools established and currently maintains its online programs followed by a comparison across the schools to determine the factors necessary for practical and sustainable models for successful online learning.

Case study methodology was used for this research project to provide in-depth study of particular cases for the development of grounded theory. Blaikie (2000) describes case study not as a specific research technique but rather a way of organizing social data in order to preserve the unitary character of the social object being studied. This is an approach that views any social unit as a whole and includes the development of that unit. By using this approach, the sites studied within this research project were viewed as a single unit, with information collected from the perception of individuals within the unit. Case studies allow for a multi-perspective analysis meaning the researcher considers not just the voice and perspective of the participants but also groups of participants and the interactions among them (Tellis, 1997).

Grounded theory is a qualitative research design by which the researcher generates a general explanation of a process, action, or interaction molded by the views

of participants within the study (Creswell, 2007). Using an inductive approach, grounded theory attempts to generate a theory from the constant comparison of emerging data (Babbie, 2007). As mentioned earlier, prior research regarding online learning at the higher education and high school levels have focused on student performance, perceptions of online learning, and a number of other topics. What is lacking is research identifying sustainable and practical models resulting in successful online learning at the secondary level (Cavanaugh & Blomeyer, 2007). The use of grounded theory can help to eliminate this void in the literature.

### **Research Sample**

In this study, the research participants were current or retired employees of traditional public high school organizations and included administrators (superintendents, principals), teachers, and a media specialists. Research sites and members were chosen using purposive or judgmental sampling and sub-categories of this sampling strategy. *Purposive or judgmental sampling* is a type of non-probability sampling in which the units of analysis are selected on the basis of the researcher's judgment about which ones will be the most useful or representative (Babbie, 2007). The logic of using purposive sampling lies in selecting cases that are information-rich, with the potential of yielding insight and understanding of the phenomenon under investigation (Bloomberg & Volpe, 2008). Implementing purposive sampling allowed for selection of sites that would supply firsthand experience with the phenomenon. The sites chosen were traditional public high schools who have implemented online programming into the existing curriculum and have created ongoing, practical and sustainable models for successful online programs for a minimum of one academic school year. A delimiting time frame of one year was

decided to ensure some experience with a successful online program. Public high schools were chosen to ensure similar local and state policies governing the school district.

A sub-category of purposive sampling is *maximum variation sampling*, used to select participants who represent the widest possible range of the characteristics being studied (Bloomberg & Volpe, 2008). Utilizing maximum variation sampling in the collective case study approach of qualitative research allows for a diverse representation of cases to assist in obtaining multiple perspectives about the cases (Creswell, 2007). For this study, three research sites were chosen. One school site was located in a large metropolitan city, one in a mid-size urban area, and one in a small rural area within an upper Midwest state.

Selection of the research participants within the selected research sites was based on *snowball* or *network sampling*, a purposive sampling subcategory. This sampling strategy selects a few participants who possess certain characteristics, and they are asked to identify and refer others who are known to have the same or similar characteristics (Bloomberg & Volpe, 2008; Babbie, 2007). For this study initial contact was made with the superintendent at each research site who was asked to identify other organizational members involved in the phenomenon of online programming implementation within his/her high school. Organization members included superintendents, principals, teachers, and a media specialist.

## **Overview of Information Needed**

For qualitative studies, four categories of information are typically needed: (a) contextual, (b) perceptual, (c) demographic, and (d) theoretical (Bloomberg & Volpe, 2008). This multi-case study explored three research questions to understand the

organizational change process involved in traditional high schools as each school implemented online learning programs. Information needed to answer these research questions fell into the four categories.

**Contextual information.** Each of the cases studied are traditional public high schools which have implemented an ongoing online learning program into the existing curriculum for a minimum of one academic school year. Information regarding the school district's organizational structure, rules and procedures, academic requirements, vision pertaining to educational technology, and technology infrastructure was collected through examination of public documents.

**Demographic information.** Participant profile information was obtained by a preliminary survey distributed and completed before the interview process. This information included age, sex, level of education, occupation, training and experience in educational computing, and personal and professional use of computer technology.

**Perceptual information.** This category refers to the participants' perceptions related to the subject of inquiry. For this study, this information is the participants' descriptions of their experiences within the organizational change process as the high school adopted and implemented online learning into the existing curricular offering.

These experiences related to factors such as:

- how decisions were made to implement online learning,
- whether participants had a change of mind or shift in attitude during the organizational change process,
- to what extent the participant was involved in the change process,

- how influential the participant was in the adoption and implementation of online programming,
- how the incorporation of online programs impacted current education policy and procedures within the high school
- and participants' perception of the factors necessary to create practical and sustainable models for successful online programs within their high school.

**Theoretical information.** A review of the literature for this study explored systems change and the impact incorporation of online learning programs has on existing state and local procedures and policies. Additionally, the application of the theory of disruptive innovation within this study revealed factors necessary for the creation of practical and sustainable online learning models. This literature representing the change process and disruptive innovation theory contributed to the lens through which the researcher approached this study.

### **Research Design Overview**

The following list summarizes the steps used to carry out this research. Details about each step are provided in the next section.

1. Upon approval from the Institutional Review Board (see Appendix A), superintendents at potential research sites were contacted by mail to request access to the identified high school.
2. Following receipt of documentation of approval from the research site, a request was made by the researcher for suggestions of school personnel who were involved in the process of online programming implementation within the research site.

3. Potential research participants were contacted by telephone and were given a thorough explanation of the research study. Those who agreed to participate were sent an informed consent form and a survey questionnaire by mail. The survey was designed to collect demographic data from each participant.
4. Semi-structured, in-depth interviews were conducted with two or three participants from each of the three traditional public high school sites selected for the study.
5. Interview data responses were transcribed and submitted to the subjects for review, correction, and feedback. The interview transcriptions were analyzed within and between participating sites and individuals.
6. Participants were provided the opportunity to correct errors and challenge what were perceived as misinterpretations of the data. Member-checking also allowed participants to volunteer additional information which may have been stimulated by the playback process.

### **Data Collection Methods**

The use of multiple sources of information is characteristic of good case study research (Creswell, 2007). Multiple methods of data collection also reduce the likelihood of misinterpretation in the process of obtaining an in-depth understanding of a phenomenon (Bloomberg & Volpe, 2008). This study employed survey questionnaires and interviews and also included a review of documents.

**Phase I: Survey.** School district superintendents were initially contacted by mail by the researcher requesting access to the high school selected for the research study (see Appendix B). Following the receipt of documentation of approval from the school

district, school administrators were asked to suggest potential participants. These participants met the selection criteria of being involved in the development or implementation of online course programming within their high school. The potential participants were contacted by phone (see Appendix C); they were informed of the purpose of the study and were extended an invitation to participate. Of those who were contacted, eight individuals agreed to participate and were sent an Informed Consent form (see Appendix D) and a survey questionnaire (see Appendix E) by mail. The two completed documents were collected at the beginning of the individual's interview session or were returned to the researcher by email immediately following the interview. The questionnaire was designed to collect profile data and also asked the participants to briefly describe their personal experience with online programming.

Using the survey method of data collection provides an unobtrusive and easily administered means of gathering initial data (Bloomberg & Volpe, 2008). The questionnaires were not intended to collect or measure data regarding complex social relationships or intricate patterns of interaction (Babbie, 2007), but were intended to provide insight regarding an initial starting point of the individual interviews that followed.

**Phase II: Interviews.** The primary method for collecting data for this study was the interviews. "Interviews play a central role in the data collection for a grounded theory study" (Creswell, 2007, p. 131). The benefits of using interviews in qualitative inquiry are they provide an opportunity to learn about what the researcher cannot see and to explore alternative explanations of what the researcher can see (Glesne & Peshkin, 1992). By fostering interactivity with the participants in their natural setting, interviews can

elicit in-depth, context-rich personal accounts, perceptions, and perspectives (Bloomberg & Volpe, 2008). Seidman (2006) adds, as a method of inquiry, “interviewing is most consistent with people’s ability to make meaning through language” (p. 14).

Qualitative interviewing is based on a set of topics and concepts to be discussed rather than based on a set of standardized questions (Babbie, 2007). Questions asked must elicit answers that illuminate the phenomenon of inquiry, however, should be anchored in the cultural reality of the participants and must draw from the participants’ lives (Glesne & Peshkin, 1992). By using a semi-structured interview format, the interviewer can design and ask questions based on the research topics. One of the benefits of the interview method of research is flexibility. Additional questions can be generated during the interview process based on initial responses provided by the respondent (Babbie, 2007).

***Interview questions.*** The study’s three research questions served as a framework to develop questions for the interviews. The complete list of interview questions can be found in Appendix F.

***Interview process.*** Participants who agreed to take part in the study by understanding the Informed Consent form and completing the survey questionnaire were contacted by phone to establish a convenient date and time for a personal interview. The participants were informed of the study purpose, the amount of time needed to complete the interview, and plans for using the results from the survey and interview. The interviews took place during November and December 2010. Interviews were conducted face-to-face and were digitally recorded in their entirety. Immediately following the interviews, the researcher recorded field notes identifying impressions and comments on

the flow of the interviews. The digital file of the interview and the researcher's field notes from each interview were saved electronically in Transana, computer software used for transcription. The digital recording of each interview was transcribed following the interview. The original copy of the interview was also saved externally from the database on a CD-ROM.

