

SCHOOL LEADERS' READINESS FOR  
SYSTEMIC CHANGE IN KANSAS SCHOOLS

A Dissertation by

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I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirement for the degree of Doctor of Education in Educational Leadership.

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## DEDICATION

This dissertation is dedicated to my loving husband Woody, who listened, read, analyzed, talked, encouraged, and prayed me through the process. His kindness, patience, and understanding were inconceivable. He is my best friend. We've learned and grown together in change.

To my children, Ryan and Erin, who have inspired me since the day they were born, with their love for learning, and resilience to change. To Jackie, Woody, and Courtney who have brought such joyful change to my life. To my mom and dad who instilled independence, confidence, and the desire to continue to learn and grow. To my brothers and sister and their families, who have encouraged and prayed for me to see the project through. To Ryan, Pete, and Mike who helped me keep the labors of my study in perspective while they unselfishly served in Iraq. I love you all and am truly blessed to have all of you in my life.

In a time of drastic change it is the learners who inherit the future.

The learned usually find themselves equipped to live in a world that no longer exists.

Eric Hoffer

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## ABSTRACT

The demands of a changing society have placed enormous demands on schools to change to meet these demands. Technological changes over the past 25 years have impacted society and subsequently the educational environment. Requirements for accountability in meeting the needs of all students, coupled with the demands of a digital society require a change in the system of education. Some school leaders are committed to implementing needed changes. They understand the potential and role of information and communication technology, when it is coupled with a focus on learning, for developing a capacity for relevant change, while others do not. This study examines the perceptions of school leaders who continue to be involved in systemic change initiatives in the state of Kansas. The focus of this study was to determine the characteristics, activities, and behaviors that prepared them to accept their change leadership role and take action for change. The researcher designed a qualitative study that included the data collection strategies of document review, personal interviews, and focus groups to collect the perceptions of school leaders who participated in the Kansas Alliance for 21<sup>st</sup> Century Leaders (KATCL) initiative.

The conclusions of the study were presented in the form of a model describing leaders learning change. The model emphasized that in order for change to occur leadership and learning were required. The title of the model, Leaders Learning to Change, or, the L<sup>2</sup>C Model provides a summary of the essence of this research. Implications of this model were presented in a word picture of a change leader who displayed the attributes contained within the L<sup>2</sup>C Model. Recommendations for future research concluded the discussion.

## TABLE OF CONTENTS

Chapter One .....	1
Need for Systemic Change.....	6
National Educational Technology Standards for Students .....	11
National Educational Technology Standards for Teachers.....	11
National Educational Technology Standards for Administrators .....	12
No Child Left Behind Act of 2001 .....	13
Kansas Academy of Leadership in Technology .....	13
Kansas Alliance for 21 <sup>st</sup> Century Leadership .....	16
Kansas Distributed Leadership Academy .....	18
Statement of the Problem.....	19
Purpose of the Study .....	21
Significance of the Study .....	22
Limitations and Delimitations .....	22
Chapter Two.....	24
Review of Literature .....	24
The Change Leader .....	25
Lifelong Learning .....	26
Systemic Change.....	29
Technological Advances and Societal Change .....	31
Technological Change and Education .....	38
Concepts of Change .....	42
Leadership and Change.....	42
Readiness for Change .....	46
Organizational Learning .....	48
Relationship Building through Collaboration.....	51
Self-efficacy and Change.....	52
Summary .....	53
Chapter Three.....	55
Methodology.....	55
Research Participants.....	56
Data Collection .....	57
Document Review.....	58
Interviews.....	58
Focus Groups. ....	60
Data Analysis and Interpretation .....	61
Trustworthiness.....	63
Chapter Four .....	67
Findings .....	67
School Leaders’ Perceptions of the Productive Characteristics, Activities, and Behaviors which Produce a Readiness for Change.....	70
Technology and Learning .....	70
The Digital Learner.....	72

Expectations for Learning.....	75
Essential Roles for Leaders of Learning.....	77
Models for Change.....	81
Summary.....	86
School Leaders' Perceptions of the Productive Characteristics, Activities, and Behaviors Related to Developing Readiness for Systemic Change.....	86
Engaging in Change.....	87
Motivating Change.....	89
Collective Change.....	92
Systems Thinking.....	96
Summary.....	97
School Leaders' Perceptions of the Productive Characteristics, Activities, and Behaviors Related to Maintaining a Lifelong Orientation to Systemic Change.....	98
Focus on Learning.....	98
Improving Learning.....	102
Manifesting Learning.....	105
Engaging Learning.....	106
Valuing Learning.....	108
Lifelong Learning.....	111
Self Learning.....	112
Summary.....	113
School Leaders' Perceptions of the Defensive Responses, Characteristics, Activities, and Behaviors Related to Change.....	114
Anxiety toward Change.....	114
Inadequate Resources for Change.....	118
Adverse Conditions for Change.....	120
Maintaining Status Quo.....	124
Summary.....	128
Chapter Summary.....	128
Chapter Five.....	131
Conclusions, and Implications.....	131
Statement of the Problem.....	131
Overview of the Methodology.....	132
Research Participants.....	133
Data Collection.....	134
Data Analysis.....	135
Trustworthiness.....	135
Summary of the Findings.....	136
School Leaders' Perceptions of the Productive Characteristics, Activities, and Behaviors which Produce a Readiness for Change.....	138
School Leaders' Perceptions of the Productive Characteristics, Activities, and Behaviors Related to Developing Readiness for Systemic Change.....	140
School Leaders' Perceptions of the Productive Characteristics, Activities, and Behaviors Related to Maintaining a Lifelong Orientation to Systemic Change.....	142
School Leaders' Perceptions of the Defensive Responses, Characteristics, Activities, and Behaviors Related to Change.....	144

Conclusions of the Study .....	145
The L <sup>2</sup> C Model: Leaders Learning to Change .....	146
Implications of the Research.....	149
Imagine: The L <sup>2</sup> C Mode: Leaders Learning to Change.....	151
Recommendations for Future Research.....	154
Appendices.....	169
Appendix A – Letter of Consent.....	170
Appendix B - Interview Protocol.....	171
Appendix C - Focus Group Protocol .....	174

## Chapter One

The world is undergoing rapid change unprecedented in human history (McCain & Jukes, 2001). This era of rapid change is being powered by the impact of information and communication technology and its influence on society. Not only is the power of technology increasing, but the rate at which it is increasing is growing.