**Confidentiality and anonymity.** Relationships between the participants and the researcher formed during the research process. Glesne & Peshkin (1992) state because power is disproportionately on the side of the researcher, care needs to be taken to protect the rights of the participants to privacy. A research project guarantees confidentiality when the researcher can identify a given participant's responses, however promises not to do so publicly. Confidentiality differs from anonymity. Anonymity assures the identity and responses of the participant are protected not only from the public, but also the researcher (Babbie, 2007).

Within this research project, survey questionnaires were initially sent to each participant in order to gather preliminary profile data and to understand the participants' role in online program implementation within their school district. Interviews were the primary method of gathering data from participants, and the participants' responses to the survey questionnaire helped to structure the interview focus and questions. By using these two methods of data-gathering, anonymity could not be guaranteed, however confidentiality was promised to each participant regarding data collected from the survey questionnaire and also the interview. All data collected from the survey questionnaires and the interviews were saved on the researcher's password protected laptop computer and also saved externally on a CD-ROM kept in a secured area.

## **Data Analysis and Synthesis**

Data analysis for this study began with the process of open coding by using the categories comprising the conceptual framework of the study as repositories of the data. These initial categories were deductively obtained from the literature. Transana, qualitative data analyzing software, was used to identify the descriptors under the appropriate categories of the conceptual framework and to add new themes as the analysis process proceeded. During the open coding process, data was broken down, examined, compared, conceptualized, and categorized. Blakkie (2007) explains this initial classification and labeling of concepts allows for the creation of codes upon examination and questioning of the data. The formation of codes and categories represent the heart of qualitative data analysis (Creswell, 2007).

Following the formation of codes and categories, the researcher developed a written narrative to aid in cross-checking the data and to provide a secondary analysis. The written narratives were aided by a primary feature of grounded theory, *memo writing*. Memo writing helps to facilitate the constant comparative method and theory development (Heppner & Heppner, 2004). Memo writing occurred throughout the data collection and analysis process and involved recording hunches, comments on samples, theoretical reflections, and links to the literature. Memo writing and development of the written narratives prepared the data and the researcher for the process of axial coding and also assisted in later writing of the results.

The next stage of the data analysis, axial coding allowed the researcher to put the data back together in a more meaningful way and generate relationships between categories and subcategories. This regrouping of the data allowed the researcher to

discover more analytical concepts. These analytical concepts can be positioned within a theoretical model leading to emergence of a grounded theory (Bloomberg & Volpe, 2008).

The responsibility of this study was to generate grounded theory, therefore constant comparison method was utilized. As a key concept was identified in one case, the researcher looked for evidence of the same phenomenon in the other cases studied, resulting in a cross-case analysis. Following this step the researcher began to note the relationships among all concepts by integrating categories and their properties and also situating the concepts within the issues presented in the broader literature. As patterns of relationships among the concepts became more evident, the researcher could begin to ignore some of the initial concepts noted that were not relevant to the study. With this reduction of categories, the theory became clearer. Occasionally the researcher returned to the field with more specifically focused and relevant questions to gather additional data until the categories of information became saturated and the emerging theory contained the details of its intricacies.

### **Issues of Trustworthiness**

In order to approach this study with an unbiased perspective, the researcher set aside personal experiences as much as possible. At the onset of the research study, the researcher identified through self-reflection the biases brought to the study. These subjective perspectives were monitored throughout the research process continually within field notes and memo writing. Creswell (2007) refers to this idea of bias control as *bracketing*. Control for potential biases within design, implementation, and analysis of a study is necessary to ensure accurate results (Bloomberg & Volpe; Glesne & Peshkin,

1995). Additional traits of trustworthiness will be supported and described within the context of this study

**Credibility.** To further ensure accuracy of the findings, additional steps were taken by the researcher to establish credibility of the study. Repeated interviewing required a significant amount of time spent within each case study site. This level of involvement established a mutual level of trust. As a result, there was ample time to prove maintenance of confidentiality. Heppner & Heppner (2004) suggest this prolonged engagement is a cornerstone in reaching a high level of credibility.

Each participant within this study was sent a copy of the transcription of the participant's personal interview. Participants were requested to review and to notify the researcher of any discrepancies within the transcription. Member checks provide critical evidence the researcher's portrayal and representation of the thoughts and feelings of the participants match the participants' perceptions. This step is considered to be most critical in establishing credibility (Lincoln & Guba, 1985).

**Dependability.** Mindful of the criterion of dependability, the researcher provided detailed and thorough descriptions of how the data were collected and analyzed. These descriptions provided documentation of the procedures used for data collection, the coding schemes, and categories used consistently throughout the research study. Dependability refers to whether the researcher can track the processes and procedures used to collect and interpret the data collected (Bloomberg & Volpe, 2008). Lincoln & Guba, (1985) refer to this as an audit trail which assists in determining whether the findings are consistent and dependable with the data collected.

**Confirmability.** In order to satisfy the objective concerns within a subjective research design, the researcher provided means to trace back to the origins of the data collected. The audit trail serves not only to provide dependability of the data but also provides the reader the opportunity to review, assess, and confirm the findings of the study. Confirmability implies the findings are the result of the research and not the outcome of the biases and subjectivity of the researcher (Bloomberg & Volpe, 2008). Qualitative research deals with multiple, socially constructed realities that are complex. The researcher's task within qualitative research is to understand and interpret how the participants in a social setting construct the world around them through active involvement with the participants (Glesne & Peshkin, 1995).

**Transferability.** To assist the reader utilizing transferability of the data presented, the researcher has provided thick descriptions of the data collected. By including rich descriptions in the study, the discussion has an element of shared experience. Denzin (2001) describes a thick description as a narrative that “presents detail, context, emotion, and the webs of social relationships” (p.83).

The detailed descriptions in this study assist with transferability which allows for the reader to determine whether similar processes described within this research project will be present in their own setting. Bloomberg and Volpe (2008) identify transferability as a criterion offering qualitative researchers some of the features generalizability offers quantitative researchers. Transferability refers to the “fit or match between the research context and other contexts as judged by the reader” (Bloomberg & Volpe, 2008, p. 78).

## **Limitations of the Study**

All studies have limitations that need to be recognized, preferably before the research design is completed and put into place. This allows the researcher to realize shortcomings of the research design and make modifications before data collection begins (Heppner & Heppner, 2004). This study recognizes certain limiting conditions, some are general critiques of qualitative research methodology and some are specific limitations inherent in the research design.

Qualitative research is limited by researcher subjectivity and researcher bias. This was an overriding concern of the researcher throughout the research process. The key limitations of this study include subjectivity and potential bias regarding the researcher's own participation as a teacher and student in online learning.

Case studies are inherently difficult to generalize. It is difficult to generalize the data from one case or several cases, which limits the usefulness of the data. Researchers may feel more comfortable generalizing findings when the case being studied can be shown to be similar to other cases in terms of relevant characteristics (Blakkie, 2000). This prompted the researcher to choose research samples reflecting variation in population numbers and geographic location.

A final limitation recognized in the research study is the manner in which the research samples were chosen, i.e. purposive sampling. Therefore, a criticism of this research may be the limited possibility of generalizing this study to other groups and programs. The rich and detailed descriptions included in the data summary, however, may provide adequate information applicable in other contexts.

## **Chapter Summary**

This chapter provided a detailed description of the methodology used for this research study. Qualitative case study methodology was utilized to generate grounded theory regarding the phenomenon of traditional high schools implementing online learning programs into existing curricular offerings. A conceptual framework was devised following an extensive literature review, which aided in the development of the design and analysis of the study. High school administrators, teachers, and a media specialist involved in the implementation of online programming in their respective high schools comprised the purposive sample.

Data were collected by survey questionnaires, individual interviews, and document review. The process of data analysis and synthesis involved examining, comparing and categorizing the data followed by regrouping of the data to formulate analytical concepts. Issues of credibility, dependability, transferability, and confirmability were addressed to demonstrate control for biases, to track the processes and procedures used to collect and interpret data collected, and to allow the reader to match the research context with other contexts. The following chapter will discuss these findings in the broader context of educational implications.

## **Chapter Four: Findings**

This multi-case study explored how traditional high schools have adopted and implemented online programming into existing curricular offerings and how the incorporation of online programs has impacted current organizational policies and procedures. The purpose of this study is to provide insight regarding the factors necessary to create sustainable models for successful online programs within traditional high schools. The concepts of implementation, policies and procedures, and sustainability provided the framework for the study and guided the process of data analysis. The following chapter summarizes key findings within each case and among cases obtained from eight participant surveys and in-depth interviews.

### **Settings and Participants**

The three research sites were chosen for the study on the basis of successfully offering online programming options for enrolled high school students. Each school district of the three research sites developed a state approved technology plan which is posted on a public website. All three research sites are located in the same Midwestern state, from here on referred to as State. Participants were chosen for the study on the basis of integral involvement in planning, developing, or implementing online learning programming within their high school. Participants included administrators, teachers, and a media specialist. Demographic information regarding site location, student enrollment, number of teachers, and administrative structure is included in Table 1.

Table 1

## Demographic Information of Research Sites

Site Location	Student Enrollment	Number of Teachers	Administrative Structure	Research Participants
Small Rural	130	20	Superintendent Principal	Principal Media Specialist
Mid-Size Urban	600	56	Superintendent Principal Assistant Principal	Superintendent Teachers (2)
Large Metropolitan	2800	175	Superintendent Principal Assistant Principal	Principal Assistant Principal Teacher

**Findings**

The results of the interviews have provided key findings providing a better understanding and an informed perspective into the process of online programming implementation within the traditional high school setting, the impact this implementation has on school organizational policies and procedures, and the factors necessary for the creation of practical and sustainable online programming models within traditional high schools. These findings are organized within a conceptual framework derived from the research questions and are centered around the concepts of *implementation, policies and procedures, and sustainability*.