Consider the following phenomena collected from a variety of observers in the field. These phenomena reflect the speed and amount of information that is currently being processed and the resulting nature of the changes that will confront organizational leaders: (1) Moore's Law, which suggests that the processing power and speed of any electronic calculating device doubles every 18 months, while the price for that technology declines by about 50% (Moore, 1965); (2) Gilder's Law of the Photon, which states that since 1983, when the first fiber line was installed, bandwidth capacity, the amount of data that can be transmitted in a fixed amount of time, per dollar has tripled every 12 months (Gilder, 1997); and (3) the internet revolution, which suggests that the world has entered into the age of information, substantiated by the fact that internet traffic doubles every 120 days (McCain & Jukes, 2001). McCain and Jukes provided further evidence of the presence of an Information Age by claiming that 1.5 exabytes (1,500,000,000,000,000,000 bytes) of new information are generated each year. They have suggested that if this information were to be stored on floppy disks, it would require a pile of disks two million miles high. In corroborating the existence of an age of information, Kurzweil (2000), predicted that there will be one thousand times more technological change in the 21<sup>st</sup> century than in the 20<sup>th</sup> century. The amount of information available and the need to manage, process, analyze, communicate, and efficiently use that knowledge is not expected to decrease.

The impact of change has also been amplified through an increase in access to fiber-optic cable and wireless technologies that have made it easier and less expensive to communicate and send information locally, as well as globally (Schaeffer, 2003). Subsequently, rapidly evolving communication and computational technologies have altered traditional practices in the workplace and across communities. For example, many advertisements include a web address for electronic access to information; an email address to encourage communication between service provider and consumer; and frequently, online shopping availability, through which the consumer can purchase goods and services without leaving home or office. The impact of these forms of technological change is evident on billboards and signs in America, and can be found in similar formats across the world, creating new possibilities for communication and productivity in the home and in the workplace.

In today's workplace there are more employment opportunities for highly skilled workers who perform multiple tasks on more sophisticated electronic equipment, resulting in fewer positions available for workers with minimal skills performing a single task (U.S. Department of Education, U.S. Department of Commerce, U.S. Department of Labor, National Institute of Literacy, & Administration, 1999). Computer systems and advanced technologies are replacing individually performed tasks, condensing the need for workers in offices and in manufacturing. For example, in the workplace, automated telephone and voice mail recording systems have virtually eliminated the need for full-time receptionists (Thornburg, 2002). In addition, advanced reporting methods utilizing electronic data and computerized processes provide access to volumes of information for management decisions. Detailed reports from electronic processes and databases provide management personnel with information to improve efficiency and workflow in operations (U. S. Department of Labor, 2002). This change in workflow and

processing of information and in the management of knowledge is creating a demand for new skills and a reorganization of training for the workforce. The rapid infusion of communication and computational technology has changed life for virtually every person in society. With this trend likely to continue, job skills that most employees possess today may be obsolete in three to five years (Moe & Blodget, 2000). This would indicate that the general public is faced with the acquisition of a new set of basic skills and new knowledge in order to process information from a variety of media and technological resources. These new 21<sup>st</sup> century skills are evolving into essential elements in order to gain information and effectively manage diverse activities such as financial decisions, banking activities, health care options, and even shopping for gifts and household products. This concept of continued skill and knowledge development is addressed by Maxted (1996), who suggested that

The pressure of change in the external environments of organizations, whether manufacturing or service providers, whether public, private or voluntary, is such that they need to learn more consciously, more systematically, and more quickly than they did in the past. . . . they must learn not only in order to survive but also to thrive in a world of ever increasing change and ever shortening predictability horizons, whether these are social, technological, political, local, or global. (p. 11)

The demands of employment coupled with access to increasing volumes of information are creating a need for individuals in our society to become lifelong learners.

According to Senge (1990), lifelong learning is one of a number of factors for which organizations intent upon success in the 21<sup>st</sup> century must take responsibility. He suggested that a true learning organization that promotes lifelong learning is one "where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of

thinking are nurtured, where collective aspiration is set free, and where people are continually learning to learn together" (p. 4). This continual need for learning and knowledge management places employers and organizational leaders in the role of promoting lifelong learning for themselves as well as for those they supervise. In the 21<sup>st</sup> century, access to large quantities of information is creating an atmosphere where information and knowledge management continue to impact efficient leadership and decision making processes. It would appear then, that in the 21<sup>st</sup> century, citizens will

Need to be better educated to fill new jobs and more flexible to respond to the changing knowledge and skill requirements of existing jobs. . . . Lifelong skills development must become one of the central pillars of the new economy. (U.S. Department of Education et al., 1999)

Lifelong learning and technology skill development are becoming common terms among forward looking employers and educators, and these concepts are affecting the way in which entire systems function.

Technology skill development and opportunities for global communication never before possible are available in almost all public schools in this country, where three-quarters of instructional rooms are connected to the internet (Cattagni & Ferris, 2002). Funding sources through state and national technology funding grants have enabled some schools to have access to the internet in every classroom, connecting them to new sources of information. The Schools and Libraries Universal Service Support Mechanism, referred to as the E-rate, has provided discounts to assist most schools and libraries in the United States to obtain affordable telecommunications and internet access through the investment of close to \$6 billion toward these efforts (Federal Communications Commission, 2004). As the technology infrastructure

improves through increased resources, the availability of computers is becoming more and more prevalent, with one-to-one laptop initiatives appearing in schools (Hammond & Salpeter, 2003). Subsequently, the way in which the business of schools is conducted, and the way in which some educators think about schools and learning, is undergoing substantial change.

One very significant area of change related to the increase of computational and communication technology in schools is the opportunity for global collaboration. This opportunity is made available through laptops, personal computers, and access to the internet. It focuses on providing schools with internet connectivity, access to information, and opportunities for collaboration, global learning, and networking opportunities never before available (Gates, 1999). As a result, the opportunities for digital collaboration between and among students and teachers, working in a simultaneous and collaborative fashion from different locations and over great distances, are increasing. Videoconferencing equipment and web-cams, which allow real time images to be sent via the internet, provide distance learning connections for students and teachers, enabling them to collaborate globally and to share projects and ideas across the internet (U.S. Department of Education, 2002c). Such digital collaboration is a natural opportunity for educators and school leaders to blend educational skills and perspectives with new technologies in the natural human processes of learning and communicating. As the electronic delivery of information and interactive communications continue to develop, the importance of lifelong learning for school leaders, teachers, and students continues to grow.

In addressing the issue of lifelong learning and the future, Daggett (1998) suggested that school leaders need to adapt to the information-based society and let go of past methodologies in preparing students for the future. In apparent support of this contention, school organizations are now requiring leaders to have the ability to develop and plan for a technological infrastructure,

integrate technology into the curriculum, maintain a staff well-trained in technology use, and be capable of continually implementing the operational and educational changes required by increased access to electronic information. In this new century school scenario, the focus is shifting from textbooks to the electronic delivery of materials via the internet and to distance learning approaches for the acquisition of instructional resources (U.S. Department of Education, 2002c). Digital processes including the management of student information, the processing of lunch program information, the management of human resources and payroll, the recording of accounting and budgetary activities, and the designing of bus routes are also becoming prevalent in a majority of the operations of the school system.

As both instructional and operational resources become more electronically structured and available, there is a continuous need and opportunity for training and consulting on how to improve school-based work processes. The pace of technological change is transforming all of society, creating a need for leaders to use increased access to information in leading the systemic changes required to develop lifelong learning for staff, students, and the community (Davis & Botkin, 1994). Leadership that incorporates a restructuring of the system to meet the potential of a digital culture for both instruction and operations can bring value to the changing organizational structure of learning.

#### *Need for Systemic Change*

Senge (1990) indicated there was a greater need for systems thinking today than ever before. He suggested that accelerated access to communication and computational technologies has provided the capacity to create far more information than anyone can absorb, in addition to promoting a greater amount of interdependence among people. He also claimed that it has created change faster than anyone's ability to keep pace. The systems approach for viewing the

impact of the information age on education was considered an attempt to break away from the industrial model of education and develop a systemic view more consistent with society's present and future needs (Toffler & Toffler, 1995). Perspectives based on systemic thinking to create positive results in education consider all aspects of the impact of these rapid changes, reflect back on previous assumptions of how school systems operate, and require a leadership structure that is flexible enough to change previous thinking (Reigeluth & Garfinkle, 1994). The expeditious change in communications and computational technology is impacting all aspects of education and producing an environment where school leaders must identify, understand, and create systemic change to improve learning.

Advocates of the need for systemic change in schools indicate that the paradigm shift in education is only a microcosm of the changes in society as a whole and that changes in society are creating an obsolete educational system (Crane et al., 2003). In order to improve learning, systemic change in education must affect all levels of the system: classroom, building, district, community, state government, and federal government. In addition, it must include the nature of the learning experiences, the administrative system supporting the instructional system, and the governance system overseeing the whole educational system (Reigeluth & Garfinkle, 1994). Schools, for the most part, are organized and managed much the same as they were 25 years ago when the first personal computers emerged in the classroom. This approach to the organization and management of classrooms is irrelevant for the needs of the information age (Gatto, 2002). Even though some change in instruction has occurred in integrating technology into classrooms, many schools have applied technology on top of traditional teaching practices rather than reinventing teaching and learning around the possibilities technology allows (U.S. Department of Education, 2003).

In addressing the importance of providing an educational system designed to adapt to the needs of students in the information age, the report of the Partnership for 21<sup>st</sup> Century Skills (Crane et al., 2003) stated, “The education system of today faces irrelevance unless we bridge the gap between how students live in the information age and how the education system is structured for learning” (p. 6). The everyday lives of a majority of students include advances in technology in almost all of their communications, allowing them to identify with their peers in a global culture through music, games, fashion, digital photos, and movies. The internet can be used as a virtual tutor and study shortcut, to help students with homework, to allow students to correspond online with classmates in virtual study groups regarding school projects and upcoming tests and quizzes, and as a virtual textbook and reference library (McCain & Jukes, 2001).

The increasing power of these digital resources and the opportunities for collaboration they offer provide prospects for change in the entire system. These resources also requires leadership which provides digital learning opportunities for students (Toffler, 1991). In order for schools to promote learning for the digital culture of 21<sup>st</sup> century students, school leaders who consider the power of digital collaboration, provide access to electronic resources for student projects, and make opportunities available for professional development and training are needed to create an educational system that is relevant for the future.