**Implementation.** This section summarizes the events and experiences of participants during the process of adoption and implementation of online programming within their individual high schools. Various motivating factors were identified along with systemic impact and implications, and the reactions of those involved with the outcomes.

**Motivators.** There were several motivating factors noted by participants as reasons to bring online programming into their curricula. For example, students' natural technology skills, love of computers, and ability to connect online were mentioned as having the potential to lead to a "tipping point" in adopting online programming. Colleges are requiring online courses, and students at each site were currently enrolled in State-approved courses (citing credit recovery and scheduling conflicts as primary reasons). Recognizing online learning as a "wave of the future," each school was deeply concerned about students "shopping around" and leaving their home district. As a result of students leaving the district to go online, schools wanted to recover the lost State student aid and maintain control over the curricular content and rigor. The large metropolitan high school also recognized online learning may be a way to capture an emerging international market and also offer online courses to other communities in order to increase school revenue.

The pivotal motivating factor for each site, however, was specific to each school. For the small rural and mid-size urban high schools, the motivation to explore the implementation of online programming was driven by faculty with the support of administration. The pivotal motivating factor for the large metropolitan school was led by administration, with minor input from faculty. Each of the sites reported student demand was not a motivating factor in the decision to implement online programming.

For the small rural high school, grant funding provided an opportunity for faculty to receive a stipend for training in online teaching and a platform for course development and delivery. Subsequent online course offerings allowed students to remain in their home district and receive a diploma from their enrolled school.

The mid-size urban high school also had grant money available but for a dedicated student population i.e., at-risk students, who were not mainstreamed in the regular high school. Even though this site had experimented with online learning options for an increasing number of home-schooled students within the district, the credit recovery program offered to the at-risk students established a viable learning option for those students who were not attending the traditional high school.

Administration at the large metropolitan high school received a request from their school board to build flexibility into the student schedules as the school moved from a seven to six period day. In response, a fundamentally new model of delivering health curriculum via an online hybrid format to the entire school at one time was proposed and presented to the health faculty. The implementation of the hybrid format was funded through the regular school budget and therefore was cost neutral to the district.

***Systemic impact and implications.*** The task of teaching students online was a significant change from the daily face-to-face interaction experienced by faculty and involved a certain level of risk. The systems implications in each of the three sites varied and were all addressed differently. For the faculty at the small rural school and the mid-size urban school, involvement in online teaching was voluntary, not mandated by administration. Administration input varied greatly between these two sites from providing no or minimal support to continuous ongoing support. One administrator mentioned inquiring of other districts offering online learning programming and learning from those who were, “. . . a little further along than we were”. This administrator felt it was necessary not only to investigate what was already being implemented by others but also to build a culture appreciative of the online learning initiative. This was

accomplished in a planned out manner by creating a core of faculty committed to online teaching and learning and pairing them with faculty who were reluctant or resistant to online education. Regardless of the administrative level of involvement, faculty from both of these sites felt some degree of motivation, empowerment, and support from either administration or outside agencies as they began to create their own courses or implement pre-designed online curriculum and teach students.

An administrator from the school mandating faculty involvement in online learning course development commented on the importance within an organization to build a culture trusting of leadership. This administrator further stated any change made within the organization is researched-based and it is important to avoid becoming “mired in status quo if there is a better way.” Efforts have been made to cultivate a group of teachers who want to be in the forefront and want to look at research. In spite of the fact the district’s hybrid programming was mandated, administration felt leadership was distributed among the organization. Even though the department carrying out the mandate had little involvement in the decision to incorporate the hybrid program, the faculty did feel support from administration during the development and implementation of the online curriculum.

***Reactions.*** The implementation of online programming at all three research sites resulted in a wide range of reactions by teachers, students, and parents. The overwhelming reaction identified by research participants was that of teachers about contractual issues, mainly job loss. Because of this, many teachers did not want to get involved with online programming. One participant reported when online teaching is mandated by administration, young teachers are reluctant to object, fearing loss of job.

Job loss was experienced in completely different ways in all three school sites. In one site where teaching online was an optional choice for teachers, a teaching position was eliminated and replaced by an online course offering. In the other optional online teaching site, additional opportunities were created for teachers who wanted to try online teaching. In the site with the hybrid program, additional teaching positions were actually created because of the move to an online option.

There were many faculty who questioned and challenged online programming and its impact on education with concerns such as:

- What about the relationship with students and the need for face-to-face contact?
- It will replace traditional classes.
- Is this best for students?
- Don't really see the need.
- It's never been done this way.
- This isn't normally done.
- This doesn't look like a normal teacher.
- Who will provide teachers training and support?
- Current curriculum was not designed for online teaching.
- How can online courses work with at-risk students?
- Teachers like student interaction, both physical and emotional connection – don't want to lose that.
- Online learning has potential but there are so many questions.

Some displayed excitement, feeling faculty should be learning and growing with this new initiative to maintain jobs. A couple of faculty participants stated faculty reaction

was somewhat dependent on the teacher's point in his/her career. Teachers in the latter part of their careers were uninterested in trying anything new, and teachers in their early years were too busy establishing their careers. The teachers most interested in receiving training and teaching online courses were those teachers in the middle years of their careers. This interest was fostered by educational leaders within their school districts—union people who were respected by other faculty. By using positive peer pressure, they were able to impact reluctant or resistant faculty. These leaders explained the rationale to accept and the motivation to become involved in online teaching. Once online programming was viewed as a supplement or alternative learning option and not a replacement, it was seen as a valuable tool.

According to the participants, student reaction to online options being offered at their school was mostly positive; however, reported student enrollment in online courses was less than 1% at each of the sites. The fear of facing something different and not having the equipment to access the online courses was expressed. This fear was offset by the advantages such as the availability of classes not offered at the student's high school and the scheduling flexibility. Credit recovery students thought it was a learning option allowing for success. Students experiencing school phobia were now able to continue their education.

Interviewees described reactions of parents who expressed concern that students did not understand the course material because the students were not meeting with the teacher each day. Parents who felt online learning was a good way to prepare students for college were reminded by teachers to be prepared for failure also. A parent of an at-risk student at one of the sites expressed the fact that having her son on a computer for a year

taking online courses turned his life around, and he went on to be successful, winning a national technical award after high school.

**Outcomes.** Despite adjustments in basic operations such as class scheduling, teacher assignment, and computer technology access, each of the research sites continue to offer online courses and enroll students. Based on a 40% favorable response to take online courses from a survey given to students, and the success the school experienced with class scheduling, one of the sites is expanding online course offerings by selectively choosing senior level classes and instructors to develop hybrid courses. Teachers at the site offering online courses for credit recovery to at-risk students were able to demonstrate to administration this learning option can be successful with this group of students. The program at this site has expanded to include offering online courses to regular education students. Continuous updates by a core of online teachers who reported how successfully the program was progressing gained the support of school board members. One participant commented he/she has seen improvement in his/her face-to-face teaching as a result of teaching online and claimed courses initially developed for delivery online can be rolled over into a face-to-face course with great success.

**Policies and Procedures.** Each of the sites documented in their district technology plans the importance of increasing online learning opportunities and providing 21<sup>st</sup> century technology skills for higher education and for the workplace. Only one of the school sites however, enrolled students in a required online course. As schools incorporate online programs into existing curricular offerings a number of issues regarding organizational policies and procedures are impacted. Financing, scheduling, infrastructure, contractual, and curricular issues are presented in this section.

***Financial implications.*** All three research sites identified funding as a fundamental issue of concern in the development and delivery of online programs. The site that migrated a face-to-face program to a hybrid program was able to use program budget funds for faculty development of the new programming. The other two sites were able to secure grant money to initially train teachers and also pay teachers for course delivery. When grant funding expired, however, additional revenue needed to be found. One of the sites was greatly impacted by the lack of funding. Low payment for teaching classes (initially paid through their online course provider and not the teachers' school) resulted in minimal interest on the part of teachers to continue teaching online. The other school site, however, resolved the issue of payment to teachers by allocating staff development funds for online course development and teaching. By retaining students through online course who may have dropped out of school otherwise and by offering classes to students outside of the district, enough revenue was generated to pay teachers and maintain jobs.

***Scheduling and enrollment.*** Policies and procedures regarding enrollment and managing course schedules presented new challenges for all three sites. Two of the sites mentioned the importance of guidance counselors assisting students in deciding if enrolling in an online course was best. Participants noted this as a salient factor in the success of the student. This was also an important procedural issue as schools were required to pay course tuition to the content provider even if a student dropped out of a course. The counselor and principal were also seen as instrumental in guiding students through the online coursework. Because online courses do not present a specific timeframe, students enrolled in online courses do not have to physically be in school.

Issues of accountability resulted from this factor, and parents needed to be consulted regarding where the students would be working on coursework. When students chose to work at school, schools needed to provide space, equipment, and supervision for these online students. One of the research sites reported the phenomenon of “out of sight, out of mind” regarding problems students were having getting online coursework completed. The faculty from this site shared that even with multiple electronic reminders to students, the results were unlike daily reminders from teachers when in a face-to-face class. Because this was a hybrid program, additional policy problems arose with missed face-to-face class sessions and how to accommodate make-up class sessions missed.

A scheduling issue regarding online teachers involved the process of establishing office hours. In a traditional high school teachers are present in the building during normal operational hours. With online courses, teachers needed to be creative in scheduling when they would be available for students. An additional process teachers faced was formulating a timeline for students who wanted to drop a course once it had begun. Questions were raised about how a teacher would be paid for their time commitment when a student drops a course.