Levin and Arafah (2002) described the importance of restructuring the educational system to meet the changing cultural needs of students in an information rich society who cannot conceive of doing schoolwork without internet access, yet are not being given adequate opportunities to connect digitally while at school. Efforts to provide leadership for the integration of new technologies into the educational system have improved, yet inequities exist in schools that range from buildings with classrooms that have access to laptops for every student, to entire

school buildings that share one computer lab. This inequity is further evidenced in the classroom, where some teachers use technology integrated with project based learning to deliver instruction, some teachers deliver instruction and use technology only as reinforcement, and some teachers find it hard to use technology at all (National Center for Educational Statistics, 2002). The new demands on schooling and learning require a continuous rethinking and review of the processes for teaching, learning, and school management in a digital culture of learners.

Over the past three decades business and industry have struggled to adapt to the changes made possible with information technology, and millions of workers have had to re-train for the work place (Moursund, 1997). These same disruptions and changes are becoming evident in the educational system. Students need to be prepared for a workplace in a world with access to immense amounts of information technology and for jobs not yet created. The planning for the possibilities of tomorrow that supports continuous learning and sharing of knowledge requires the involvement and support of effective school leaders (New York State Department of Education, 2003).

Understanding the need for a cultural change that supports continuous learning, sharing of knowledge, and the role of leadership in managing it will most likely occur through different mechanisms at different developmental stages of the organization (Schein, 1992). As the internet and advances in technology enhance opportunities in entire school communities, school leaders and teachers are challenged to redefine their roles in the learning community. In this digital culture connecting administrators, teachers, students, and parents to a global network of resources becomes commonplace (Ross, McGraw, & Burdette, 2003). The challenges of the global economy and the opportunities offered by new technologies underscore the need for strong leadership related to student learning. The tremendous challenges of stretching budgets

and reformulating plans to best utilize the advances of technologies create a need for school leaders to seek models for successful learning communities of the 21<sup>st</sup> century (Institute for Educational Leadership, 2000). School leaders who are seeking models for successful learning communities must reflect and examine their personal accountability in creating a successful learning environment.

As rapid changes in technology continue to infiltrate into school processes, some become uncomfortable with the feeling that schools are not accomplishing what they are supposed to accomplish, thereby creating motivation for change (Schein, 1992). As alternative models for learning become increasingly available, an unfreezing of past thinking regarding the systemic structure of schools may occur, opening new possibilities for the future, and weakening the frustrations caused by the slow pace of change (Lewin, 1951). According to Senge, Kleiner, Roberts, Ross, and Smith (1999), in order to create the motivation to change organizations for the better, an opportunity must be provided to change the way members think and interact. In creating a shared vision for new models of learning in the 21<sup>st</sup> century, positive connections and interactions between school leaders involved in the change processes are needed to influence the system. An enduring capacity for change is increased through participation in developing tangible activities, new governing ideas, innovations in infrastructure, and new management methods and tools for changing the way work is conducted (Senge et al.). Intelligent responses to the changing environment are more likely to be successful when a clear vision and continued opportunities for dialogue on 21<sup>st</sup> century learning, skill development, and leadership permeate through the entire organization. A variety of national and state level initiatives that focus on this need for a vision of change and dialogue have emerged since the beginning of the 21<sup>st</sup> century.

### *National Educational Technology Standards for Students*

As a response to the need for a vision for integrating technology into instruction for students, the International Society for Technology in Education (ISTE) designed and organized the National Educational Technology Standards for Students (NETS-S) in 2000 (NETS Project Leadership Team, 2000). NETS-S were developed to guide educational leaders in recognizing and addressing the essential conditions for effective use of technology to support PreK-12 education, as well as to assist teachers in preparing activities in which students achieve success in learning, communication, and life-skills (NETS Project Leadership Team, 2000). Since skilled learners in the 21<sup>st</sup> century are required to develop proficiencies in information and communication technologies, these efforts set the vision for systemically changing classroom instruction. Students become more engaged in their own learning with projects that construct new knowledge and develop their competence in using digital tools to access, manage, integrate, and evaluate information. It is this type of learning activity that is more engaging for students of the information age (International ICT Literacy Panel, 2002). The NETS-S were designed on the premise that students become more interested and engaged in learning activities that are meaningful in their lives. These standards were further expanded through a framework for teaching in a 21<sup>st</sup> century context, incorporating instructional pedagogy with communication and computational technologies.

### *National Educational Technology Standards for Teachers*

ISTE's National Educational Technology Standards for Teachers (NETS-T) were developed as a framework for implementing technology in teaching and learning for universities, state departments of education, and school districts across the nation (ISTE, 2000). As emerging information technologies provide tools capable of transforming the way the world learns, works,

and lives, the NETS-T framework acknowledges the complexity of applying pedagogical knowledge in the structure of education. Incorporating communication and computational technologies provides a means for educators to prepare young people for a rapidly changing future. According to the ISTE standards for teachers, “The world is different, kids are different, learning is different, and teaching must be different too” (ISTE, 2000). Integrating information and communication skills with thinking and problem solving skills, self direction, and interpersonal skills in the classroom skill set will assist teachers and students in continuing to develop tools for lifelong learning (Partnership for 21st Century Skills, 2002). In addition to standards for students and teachers, significant school reform for the 21<sup>st</sup> century will rely on school leaders who are effectively using communication and computational technology across all functions of the school system.

#### *National Educational Technology Standards for Administrators*

To prepare students for the future, school leaders must possess effective 21<sup>st</sup> century leadership skills (Partnership for 21st Century Skills, 2002). In recognizing that administrators play a pivotal role in determining how well technology is used in schools, ISTE published the National Educational Technology Standards for Administrators in 2001 (TSSA Collaborative, 2001). There is a wealth of evidence showing that facilitating systemic change in schools, and maintaining that change, relies on capable leadership (Gibson, Wyckoff, & Cook, 2004a; Lambert, 2003; Maxted, 1996; Moe & Blodget, 2000). It is imperative to focus on leadership for systemic change in schools to optimize the benefits of technology in learning, teaching, and school operations (TSSA Collaborative, 2001). A powerful vision for the entire system of public education is critical for closing the gap between how students live and how they learn in school.

### *No Child Left Behind Act of 2001*

The No Child Left Behind Act of 2001 (NCLB) poses challenges to school districts to implement systemic change for closing the achievement related gap and improving student learning for the 21<sup>st</sup> century (U.S. Department of Education, 2001). NCLB is a landmark in education reform designed to improve student achievement and to change the culture of America's schools. NCLB embodies four key principles: stronger accountability for results; greater flexibility for states and school districts in the use of federal funds; more choices for parents of children from disadvantaged backgrounds; and an emphasis on teaching methods that have been demonstrated to work. Title II, Part D of NCLB focuses on enhancing education through technology (U.S. Department of Education, 2002a). This section of the act contains a requirement for state education agencies and local school districts to set goals for using technology to improve student achievement that are aligned with challenging state academic standards. To adhere to these requirements, school leaders need access to quality leadership development which focuses on whole system improvement and technology integration (U.S. Department of Education, 2002b). The requirements of NCLB provide an imminent challenge for state leaders to create visions to change schools dramatically to improve student learning.

### *Kansas Academy of Leadership in Technology*

The Kansas Academy for Leadership in Technology (KAL-Tech) represents the first step in a state level vision for addressing the need to develop a vision of systemic change designed around the focus of the improvement of student learning. KAL-Tech was developed as a result of personnel in the Kansas State Department of Education recognizing the need to strengthen and focus the vision of school leaders for systemic change in Kansas schools (Kansas State Department of Education, 2001). In 2000, the Bill and Melinda Gates Foundation invited every

state in the United States to submit a proposal for a leadership development grant, for which the state would provide matching funds, to prepare school leaders with the qualities needed to develop 21<sup>st</sup> century skills (Kansas State Department of Education, 2003). Personnel from the Kansas State Department of Education submitted a proposal for KAL-Tech, which was accepted and funded by the foundation. The focus of the project was the development of school district leadership in a technology-rich environment. The mission of KAL-Tech was “to develop an ongoing, sustainable learning community of all Kansas school administrators that develops and maps a vision and plan for systemic change through technology integration into our schools and promotes the future of education now” (Kansas State Department of Education, 2001). By spring 2005, more than 1,400 school leaders had participated in the KAL-Tech initiative since its beginning in the fall of 2001. Participants in KAL-Tech were organized into teams and provided opportunities to dialogue and envision the future of education, and the role of school leaders in that process, using technology as a tool for systemic change (Kansas State Department of Education, 2001).

Using technology as a tool for systemic change in the global, networked environment of the 21<sup>st</sup> century, school leaders can provide students with opportunities to work collaboratively with other learners across the world (Partnership for 21st Century Skills, 2002). With access to the internet and advances in technology, opportunities are available to create communication systems that reach out to employers, community members, and parents and reduce the boundaries that divide schools from each other and from the real world (Levin & Arafeh, 2002). Becoming proactive in utilizing technology as an avenue for creating systemic change can assist school leaders in preserving their local schools and becoming part of the global community (Ranson, 1999). Involvement in KAL-Tech provides Kansas school leaders the opportunity to

discuss the challenges of the changing world, and to consider alternative approaches to leading and learning designed to bring about the kinds of whole system change needed to create an environment where no child is left behind.

The KAL-Tech focus on leadership development and systemic change using technology correlates with the requirements and goals of the No Child Left Behind Act of 2001, which indicated that students should be technology literate by the end of the eighth grade (U.S. Department of Education, 2002b). In order to provide a technology-rich environment to meet these requirements new dialogue and discussion is required for school leaders. The KAL-Tech approach to dialogue and discussion is based on Senge's five disciplines of learning organizations (Senge, 1990). Participants become involved in presentations and readings on leadership, school change models, and systemic reform, where they are provided the opportunity to practice the first discipline of personal mastery. The second discipline, team learning, provides the opportunity to learn from each other, and to work together in discussions on where they are and where they need to be in providing the learning environment required for student success. The interaction with teams and groups allows comparisons of growth in learning and in developing new mental models for learning in the 21<sup>st</sup> century. As teams progress through the process of dialogue, reflection, and questioning, a re-alignment of individual mental models occurs, eventually creating a shared vision, which is the fourth discipline of Senge's learning organizations. Creating a shared vision incubates the ability for participants to move into systems thinking (Kansas State Department of Education, 2001). As the sessions progress and continue to challenge the processes and structures of the educational system, new mental models and shared visions of systemic changes needed for effective student achievement are formulated.

Upon completion of six months of activities, team members submit a personal action plan with a vision for systemic change in learning for the 21<sup>st</sup> century (Kansas State Department of Education, 2001). As indicated in the KAL-Tech mission statement, school leaders become part of a community of learners who are encouraged to map a plan for systemic change and promote the future of education in Kansas schools (Kansas State Department of Education, 2001). Understanding the process of change that appears to occur from the dialogue and discussions is important to the future of Kansas school communities. As the dialogue and discussions evolve through the KAL-Tech process, the need to extend the knowledge base and continue to provide school leaders with an intellectual environment designed to support the creation of models for change evolves into a second level of continuous professional development for leaders in Kansas based on the concept of organizational change. This second level initiative is called the Kansas Alliance for 21<sup>st</sup> Century Leadership.