***Infrastructure.*** As schools provide students the opportunity to take courses online, consideration must also be given to the access students will have to software and hardware required. The large metropolitan high school reported over 90% of their student body had access outside of school to the technology required for online coursework. This was not the case in the other two school sites. These two sites reported some students within their district had no computer and or Internet access outside of school. In order to accommodate this lack of technology, these schools had to provide access to a computer

lab at school, scheduled time, and in some cases provide a laptop for students to take out of school.

***Teacher contractual issues.*** A procedural issue regarding online programming mentioned by every participant interviewed was teachers' contracts. The main concern expressed by teachers was allowing students to take courses online would result in the loss of jobs or a reduction in contract time. In the small rural site this concern became reality when an open teaching position was replaced by an online course option rather than renewing the teaching position. This site also faced an unresolved issue of whether a teacher would be required to supervise online students at school or if that position could be filled by a paraprofessional. Teachers at the mid-size urban school expressed the same fears of job loss; however, their online programming expanded teaching opportunities, kept students within the district, and allowed teachers to work with other districts to save programs and jobs. An administrator at this site attributed this success to the strong union leaders who believed in the value of online programming and worked through contract language to ensure a workable situation.

The large metropolitan site expressed problems with contract issues and their hybrid program such as defining acceptable teacher instructional hours per week, number of times teachers will be in the classroom, number of students online, and assessment time. Additional concerns were expressed between teachers. Teachers who saw students face-to-face each day and were not teaching online courses questioned why other online teachers with no students physically in the classroom were receiving an equal salary.

***Content and curriculum.*** Each of the sites reported concern about the quality of online course curriculum. When students receive online course content from an

unfamiliar provider, each site expressed concern that the rigor and learning required within their face-to-face classes is often lacking in online courses. Participants stated that by being familiar with the online course provider and teachers or by utilizing in-house faculty to teach online courses, appropriate assessments and State curricular standards would be embedded. One participant commented that developing online courses from scratch is very time consuming and teachers are often not given an adequate number of hours to create original online course content. The participant further stated there is a general perception online coursework is easier than traditional face-to-face courses when in fact good online coursework is not.

**Sustainability.** Each of the sites has successfully offered and enrolled students in online course offerings for a minimum of four years. This experience has allowed each site to identify a number of factors necessary to create practical and sustainable models for online programming within their traditional high school. Findings show systemic components of administrative, teacher, and student factors, and financial support significant to success.

**Administrative factors.** The importance of an involved administrative staff was identified as a fundamental factor for successful online programming by all participants. There were differences in how involvement was described however. To counteract the frustrations felt by teachers, participants suggested administration and school board need to be in touch with and understand what online education is all about. This can be accomplished by including teachers in the thought processes and discussion of school policy and procedures regarding online programming. It was suggested teachers can also

help alleviate the frustration level by continually informing the school board about the importance of including online learning options as part of the district vision.

In addition to building the capacity for change and creating a safe environment that embraces risk, there was consensus that administrators who encourage and foster the passion to teach would be able to cultivate new ideas. As administrators promote online programming with a consistent level of enthusiasm and without pushing or mandating teachers to become involved, “people will step out and do something a little bit different.”

A tangible factor identified by participants at each site was the importance of administration providing training for teachers. Training needs to be specific to the development of online course components and also to the pedagogy supporting good online teaching. One participant stressed the importance of “time” afforded by administration. This time factor is not only for the gradual and thoughtful development of online courses but also for the opportunity to work with teachers from other districts and coordinate best practices into delivery of courses. One participant commented that by building on the success of initial programs, the “courage level” increases and the “fear level” decreases.

One participant stated the need for an online programming coordinator. A coordinator is essential to meet with all online teachers to troubleshoot problem areas of online teaching, manage program documentation, and motivate student learners. While acknowledging not every student can be a successful online learner, the coordinator, partnered with the school counselor, can provide careful guidance to students and tracking throughout the process of enrollment and student completion of the coursework

ensuring a greater level of success. Administration, counselors, and teachers who provided continual and frequent communication with students were cited as crucial to student achievement.

***Teacher factors.*** A key factor to online learning success identified by many participants is teachers who are passionate about their content area, have a strong desire to share that passion with students, and are dedicated to the idea of online learning as a good thing. This investment in online teaching cannot be motivated by money or novelty. Contrary to this factor, participants stated if the monetary reward for teaching online was taken seriously and if teachers were respected for the amount of work that goes into developing and delivering online courses, the whole system of online learning would be moving faster. For some teachers online teaching is part-time, generating little income. Paying teachers adequately is seen as reflective of the value in offering online programming at the high school level.

Success with online programming is more likely when respected core groups of teachers committed to online learning influence staff who are resistant or reluctant to the notion of learning online. When teachers do not feel threatened by online teaching and can see the success of colleagues teaching online, they begin to see the value of this learning option and become involved.

Successful online teaching is also fortified by teachers who have adequate technology skills or a background in technology and want to get involved in online programming. A participant commented that younger teachers coming into the profession today are arriving with more technology tools and also more online learning experience. Even though these teachers are busy with establishing their careers, they can be

influential with others in promoting the significance of online programming for high school students.

***Student factors.*** Aspects of student involvement cannot be overlooked when evaluating the success and sustainability of an online program. Foremost is establishing student need. Some students are successfully navigating the online world on their own, but some students are unaware of the online learning options available. High schools should carefully plan an online program with students to determine if it is an educational alternative students desire and can achieve. One site experienced online learning success with gifted and upper level students. Another site acknowledged successful online course completion with students who were considered at-risk and taking online courses for credit recovery. This success was attributed to providing students with a scheduled time during the day, a dedicated well-equipped space, and committed facilitators. Regardless of the students' characteristics, a strong contact person or facilitator along with teachers, friends, and parents who provide guidance and support for students have been identified as critical factors in success. Additionally students need appropriate orientation to and the availability of online course hardware and software. Accessibility to a school technician or help desk was cited as essential by participants for student success. A clientele of students successfully taking online courses for credit recovery, scheduling conflicts, enrichment or any other reason will reflect these opportunities available to other students.

***Financial support.*** Consistent and adequate funding was recognized as vital to online programming surviving and thriving in the high school setting. Good grant writers can secure funding to implement programs, but constant renewal required of these grants does not offer a dependable source of financial support to operate programming. By

establishing online programming as a dedicated budget item, and moving away from the viewpoint of offering it as a budget saver, reliable funding can ensure uninterrupted delivery of online courses. Program budgets need to specifically include provisions for software and hardware needs of students while in the school setting and also while accessing online courses outside of school.

A financial implication regarding how student attendance is reported needs revision at the State level. Currently, Average Daily Membership (ADM) is used to determine payments to districts tying funding to seat time. ADM represents the portion of the year a student is enrolled in the district; it includes time that the student was scheduled to attend school but was absent. State policies and procedures need revision to reflect the anywhere, anytime characteristics of online learning.

### **Chapter Summary**

Data collected from this multi-case study revealed a number of findings that reflected the experiences of traditional high schools during the implementation of online programming into their existing curricular offerings. Motivating factors for implementation include recovery of lost State student aid, control over curricular content, and building flexibility into students' schedules. The impact of this implementation on the organizational policies and procedures resulted in findings both consistent among each case and also unique within each case. Policies regarding student enrollment in courses, student accountability, program funding, and teacher contractual issues require special consideration by administration and faculty as online programming is incorporated into the curricular offerings. Findings emerging from the data also provided factors necessary to create sustainable models for successful online programs.

Administrators who provide support for online programming with consistent funding, teaching training, and time for program development will experience successful and sustainable programs. Another key factor to online learning success is teachers who are committed to teaching online, see the value in this educational innovation, and are willing to share the benefits and advantages of online teaching and learning.

The following chapter will provide a discussion of the findings within the context of relevant literature. Literature on systems change, educational policy, and sustainability will be considered within analytic categories drawn from this study's research questions.

## **Chapter Five: Discussion and Conclusions**

The purpose of this multi-case study was to explore with a sample group of three traditional high schools their experience of adopting and implementing online programming into existing curricular offerings and the impact on current organizational policies and procedures. By investigating these processes, factors that create practical and sustainable models for successful online learning programs in traditional high schools were generated. These models can serve as valuable guides for future school districts planning to incorporate online learning programming into their system.

The first part of this chapter is organized by analytic categories directly aligned with each of the study's research questions. The categories are:

1. The implementation of online programming within traditional high schools.
2. Impact on organizational policies and procedures with implementation of online learning programs.
3. Factors necessary to create sustainable online programming.

A discussion of the analytic categories takes into consideration the literature on systems change, educational policy, and sustainability. It is intended to augment the understanding of the impact online programming implementation has on traditional high schools and factors necessary for the creation of sustainable models. This chapter will also include educational implications of this study, recommendations for future research and concludes with a summary.

### **The Implementation of Online Programming within Traditional High Schools**

The first research question was designed to help understand the process of how traditional high schools implemented online programming into existing curricular

offerings. Participants indicated an awareness of students' natural technology skills, love of computers, and acknowledged learning was occurring beyond the school walls every day. Combining these traits with online learning seemed a natural fit for students. This is supported by Project Tomorrow (2009) which states students today have ubiquitous access to digital technology, embracing its use more than any recent generation past. Project Tomorrow further reports the ability to access information outside of the traditional educational setting has led to widespread student interest in online learning. Each of the research sites within this study however stated there was very little student push for online courses, instead identifying administration and faculty as the driving forces in online implementation. Lack of student demand aside, the significance of administration promoting online learning was whether it was an optional choice or mandated for faculty.