#### *Kansas Alliance for 21<sup>st</sup> Century Leadership*

Another statewide effort aimed at continuous improvement for educational leadership training and systemic change emerged with the development of the Kansas Alliance of 21<sup>st</sup> Century Leadership (KATCL) (Kansas State Department of Education, 2004a). The alliance evolved from the desire of Kansas school leaders who participated in the KAL-Tech initiative to continue with the dialogue and develop it further into an organizational change model. Participants in the alliance continue to learn, dialogue, and clarify new ways to do the business of education in the 21<sup>st</sup> century. The purpose of the alliance is to provide KAL-Tech graduates with the opportunity to continue an in-depth study of leadership and systemic change in a technologically-rich environment and to design a school environment where the focus is on the 21<sup>st</sup> century learner. The philosophy behind the initiative focuses on the belief that the current

system does not prepare every child for success, and does not allow all children to learn to the best of their ability (Kansas State Department of Education, 2004b). As technology races forward and curricula and practices change, school leaders have begun probing for models to change their organizations to redefine the way learning occurs, and to lead them in a direction appropriate for the 21<sup>st</sup> century. More than ever, school leaders need planning models that encourage and revitalize stakeholders who are puzzled and fearful of change. KATCL offers a support structure for school leaders to further dialogue, research, plan, and prepare a model where student achievement is the central issue, providing an avenue for teams from various school districts to focus on how to create systemic change in Kansas schools (Kansas State Department of Education, 2004a).

KATCL sessions were designed to provide a collaborative opportunity for participant teams to further expand their role in implementing systemic change across Kansas (Kansas State Department of Education, 2004b). Opportunities were provided for participants to reflect on their beliefs regarding schools and learning, consider the differences between generations of the past and the needs for the future, and develop models for change in schools based on current research. Over a six month period of time, the teams conducted a series of activities and conversations designed to create a transformational plan for change (Kansas State Department of Education, 2004b). At the conclusion of the six months of study and collaboration, each team presented a final plan to alliance cohorts and members of the state department of education. Each team made a commitment to convert some form of the plan into reality. The forces created through increased access to information and communication technologies are causing school leaders to use their experiences in KAL-Tech and KATCL to evaluate their district structure and capabilities on personal, professional, and systemic levels (Gibson, Wyckoff, & Cook, 2004b). To assist in this

effort, another state level initiative, the Kansas Distributed Leadership Academy (KDLA), has been made available to further capitalize on the introductory foundation provided by earlier leadership training initiatives. KDLA experiences are focused around leadership capacity building and are also related to the professional development of school leaders in Kansas who are working in a technology-rich, 21<sup>st</sup> century learning environment.

#### *Kansas Distributed Leadership Academy*

KDLA was established on the premise that most schools have distributed leadership but may not be maximizing the leadership talents of individuals within the organization (Kansas State Department of Education, 2004b). The activities of KDLA are designed to allow participants to explore, in learning-focused teams, the tools of leadership practice that will enhance learning and teaching. Topics include: understanding the potential power of distributed leadership and its role in systemic change; assessing the current district environment; identifying the strengths/talents of the staff; creating a common purpose focused on improving learning; understanding the tools/mental models needed to move from first order change to second order change (Ertmer, 1999); understanding the generational relationships that exist within a district; and building a plan to enhance content that is relevant, engaging, and will make a difference in Kansas schools (Kansas State Department of Education, 2004b). As these initiatives and conversations among school leaders across Kansas continue to evolve, and as districts begin to implement models based on achievement, it becomes increasingly important to continuously review the opportunities and challenges contained in the vision for a new way of thinking about education and learning in Kansas.

### *Statement of the Problem*

Efforts at school reform focusing on the need for new thinking due to the rapid impact of technology have been part of school leaders' dialogue and discussion at least since the Nation at Risk Report in 1983, which indicated an increasing need for higher skilled workers for rapidly changing technologies (National Commission on Excellence in Education, 1983). Since that time, the importance of providing students with access to technology tools and 21<sup>st</sup> century skills has become a widely held concept for classroom pedagogy (U.S. Department of Education, 2003). Staff development programs and training for teachers and school leaders designed to incorporate 21<sup>st</sup> century skills utilizing technology into the learning process have become part of educational planning. These efforts are both necessary and progressive and require a collaborative approach in leadership to incorporate the systemic change required to build the learning structure of the future. According to the Center for Education report (2002) on workshop proceedings on the importance of leadership in improving learning with information technology

There are difficult challenges to bringing the full potential of information technology to bear on improving teaching and learning. The creation of cutting-edge technology designed for specific educational goals and needs will require coordination and cooperation by the best thinkers and planners in information technology, the sciences of learning, and the educational community. New and evolving knowledge, strategies, and mechanisms will be required to meet the current and future needs of schools and other educational settings. (p. 42)

The opportunities for learning and connectivity provided through access to technology are creating the need for innovation, and require new leadership thinking to create system changes to

utilize the resources currently available. Transforming the educational system to focus on the relevance of technology as a tool to create change requires a change in thinking regarding learning and leading.

Further, the Center for Education (2002), has suggested that “good educational software and teacher-support tools, developed with full understanding of the principles of learning, have not yet become the norm” (p. 3). In order to reach this norm, teachers will need extensive support and leadership to reconstruct their educational strategies to include 21<sup>st</sup> century skills and effective technology integration. While these tools are available in most schools, not all leaders are aware of the substantial systemic change needed to create an effective digital learning environment. As leaders understand their role in supporting systemic changes appropriate for this digital learning environment, a transformation of expectations in individual learning is necessary (Partnership for 21st Century Skills, 2004). While there is an increasing number of school leaders who are taking advantage of the opportunities presented in utilizing technology to transform the organizational structure for learning, there remain many who are not responding to this opportunity.

Shifting technologies are challenging educational content, methods of instruction, infrastructure, and overall operations of schools. Schools with leaders who are ready to assume new roles and responsibilities and are committed to new visions for teaching and learning will be more successful in preparing students for the future (Partnership for 21st Century Skills, 2004). The recognition of a need for discourse on the part of some school leaders and the desire to construct a system of learning or a new model appropriate for 21<sup>st</sup> century learning environments escalates the need for data describing the impact of futures oriented dialogue on school leaders involved in systemic change initiatives such as KAL-Tech, KATCL, and KDLA. More to the

point, it is important to understand why some school leaders perceive a need for change in schools and learning and, specifically, what they have done to prepare themselves to accept the need for such a change, allowing them to move forward in creating models for systemic change in schools. This information is currently not available.