Administrators who played the roles of investigator, motivator, or supporter were able to learn from other districts further along in the process of online learning implementation. This provided a foundation to build a culture within their own school that appreciated online learning. This was accomplished by allowing a group of faculty within the school that were interested and committed to this new educational initiative to gradually influence hesitant faculty to become involved. This capacity to work in teams is supported by Smith's (2008) description of building effective teams within a school organization and team learning. Team learning in addition to personal mastery, shared vision, and systems thinking are crucial to facilitating substantial change (Senge, 2006). In the case where online programming was mandated by administration to ease a class scheduling issue, implementation was not enthusiastically embraced. O'Hanlon (2009)

stresses the importance of how technology is introduced into the academic environment. If teachers are forced into using technology without being shown the value within the classroom, they will be resistant. On the other hand, administrators who did not involve faculty in the decision to implement online programming supported the decision by stating any change made within their organization is researched-based and if a culture is established that trusts leadership, new innovations can be introduced to avoid becoming “mired in the status quo.”

Participants frequently mentioned administrators were prompted to offer online courses in order to maintain or recover State per pupil aid. Regarding schools and change, Ogden and Germinaro (1995) and Smith (2008) caution however, the process and conversations around change need to be about students and focused on teaching and learning. When educational initiatives are fiscally-centered and not student-centered or education-centered, the focus is diverted away from teaching and learning.

Data from the 2008 Speak Up survey show principals reporting relatively few teachers are willing to teach an online class (Project Tomorrow, 2009). Some issues teachers have relating to online learning are the concern of course quality, course development, funding, and the need for teacher training (Picciano & Seaman, 2009). These same issues were mentioned by participants who also identified a number of additional questions and challenges expressed by teachers. These issues included the need for face-to-face contact with students, the concern that online learning is not normally done, and the question of whether this new method of learning is best for students. Providing a unique perspective into faculty reactions, participants stated the point of a teacher’s career will often determine attitudes toward involvement in online teaching.

Teachers in the middle years of their career seemed most interested in receiving training and teaching online. These teachers had careers that were established and were willing to try anything new. In relation to comments Reich (2000) makes about the risk involved with change, these teachers were willing to try new ideas, new perspectives, and new ways of thinking about education and students to fit in today's ever-changing world.

Throughout the process of online implementation, each site experienced some degree of "growing pains." Change has traditionally been thought of as a rational, linear, and neat process, however, this does not take into consideration the human factor of those involved. Reactions of those involved are a significant variable resulting in a process that does not always run smoothly (Smith, 2008). Tyack and Cuban (1995) note when school reformers adopt a rational approach to reform and expect improvement, they discover the process is not simple.

Innovations in education never start from scratch. Because each of the sites implemented online programming on a small scale to co-exist with traditional face-to-face courses within their respective schools, participants could make adjustments and changes as needed with minimal disruption. The educational leaders at the research sites provided continuous updates about how successfully the online programming was progressing which helped to gain the support of school board members. When system leaders are able to communicate the overall purpose and plan, they will be effective with the members of their organization (Fullan, 2005). Effective school leadership combined with a systems thinking approach helped to grow the interest, enthusiasm, and success of online programming at these sites.

## **Impact on Organizational Policies and Procedures with Implementation of Online Learning Programs**

Designed from an educational policy perspective, the second research question investigated how organizational policies and procedures within the research sites were impacted with the implementation of online programming. Historically there has been a disconnect between educational policy and practice (Tyack & Cuban, 1995; Elmore, 2004). Policies involving course quality and content standards, funding, attendance, equitable access, and locus of control need attention (Watson & Gemin, 2009). Reflecting Elmore's (2004) statement that successful reform needs to happen from the inside out, each of these sites mirrored this by adjusting policies and procedures to accommodate online learning programs within the existing organizational structure.

Online course delivery requires substantial cost in order to provide a CMS, support staff, and course design (Watson et al., 2009). Faced with the uncertainty of operating online programming through grant funding, participants provided suggestions of how consistent funding can be accomplished. By establishing online programming as a dedicated budget item, online programming at each of the sites was provided with consistent funding and allowed offerings to students on a continuous basis. This supports Trujillo et al. (2007) who state online education should not be viewed as a separate system of public education but rather a collaborative effort within the public education system.

Scheduling and enrollment procedures presented challenges for each site, however they all were able to integrate effective management practices to help ensure success for students and online programs. By providing counselors to assist students in

the decision-making process of enrollment, and pairing the counselor with the principal and other support staff to provide ongoing guidance to students during coursework, success was more evident. Schools cannot put students online and then forget about them. The site offering the hybrid programming established school policy to address student make-up for face-to-face sessions missed. These face-to-face sessions were considered a priority over other courses and were made up in a timely manner.

Attendance and accountability at the three research sites were additional issues the administrators and teachers needed to address. They reported unclear guidelines and policies made it difficult when dealing with students enrolled in online learning courses. The NETP (U.S. Department of Education, 2010, n.p.) states our current education system uses time-based or seat-time measurements of educational attainment. These measurements, created in the 1800's, do not reflect the anytime, anywhere characteristics of online learning, necessitating the creation of e-learning policy (NASBE, 2009). This need was voiced in different ways by the personnel at each school system interviewed.

Likewise, online course content and curriculum rigor were frequently expressed as concerns by participants. The development of e-learning policy can assure advanced coursework NASBE (2009) and provide modern frameworks for curriculum and instruction.

In addition to policy challenges, providing the technology infrastructure and student accessibility were procedural issues necessary for schools to address. Two of the sites stated special accommodations needed to be provided to help ensure success of their online programming. Putting into place dedicated space, equipment, and time for students to access coursework was accomplished without additional State revenue. These school

and classroom accommodations can inform policymakers about the design and implementation of effective policy (Elmore, 2004).

The most significant policy and procedural issue stated by every participant was teacher contracts. There are minimal resources providing guidance for how school districts manage online learning and contractual issues. Concerns were expressed by teachers about jobs being replaced by online courses, supervision of online students, teacher pay for online course development and teaching, and accountability for instructional hours. Each site reported intensive work on these issues and agreement in contract language was necessary to ensure a workable online learning option. One site noted significant success with e-learning contractual language by engaging teacher union leaders who were also strong advocates for online programming.

Participants mentioned efforts need to be made not merely to add on but to incorporate online programming into existing curricular offerings. In order to accomplish this, participants suggested current school policies and procedures needed to be seriously considered and modified in order to blend online courses with face-to-face courses. Fink (2000) identifies this as re-culturing not just restructuring policies. This results in the development of an initiative without compromising the development of other programs in the surrounding environment.

### **Factors Necessary to Create Sustainable Online Programming**

Identification of factors necessary to create practical and sustainable models for successful online programming was the focus of the third research question. From the experience of offering online programming and enrolling students in these courses, each research site was able to recognize factors that made their program successful and

sustainable. Fullan (2005) maintains practicing systems-thinking at all levels is the key to sustainability. This was voiced by participants as they identified specific factors evident within their educational systems that help to maintain their online programming.

As systems encounter large-scale reform, the ability to draw on the capacities for individual and organizational learning is a key priority (Morgan, 2006) and is linked to an administration committed to capacity-building. Participants from each of the sites recognized an involved administration as essential to creating sustainable online programming within the high school. The participants further described how the involvement of administration should reflect encouragement, enthusiasm, and support without pushing or mandating. By involving teachers in the discussion of school policy and procedures regarding online programming, participants felt the fears and frustrations of teachers could be alleviated and progress toward a common goal could be attained. Fullan (2005) supports this in his discussion regarding the balance of vertical relationships within a system which involve the aspects of support, resources, and accountability. Participants stressed the importance of time, training, and opportunities to work with teachers from other districts in order to design and develop substantial online programming. As administration provides the necessary resources and opportunities for learning online teaching and appropriate pedagogy, Elmore's (2004) principle of reciprocity is apparent when teachers take responsibility for designing, developing, and delivering quality online programs.

Success was reported by one site when a core group of respected teachers, supported by administration and committed to implementing online learning, positively influenced other faculty. This core group of teachers continually informed school board

members about the importance and success of the ongoing online programming, an important factor in gaining the support of the board. Collaboration and communication between administration, faculty, and school board provided a safe environment that embraced risk and maintained innovation. Fullan (2005) describes the importance of involving leadership at all levels critical to a system if it is to be mobilized toward the direction of sustainability.

As schools plan for sustainability in online programming, the needs of students cannot be overlooked. Participants expressed the importance of involving students in planning online learning options to help provide the best fit for the needs of the students. For some students at each of the sites, online learning courses provided scheduling flexibility, advanced level classes, and access to courses not offered at their own high school. Other students were taking online courses for credit recovery. For another group of students who had dropped out of school or were not enrolled in school, taking an online course was their only option to obtain credits. Christenson's et al. (2008) concept of a disruptive innovation is evident here. As online learning is established as a viable learning option for those whose learning option is limited, students who were non-consumers of education now have the opportunity for education delivery via online courses.

Additional elements of successful and practical models identified by participants are funding and financial support. Participants strongly stated adequate and consistent funding is vital to the continuing success of their online programming. Development of online programming needs financial support if programs are to flourish (Project Ideal, n.d.). Financial support for teacher training, development, and delivery of online courses,

accessibility to a school help desk for students, and student and teacher access to necessary hardware and software both in and out of the school setting were identified as essential needs for successful and sustainable online programming.