### *Purpose of the Study*

This study will specifically seek to examine the perceptions of school leaders who have participated in both KAL-Tech and KATCL initiatives regarding: (a) the need for change in the way schools are organized and in the learning process; (b) the type of dialogue, reading, and activities utilized in preparing leaders for accepting change; (c) the impact of these activities on their readiness to reconsider their views on learning and systemic change; and (d) the processes they consider essential in supporting others to undergo a similar change in their thinking regarding systemic change and learning. In order to accomplish this task a review of relevant literature was necessary to provide a foundation upon which to build the study designed around the following research questions:

1. What are the perceptions of school leaders involved in the process of systemic change regarding the need to accept their role in creating systemic change in schools?
2. What experiences do school leaders involved in systemic change initiatives consider necessary to the development of their personal readiness for the leadership role that systemic change in schools requires?
3. What do school leaders involved in system reform initiatives perceive as the fundamental processes necessary in assisting their colleagues to recognize the need for systemic change?

### *Significance of the Study*

School leaders view the need for systemic change according to their experience and training (Ellsworth, 2000). Although there have been many studies conducted about the need for reform in schools (Tyack & Cuban, 1998), little has been done to review the factors that cause school leaders to change their thinking about learning and schooling. This research will begin to fill this gap in the literature. As school leaders dialogue and discuss why systemic change is needed and analyze their role in creating that change, they can also develop an understanding of how to assist other school leaders to move forward, as well. For this reason, it is important for school leaders to understand their role in systemic change, why it is needed in schools, and what factors are causing school leaders to accept the challenge to create needed change. The results of this research study provide insights into this process.

Findings from this study will: (a) contribute to understanding systemic change as it is perceived by school leaders, (b) reinforce the thinking of those school leaders who see a need for systemic change, (c) emphasize the need to assist other school leaders to understand the necessity for systemic thinking and systemic change in schools, and (d) emphasize the impact of technology on the process of enhancing the learning environment and redefining the process of learning. These findings will provide a basis from which school leaders might further consider the processes of personal development and self improvement as they pertain to systemic change, their role in the process of facilitating change in a system of learning based in previous eras, and how learning might more appropriately be defined for students of the 21<sup>st</sup> century.

### *Limitations and Delimitations*

The focus of this study was confined to the perspectives of school leaders who had participated in the Kansas Alliance for 21<sup>st</sup> Century Leadership (KATCL) initiative during 2003-

04. This purposive sample of school leaders from selected KATCL teams was limited to specific geographic areas within the state of Kansas. Consequently, the findings of this study are limited in application to reporting those perceptions and do not take into account the perceptions of school leaders who did not participate in the KATCL initiative. The continually evolving state of technology implementation into Kansas schools creates an environment where school leaders continue to change perceptions of their role in the change process. As a result the findings of this study are limited to current issues related to change and may not apply to future change issues.

As a result of the design decisions leading to the development of this study, it is delimited to the views and beliefs of those school leaders participating in the study from Kansas. Literature regarding school leaders' thinking about their role in preparing for systemic change in schools is limited; therefore, writings in support of the findings were restricted to those areas viewed as relevant from the participants in the study.

## Chapter Two

### *Review of Literature*

This review of literature was designed to provide the reader with a framework for understanding the change leader, the importance of lifelong learning in implementing change, what educational leaders must consider in supporting systemic change in the learning environment, and how digital technologies have affected society and consequently are reshaping the way education is practiced. The belief that change is a required component of educational systems caused the researcher to question why some school leaders see and accept the need for change, while others do not. Investigating the change leader and the causes for developing a readiness for systemic change is important in understanding the process of change in school organizations. The current literature has revealed little research on this particular topic, although there is considerable research regarding why change is needed in educational systems, how concepts of change are used to analyze change in educational systems, how organizational learning is necessary for change, and how the phenomenon of lifelong learning impacts individuals and organizations. A review of literature on change and learning was used by the researcher to clarify the development of a readiness for change in school leaders. According to Erlandson, Harris, Skipper, & Allen (Erlandson, Harris, Skipper, & Allen, 1993), using others' work to clarify the context of an expanded study provides benefits to the researcher, and clarification of the research context can be made by expanding upon previously conducted research.

Consequently, the first section of the literature review begins with an examination of the characteristics of a change leader and the importance of lifelong learning for the current educational environment. The second section will include a review of the influence of digital

technology on contemporary society and how it has driven school leaders into the process of creating systemic change in the learning environment. The third section will focus on the importance of developing an understanding of change and learning in order to create organizational change in schools. Section four provides an examination of the relevance of relationships, collaboration, and self-efficacy to sustaining systemic change in schools. The final section will provide a summary related to the topics addressed.

### *The Change Leader*

A change leader facilitates the changes needed in the beliefs, attitudes, and practices of the organization (Dooley, 1999). A variety of writers have suggested that the most significant traits of great change leaders are the desire for knowledge and new learning and a willingness to push beyond the status quo and take continued risks in order to create an appropriate environment for learning. They claim that change leaders have an ability to be open to the new ideas of others and to drive change through goals or ideals that are for the common good. Consequently, these writers infer that the acceptance of the ideas of others is demonstrated by a support for lifelong learning, the ability to manage systemic change, an understanding of the role of technology in the organization, and a belief in the significance of collaboration for implementing new processes (Crane et al., 2003).