### **Educational Implications**

A system is a collection of parts functioning together as a whole and system thinkers are concerned with how the whole behaves. Organizations are systems encompassing a variety of people with different personalities and agendas, interacting for a common goal. Movement toward a goal cannot exist without attention to the culture and systemic nature of the organization (Ollhoff & Walcheski, 2002). Systems thinking within school organizations focuses on the process of building collaborative relationships and structures for change (Senge, 2006). As schools consider the implementation of online programming, teachers, administrators, and policy makers must be aware of the impact this innovation will have on the whole educational system.

Teachers will need to step beyond their comfort zone, be less concerned with how online learning will impact their teaching, and be more conscious of how online learning will benefit student learning. Administrators' roles will be to build a culture within their organization that appreciates the online learning initiative and to involve teachers in program design and development. Policymakers must reconsider legislation originally designed for traditional face-to-face teaching and learning and revisit existing legislation in light of the new virtual classroom.

Adequate funding is a critical element in the implementation and sustainability of online programming. As school districts venture out on their own to provide online learning opportunities for students, policymakers need to rethink how financial support

will be distributed to include this innovation in learning. As policymakers encourage school systems to prepare students with skills to survive and thrive in the 21<sup>st</sup> century, adequate funding needs to be provided at the local level. Funding needs to be available not only for the technology infrastructure in schools and communities but also for sufficient professional development for teachers who will need special training in order to meet the demands of this new method of teaching and learning. Finally, policymakers must move beyond measuring academic achievement based on seat-time. With online learning the structured classroom is replaced by anytime, anyplace, and any pace learning.

Administrators who want to adopt and implement online programming will experience a greater level of success with purposeful support and encouragement to teachers who are interested in online teaching and who are also leaders among their peers. These educational leaders can be highly influential with other teachers by providing the assurance online programming can open up more educational opportunities for teachers and students. Once teachers are committed to exploring online teaching, administrators are obligated to supply the time, training, and resources needed for course development and delivery.

Finally, teachers will need to center their thinking on how online programming can benefit students. Objecting to this new teaching and learning method because it is not familiar or not normally done this way is allowing the decision to become teacher-centered rather than student-centered. Just as online learning is not the best choice for every student, online teaching is not the best fit for every teacher. Being open-minded

about this educational innovation can lead to unique teaching opportunities resulting in personal and organizational growth.

Systems thinking within an educational organization involves several entities working together toward universal goals. As traditional high schools implement a change from face-to-face teaching and learning to the virtual environment, collaboration among policymakers, administrators, and teachers will help ensure a more successful transition. Online education should not be viewed as a separate system of education but as a viable option within an educational organization.

### **Recommendations for Future Research**

Throughout this study the focus has been on the process of implementing online programming into traditional high school curricular offerings and the subsequent impact on organizational policies and procedures. The factors identified which are necessary to create practical and sustainable models for successful online programs are based on lived experiences of the participants. These models can help guide and inform policymakers, administrators, and teachers as they navigate the world of e-learning. Additional insight can also be gathered from traditional high schools that have been unsuccessful in sustaining online programming. Identifying the factors present in unsuccessful programs can be valuable to a high school planning new online programming. A significant contribution to the discussion of online learning would be from the student viewpoint. Online learning possesses great potential to individualize, differentiate, and personalize instruction. From a student perspective, online learning has the potential to create personal learning environments. Valuable research could be conducted in exploring how these new learning environments impact student learning. Finally, additional research can

explore guidelines used to counsel students in choosing online programming. As more students successfully complete online courses, factors regarding their success can be identified and provide a strategy useful to other students.

## **Summary**

The ubiquitous presence of computer technology in education today has resulted in a multitude of teaching and learning options. One of the most recent is online learning. Students are interested in this new learning option for the schedule flexibility, availability of advanced courses, and credit recovery opportunities it provides. As student interest spreads, school systems are motivated to expand their curricular offerings to include e-learning. As newly implemented programs draw on the expertise of early adopters, factors ensuring success and sustainability of online learning are valuable and worth exploring. Traditional high schools having successfully implemented online programming identify the importance of building a school culture that appreciates the online learning initiative. With adequate support from administration, motivation from teachers committed to online learning, staff development focusing on virtual learning, and consistent funding for program sustainability, online programming can be successful within the traditional high school setting.

## References

- Alliance for Excellent Education. (2010, February). *The online learning imperative: A solution to three looming crises in education*. Washington, DC: Wise, B.
- Ash, K. (2010). *Lack of sustainable funding: A challenge for online ed* (E-Learning Special Report 2010). Retrieved from Education Week website:  
[http://www.edweek.org/media/educationweek\\_e-learning\\_2010\\_specialreport.pdf](http://www.edweek.org/media/educationweek_e-learning_2010_specialreport.pdf)
- Babbie, E. (2007). *The practice of social research*. Belmont, CA: Thomson Wadsworth.
- Bereiter, C. (2002). *Education and mind in the knowledge age*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Blackboard & Project Tomorrow. (2008). *Learning in the 21<sup>st</sup> century: A national report of online learning*. Retrieved from  
<http://www.blackboard.com/inpractice/k12/onlinelearningreport.htm>
- Blakkie, N. (2000). *Designing social research*. Cambridge, MA: Polity Press.
- Bloomberg, L., & Volpe, M. (2008). *Completing your qualitative dissertation: A roadmap from beginning to end*. Thousand Oaks, CA: Sage Publications.
- Brown, M., Anderson, B., & Murray, F. (2007). *E-learning policy issues: Global trends, themes, and tensions*. Paper presented at the meeting of Australian Society for Computers in Learning in Tertiary Education , Singapore.
- Cavalluzzo, L. ( 2004, July). Organizational models for online education: District, state, or charter school? Retrieved from CNA Analysis and Solutions website:  
<http://can.org/centers/education/selected-studies>

- Cavanaugh, C. (2009). *Getting students more learning time online*. Retrieved from Center for American Progress website:  
<http://www.americanprogress.org/issues/2009/05/pdf/distancelearning.pdf>
- Cavanaugh, C., & Blomeyer, R. (2007). *What works in K-12 online learning*. Eugene, OR: International Society for Technology Education.
- Cavanaugh, C., Barbour, M., & Clark, T. (2009). Research and practice in K-12 online learning: A review of open access literature. *International Review of Research in Open and Distance Learning, 10*(1). Retrieved from <http://www.irrodl.org/index.php/irrodl/article/viewArticle/607/1182>
- Christenson, C., & Horn, M. (2008, Summer). How do we transform our schools?. *Education Next, 8*(3). Retrieved from <http://educationnext.org/how-do-we-transform-our-schools>
- Christenson, C., Horn, M., & Johnson, C. (2008). *Disrupting class: How disruptive innovation will change the way the world learns*. New York: McGraw-Hill.
- Creswell, J. (2007). *Qualitative inquiry and research design*. Thousand Oaks, CA: Sage Publications, Inc.
- Daniel, J. (1997). Why universities need technology strategies. *Journal of Change 29*, (4) 10-18.
- Davis, M. (2010). *Schools factoring e-courses into the daily learning mix* (E-Learning Special Report 2010). Retrieved from Education Week website:  
[http://www.edweek.org/media/educationweek\\_e-learning\\_2010\\_specialreport.pdf](http://www.edweek.org/media/educationweek_e-learning_2010_specialreport.pdf)
- Denzin, N. K. (2001). *Interpretive interactionism*. Newbury Park, CA: Sage.
- Dewey, J. (1900). *The school and society*. Chicago: University of Chicago Press.

- Dillon, S. (2010, February 18). High schools to offer plan to graduate 2 years early. *The New York Times*. Retrieved from <http://www.nytimes.com/2010/02/18/education/18educ.html>
- Ellsworth, E. (1989). Why doesn't this feel empowering? Working through the repressive myths of critical pedagogy. *Harvard Educational Review*, 59(3), 297-324.
- Elmore, R. (2004). *School reform from the inside out*. Cambridge, MA: Harvard Education Press.
- Ferdig, R. (2006). Assess technologies for teaching and learning: Understanding the importance of technological pedagogical content knowledge. *British Journal of Educational Technology*, 37(5) 749-760. doi:10.1111/j.1467-8535.2006.00559.x
- Freire, P. (1972). *Pedagogy of the Oppressed*. New York: Seabury Press.
- Fullan, M. (2005). *Leadership and sustainability*. Thousand Oaks, CA: Sage Publications, Inc.
- Gladwell, M. (2000). *The tipping point*. New York: Back Bay Books/Little, Brown and Company.
- Glesne, C., & Peshkin, A. (1992). *Becoming qualitative researchers: An introduction*. White Plains, NY: Longman.
- Greaves Group. (2006). *America's Digital Schools 2006: A Five-Year Forecast*. Retrieved from <http://www.ads2006.org/ads2006/pdf/ADS2006KF.pdf>
- Green, A., Little, A., Kamat, S., Oketch, M., & Vickers, E. (2007). *Education and development in a global era: Strategies for successful globalization*. Retrieved from Department for International Development website:

- <http://www.research4development.info/PDF/Outputs/PolicyStrategy/ResearchingtheIssuesNo69.pdf>
- Gustke, C. (2010). *Virtual ed. enrollment caps facing greater scrutiny.* (E-Learning Special Report 2010). Retrieved from Education Week website:  
[http://www.edweek.org/media/educationweek\\_e-learning\\_2010\\_specialreport.pdf](http://www.edweek.org/media/educationweek_e-learning_2010_specialreport.pdf)
- Gutek, G. (2004). *Philosophical and ideological voices in education.* Boston: Pearson.
- Hargreaves, A., Earl, L., Moore, S., & Manning, S. (2001). *Learning to change: Teaching beyond subjects and standards.* San Francisco: Jossey-Bass.
- Hargreaves, A., & Fink, D. (2000). The three dimensions of reform. *Educational Leadership*, 57(7), 30-34.
- Helton, G. (n.d.). *Curriculum development in 20<sup>th</sup> century United States.* Retrieved from Kent State University website:  
<http://www.personal.kent.edu/~whelton/cd007.html>
- Heppner, P., & Heppner, M. (2004). *Writing and publishing your thesis, dissertation and research.* Belmont, CA: Brooks/Cole-Thomson Learning.
- Hess, F., & Petrelli, M. (2007). *No child left behind.* New York: Peter Lang.
- Hirsch, E. D. (1996). *The schools we need: And why we don't have them.* New York: Doubleday.
- International Association for K-12 Online Learning. (2009, July). Every student's right to online learning opportunity. Retrieved from iNACOL website:  
[http://www.inacol.org/research/docs/NACOL\\_AdvocacyStudentsRights-lr.pdf](http://www.inacol.org/research/docs/NACOL_AdvocacyStudentsRights-lr.pdf)
- Johnson, T., & Reed, R. (2008). *Philosophical documents in education.* Boston: Pearson.

- Koszalka, T., & Ganesan, R. (2004). Designing online courses: A taxonomy to guide strategic use of management systems (CMS) in distance education. *Distance Education*, 25(2), 243-256.
- Lincoln, Y.S., & Guba, E.G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- Mariasingam, M., & Hanna, D. (2006, Fall). Benchmarking quality in online degree programs: Status and prospects. *Online Journal of Distance Learning Administration*, 9(3). Retrieved from  
<http://www.westga.edu/~distance/ojdla/fall93/mariasingam93.htm>
- McCrea, B. (2009, December). 5 higher ed tech trends to watch in 2010. *Campus Technology*. Retrieved from [http://campustechology.com/articles/2009/12/09/5-higher-ed-tech-trends-to-watch-in-2010.aspx?sc\\_lang=en](http://campustechology.com/articles/2009/12/09/5-higher-ed-tech-trends-to-watch-in-2010.aspx?sc_lang=en)
- Metri Group. (2006). *Technology in schools: What the research says*. Retrieved from  
<http://www.cisco.com/web/strategy/docs/education/TechnologyinSchoolsReport.pdf>
- Michigan Department of Education. (2008). *Michigan Merit Curriculum Guidelines: Online Experience*. Retrieved from  
[http://www.michigan.gov/documents/mde/Online10.06\\_final\\_175750\\_7.pdf](http://www.michigan.gov/documents/mde/Online10.06_final_175750_7.pdf)
- Minnesota Department of Education. (2007). *2008-11 Technology Planning Guide for Minnesota School Districts, Charter Schools, Nonpublic Schools and Public Libraries*. Retrieved from  
<http://www2.ed.gov/programs/edtech/techstateplan.html#minnesota>

Modell, J., & Alexander, J. (1997). High school in transition: Community, school, and peer group in Abilene, Kansas, 1939. *History of Education Quarterly*, 37 (Spring), 1-24.

Morgan, G. (2006). *Images of organization*. Thousand Oaks, CA: Sage Publications.

Nagel, D. (2009, October). Most college students to take classes online by 2014. *Campus Technology*. Retrieved from  
[http://campustechnology.com/articles/2009/10/28/most-college-students-to-take-classes-online-by-2014.aspx?sc\\_lang=en](http://campustechnology.com/articles/2009/10/28/most-college-students-to-take-classes-online-by-2014.aspx?sc_lang=en)

Naisbett, J. (1982). *Megatrends*. New York: Warner Books.

National Center for Educational Statistics. (2009). *Dropout and completion rates in the United States: 2007*. Retrieved from  
<http://nces.ed.gov/pubs2009/dropout07/index.asp>

National Association of Charter School Authorizers. (2006, August). *A primer on virtual charter schools: Mapping the electronic frontier*. Chicago: Vanourek, G.

National Association of State Boards of Education. (2009). *2009 Public Policy Positions*. Retrieved from <http://nasbe.org/index.php/file-repository/func-startdown/789/>

Newberry, B. (2001, October). *Raising student social presence in online classes*. Paper presented at World Conference of the WWW and Internet, Orlando, FL.

North American Council for Online Learning. (n.d.). *Top ten myths about virtual schools*. Retrieved from International North American Council for Online Learning website:

<http://www.inacol.org/research/docs/Ten%20Myths%20About%20Virtual%20Schools.pdf>

North Central Regional Educational Laboratory. (2002). *E-learning policy implications for K-12 educators and decision makers*. Retrieve from North Central Regional Educational Laboratory website:

<http://www.ncrel.org/policy/pubs/html/pivol11/apr2002d.htm>

Ogden, E. H., & Germinaro, V. (1995). *The nation's best schools: Blueprint for excellence* (Vol. 2) Lancaster, PA: Technomic.

O'Hanlon, C. (2009). Resistance is futile. *THE Journal*. Retrieved from  
[http://thejournal.com/articles/2009/03/01/resistance-is-futile.aspx?sc\\_lang=en](http://thejournal.com/articles/2009/03/01/resistance-is-futile.aspx?sc_lang=en)

Ollhoff, J., & Walcheski, M. (2002). *Stepping in wholes*. Eden Prairie, MN: Sparrow Media Group, Inc.

Pape, L. (2005, July). High school on the web: What you need to know about offering online courses. *American School Board Journal*, 12-16. Retrieved from  
<http://www.asbj.com>

Perkins, D. (2003). *King Arthur's roundtable*. New York: Wiley.

Philips, D.C. (2008). Philosophy of education. *Stanford encyclopedia of philosophy*. Retrieved from <http://plato.stanford.edu/entries/education-philosophy>

Picciano, A. (2006, March). Online learning: Implications for higher education pedagogy and policy. *Journal of Thought*. Retrieved from  
<http://www.accessmylibrary.com/article-1G1-142788514/online-learning-implications-high.html>

Picciano, A., & Seamon, J. (2009). *K-12 online learning: A follow-up of the survey of U.S. school district administrators*. Retrieved from Sloan Consortium website:  
<http://www.sloan-c.org/publications/survey/k-12online2008>

Project Ideal. (n.d.) Key elements of successful distance education programs. Retrieved from Project IDEAL website:

[http://www.projectideal.org/distance\\_in\\_action/action\\_3.html](http://www.projectideal.org/distance_in_action/action_3.html)

Project Tomorrow. (2009). *Selected national findings: Speak up 2008 for students, teachers, parents and administrators*. Retrieved from Project Tomorrow website:  
[http://www.tomorrow.org/docs/SU08\\_selected%20national\\_findings\\_complete.pdf](http://www.tomorrow.org/docs/SU08_selected%20national_findings_complete.pdf)

Quillen, I. (2010). *E-learning delivery debated* (E-Learning Special Report 2010).

Retrieved from Education Week website:

[http://www.edweek.org/media/educationweek\\_e-learning\\_2010\\_specialreport.pdf](http://www.edweek.org/media/educationweek_e-learning_2010_specialreport.pdf)

Reich, R.B. (2000). Your job is change. *Fast Company*, 39, 150.

Senge, P. (2006). *The fifth discipline*. New York: Doubleday.

Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. New York: Teachers College Press.

Shantz, D., & Rideout, G. (2003, Fall). Education versus schooling: Seeking new paradigms for a new century. *Education*. Retrieved from  
[http://findarticles.com/p/articles/mi\\_qa3673/is\\_1\\_124/ai\\_n29032710/?tag=content;coll1](http://findarticles.com/p/articles/mi_qa3673/is_1_124/ai_n29032710/?tag=content;coll1)

Shelley, G., Cashman, T., Gunter, A., & Gunter, R. (2006). *Integrating technology and digital media in the classroom*. Boston: Thomson.

Simonson, M., Smaldino, S., Albright, M., & Zvacek, S. (2003). *Teaching and learning at a distance*. Upper Saddle, New York: Merrill-Prentice Hall.

Smith, L. (2008). *Schools that change*. Thousand Oaks, CA: Corwin Press.

- Solomon, G., & Schrum, L. (2007). *Web 2.0: New tools, new school*. Eugene, OR: International Society for Technology in Education.
- Stoll, L. (n.d.) Enhancing internal capacity: Leadership for learning. Retrieved from National College for School Leadership website: <http://www.ncsl.org.uk/media-604-df-enhancing-internal-capacity.pdf>
- Tellis, W. (1997). Introduction to case study. *The Qualitative Report*, 3(2). Retrieved from <http://www.nova.edu/ssss/QR/QR3-2/tellis1.html>
- Tiene, T., & Ingram, A. (2001). *Exploring current issues in educational technology*. Boston: McGraw Hill.
- Toffler, A. (1980). *The third wave*. New York: Bantam Books.
- Trochim, W. (2006). *The research methods knowledge base*. Retrieved from <http://www.socialresearchmethods.net/kb>
- Trujillo, L., Griffith, K., Snyder, T., & Urchel, J. (2007). *Trujillo Commission on Online Education*. Retrieved from Donnell-Kay Foundation website: <http://www.dkfoundation.org/PDF/TrujilloCommissionOnlineEducationFinalReport-2-15-2007.pdf>
- Tyack, D., & Cuban, L. (1995). *Tinkering toward utopia*. Cambridge, MA: Harvard University Press.
- U.S. Department of Education. (2010). *Transforming American education: Learning powered by technology*. Washington, DC: Office of Educational Technology of the Department of Education.

Watson, J. (2007, April). *A national primer on k-12 online learning*. Retrieved from International North American Council for Online Learning website:  
[http://www.inacol.org/research/docs/national\\_report.pdf](http://www.inacol.org/research/docs/national_report.pdf)

Watson, J., & Gemin, B. (2009, July). *Policy and funding frameworks for online learning*. Retrieved from International North American Council for Online Learning website:  
[http://www.inacol.org/research/promisingpractices/NACOL\\_PP-FundPolicy-lr.pdf](http://www.inacol.org/research/promisingpractices/NACOL_PP-FundPolicy-lr.pdf)

Watson, J., Gemin, B., & Coffey, M. (2010) *A parent's guide to choosing the right online program*. Retrieved from International North American Council for Online Learning website:  
[http://www.inacol.org/research/promisingpractices/docs/NACOL\\_PP-ParentsGuide-lr.pdf](http://www.inacol.org/research/promisingpractices/docs/NACOL_PP-ParentsGuide-lr.pdf)

Watson, J., Gemin, B., Ryan, J., & Wicks, M. (2009). *Keeping pace with K-12 online learning*. Retrieved from Keeping Pace website:  
<http://www.kpk12.com/downloads/KeepingPace09-fullreport.pdf>

Zimbalist, R.A. (2005). *The human factor in change*. Lanham, MA: Scarecrow Education.

## Appendix A: Institutional Review Board Approval

University of Minnesota

**DULUTH**

OCT 18 2010

Thesis/Project Proposal

Title

Doctoral Degree

**The Graduate School**

I.D. No. 1037144

Last Name <u>Luehr</u>	First <u>Dana</u>	Middle or Former <u>Darice</u>
Street <u>3955 County Road 13</u>		
City, State, Zip <u>Barnum, MN 55707</u>		

Degree Sought

EDD

Major

Teaching + Learning

Track

Minor (if declared)

SP

E-Mail Address

Doctoral Thesis/Project (working) Title:

Organizational Perspective of Online Teaching and Learning Implementation in Traditional High Schools

Joyce Strand

Adviser Name (please print)

Joyce Strand

Signature

10/14/10

Date

Susan Damme

Co-Adviser Name, if applicable (please print)

Susan Damme

Signature

10/14/10

Date

Joyce Strand

Director of Graduate Studies Name (please print)

Joyce Strand

Signature

10/14/10

Date

Space Below For Graduate School Use Only

Final Oral Examining Committee

Rev Chr

F. Guldbrandsen

J. Strand

S. Damme

J. Stevenson

L. Deneen

R. Faunce

10/21/10

Date

Graduate School Approval

GS 63h - 1/07

## **Appendix B: Research Request Letter to Superintendents**

Home Address  
City, State Zip  
Date

Superintendent's Name  
Name of High School  
Address  
City, State Zip

Dear Superintendent,

My name is Dana Luehr and I am a doctoral candidate in the Department of Education at the University of Minnesota-Duluth. I am working on a research study that is investigating the systems impact of online learning programs as these programs are implemented in traditional high schools. I would also like to identify in this study the factors needed by secondary schools to achieve success and sustainability with online teaching and learning.

I am in the initial phase of my research project and in the process of identifying high schools that will serve as my case studies. I am interested in using your high school as one of my research sites. My study would consist of interviewing a total of two or three administrators, faculty or staff who were involved in the development of your high school's online programming.

I would like your consideration for your high school to be a part of my research study. If you agree to be part of this research study, I will need to obtain documentation of approval from your district Institutional Review Board. If your district does not have an Institutional Review Board, documentation of approval from you or your high school principal on school letterhead will be sufficient.

I would be happy to answer any questions you may have regarding my study. You may contact me at: (email address), (cell phone number/daytime) or (home phone/evening).

Sincerely,

Dana D. Luehr

## **Appendix C: Phone Script: Recruitment and Introduction of Study to Subjects**

Hello, My name is Dana Luehr and I am a doctoral candidate in the Department of Education at the University of Minnesota-Duluth. I am working on a research study that is investigating online learning programs and how these programs were implemented into traditional high schools. I would also like to identify in this study the factors needed by secondary schools to achieve success and sustainability with online teaching and learning.

I am in the process of identifying subjects that will serve as participants in my research study. Your high school administration has agreed to be a case study in my research project. I am contacting you because your school administrator has given me names, including yours, of people who played significant roles in the development and/or implementation of online learning programming in your school. Would you consider being part of my study?

If you agree to be a participant in this study, I will ask you to complete a one-page survey questionnaire to provide me with demographic information about yourself and information regarding your educational computing experience. This will be followed by a one-on-one interview conducted by myself. The interview will consist of about eight questions regarding the process of development and implementation of online learning programming in your school and your involvement in the process .The interview will be conducted at your convenience and will be approximately 60-90 minutes in duration. You will receive the interview questions a couple days before the scheduled interview. The interview will be conducted face-to-face. A follow-up phone conversation may be necessary.

Do you have any questions regarding this study? Just to repeat what is expected of you as a participant, I am asking that you complete a one-page survey questionnaire to provide me with demographic information and participate in a personal interview. Just so that I'm sure you understand what is expected of you here, would you please explain to me what you think I'm going to ask you to do? Please take your time to consider this request and contact me by email regarding your decision to participate. My email is: (email address)

## **Appendix D: Consent Form**

### **CONSENT FORM**

Organizational Perspective on Online Programming Implementation

In Three Traditional High Schools

You are invited to be in a research study of how high schools implemented online learning programming and the resulting organizational impact. You were selected as a possible participant because you were identified by the administration of your school district for having an integral part in the implementation of online learning programming in your school. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by: Dana D. Luehr, Department of Education, University of Minnesota-Duluth

#### **Background Information**

The purpose of this study is: to identify the systemic changes experienced as traditional high schools implement online learning programs and the impact the educational option of online learning has on organizational policies and procedures.

#### **Procedures**

If you agree to be in this study, I would ask you to do the following things:  
Complete a one-page survey questionnaire to provide the principal investigator demographic information about yourself. You will also participate in a private interview with the principal investigator. The interview will be recorded using a digital audio recorder and will consist of approximately eight questions. The interview will be approximately one hour in length.

This research study is to be submitted in partial fulfillment of requirements for the degree of Doctor of Education at the University of Minnesota-Duluth. The results of this study will be published as a dissertation. In addition, information may be used for educational purposes in professional presentations and/or educational publications.

#### **Risks and Benefits of being in the Study**

There is a minimal chance of risk in this study, physical, psychological or emotional. The probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life. Participants

may feel some discomfort when recalling the process of online programming implementation if the experience was not positive.

The benefits to participation are that research finding could provide valuable guidelines for high schools as they initiate the process of online programming in their own high schools. There is no direct benefit to the subjects for participating in the research study.

### **Compensation**

There is no financial remuneration for your participation in this study.

### **Confidentiality**

The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely and only I will have access to the records. Digital audio recordings will only be available to the transcriber and will be used for educational purposes only. The Participant may request the original digital audio recording which will be delivered upon completion of the research project. Recordings not requested will be destroyed upon completion of the research project.

### **Voluntary Nature of the Study:**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Minnesota-Duluth. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

### **Contacts and Questions:**

The researcher conducting this study is Dana D. Luehr. You may ask the researcher any questions you have before signing this form. If you have questions later, **you are encouraged** to contact the researcher at (home phone) or by email at (email address). You may also contact the researcher's advisor, Joyce Strand, University of Minnesota-Duluth, (work phone) or email at (email address).

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

## **Appendix E: Survey Questionnaire**

### **Participant Survey Questionnaire**

Thank you for agreeing to participate in this study. Please complete the survey below and return it in the attached self-addressed stamped envelope. Please note that the information collected in this questionnaire is completely confidential and will only be used for the purposes of this research study.

1. My name is: \_\_\_\_\_
2. My age is:       23-30       31-40       41-50       50+
3. Level of Education: \_\_\_\_\_
4. My job title at my high school: \_\_\_\_\_
5. Number of years in this position: \_\_\_\_\_
6. Discipline/content area (Teachers only) \_\_\_\_\_
7. Briefly describe your personal and professional use of computer technology.
  
  
  
  
  
  
  
  
8. Briefly describe your training and experience in educational computing and technology.
  
  
  
  
  
  
  
  
9. Briefly describe your experience teaching and/or taking an online course (100% online or hybrid format).

Thank you for completing this questionnaire. Your time and participation are very much appreciated and will contribute to a growing knowledge base of online learning programs in traditional high schools.

## **Appendix F: Interview Questions**

### **Interview Questions**

1. Think back to when you first became involved in the discussion and planning of online learning in your school. Explain your level of involvement and role during this process.
2. What were the factors that motivated your school to consider implementing online learning programs for students?
3. Explain how decisions were made to implement online learning programs into your school and describe the plan for development of your school's online programming.
4. Identify and describe any barriers your school experienced during the implementation phase of online learning.
5. Describe the overall reaction of student, faculty, and staff to the implementation of online learning in your school.
6. How were current education policies and procedures within your school impacted with the implementation of online learning?
7. To what extent were state educational policies considered when implementing online learning?
8. What factors would you identify were necessary for your school to create a practical and sustainable model for successful online learning programs?