Implementing systemic change and organizational learning requires change leaders to recognize the role that technology plays in assisting with the process. The use of technology has a strong supportive role in implementing required changes in education for the information age (Partnership for 21<sup>st</sup> Century Skills, 2003). A combination of the behaviors and characteristics listed above may produce the most effective change leaders.

## *Lifelong Learning*

One of the most crucial roles for the change leader is to encourage a capacity for lifelong learning in the organization (Stites, 1998). Leverage for change in the 21<sup>st</sup> century economy has placed a premium on innovation, customization, new business models, and new ways of organizing work and learning. In order to succeed in this new environment, individuals and organizations must continually acquire new skills and new ways of managing knowledge and information in a collaborative effort (Fullan, 2001a). Skilled change leaders understand that an environment for lifelong learning requires the development of a learning organization.

Dufour and Eaker (1998) designed the professional learning community as a model of collaborative lifelong learning which fosters cooperation, emotional support, and personal growth to accomplish transformation and continuous improvement in schools. Professional learning communities are designed to establish an organizational environment with a shared mission, vision, and set of values; an atmosphere of collective inquiry; an organization built around collaborative teams rather than individuals; an orientation toward experimentation and action; groups of members who constantly search for continuous improvement; and a system for continual review of the results of actions. Like Senge (1990), the authors concluded that building a professional learning community would only be accomplished when systems thinking occurred and everyone could collaborate to become an ardent advocate for a shared vision for change (Dufour & Eaker).

The views on creating a learning organization and the importance of collaboration were reinforced by Schlechty (1999), who believed that focusing on results, collaboration, and lifelong learning earns commitment from organizational members. Littky and Grabelle (2004) indicated that one of the most important factors in creating an effective school was organizational

commitment to both students and lifelong learning. The authors seemed to be indicating that real learning occurred when the teacher understands that they, as well as the students, are learning together. Collaborative learning can enhance the growth experience and improve results by continually increasing knowledge and through the mutual discovery of new tools for understanding. Individuals are engaged in lifelong learning activities in everyday life, at work, and through interactive communications with others. Understanding the importance of expanding lifelong learning into processes required to change an organization's structure is important to change leaders in the development of learning organizations (Alheit & Dausien, 1999). Senge, Kleiner, Roberts, Ross, and Smith (1994) suggested that a true learning organization which promoted lifelong learning was one where members were continually expanding the capacity to create desired results, where new and expanded patterns of thinking were nurtured, where collective ambitions were uninhibited, and where there was a continuous desire to learn together. This continual need for learning and knowledge management has placed organizational leaders in the role of promoting lifelong learning for themselves as well as for the entire organization. Senge's (1990) five disciplines of a learning organization include personal mastery, mental models, shared vision, team learning, and systems thinking. Each component, according to Senge, provided a vital dimension in creating an organization that can truly learn (Senge et al.).

*Personal mastery.* Personal mastery involves a continual clarification and deepening of personal vision, focused energy, patience, and a commitment to accomplish what matters most. Thus, an organization that has developed a commitment to and a capacity for learning grows as its members learn. Change leaders understand that it is possible to structure an environment which provides encouragement and support to individuals who desire to increase their own

personal mastery. The key is to create situations which spark personal values, interests, and commitment (Senge, 1990).

*Mental models.* Mental models are defined as the deeply ingrained assumptions, generalizations, and images that influence an individual's understanding of the world and the actions that follow. Mental models mirror the "images, assumptions, and stories which we carry in our minds of ourselves, other people, institutions, and every aspect of the world" (Senge et al, 1994, p. 235). A change in one's mental model begins with a reflective consideration and analysis of the internal view of the world. Senge et al. referred to these as "learningful conversations that balance inquiry and advocacy for change" (p. 9). A change leader who understands the importance of presenting situations which help individuals to explore and restructure the way they see things will have a greater capacity to create an environment for systemic change (Senge et al.).

*Shared vision.* Shared vision provides organizational members with an opportunity to excel and learn because of a combined commitment to the projected future (Senge et al., 1994). Leaders of change understand the importance of creating a sense of purpose and shared vision that bonds members together to build a sense of community which propels the fulfillment of the organization's purpose. A change leader recognizes that a leader's vision with no shared commitment to the future is counter productive to organizational learning, growth, and systemic change (Senge et al.).

*Team learning.* The discipline of team learning is kindled with common dialogue, which provides opportunities for suspended judgment and the development of a capacity for collective thought. Senge et al. (1994), defined true team learning as the ability to "enhance the team's capacity to think and act in new synergistic ways, with full coordination and a sense of unity,

because team members know each other's hearts and minds" (p. 352). The ability to focus on the collective potential of the organization illustrates the power of team learning. The change leader considers team-learning essential in creating a capacity for organizational change (Senge et al.).

*Systems thinking.* Systems thinking, according to Senge et al. (1994), can occur when relationships across the entire system are considered. Senge used a metaphor of the system of rain to describe systems thinking. Rain was described as a system including not only the initial activity of the clouds massing, the sky darkening, leaves twisting upward, and lightning flashing, which indicate that the system of rain had developed but also the follow-up that occurred after the storm, such as the runoff of water and how it fed into groundwater miles away, the development of a clear sky the next day, and the growth and nurturing of plants and animals. All these events appeared distant in time and space, and yet were all connected with an influence that was hidden from view but within the same pattern (Senge et al. 1994). Systems thinking provides a change leader with a powerful communication tool for understanding organizational behavior and assisting others to see and act in a way that is in line with the shared vision (Senge et al.).

### *Systemic Change*

Change leaders understand that an organization will change to maintain its identity, and that as forces such as advances in technology create a need for reorganization in schools, the potential for systemic change increases (Maxwell, 2003; Wheatley, 1999). Robinson (1987) indicated that change occurs when there is a constant underlying structure that determines an evolving identity. By referring to the famous line from Heraclites, "We step into and we do not step into the same river. We are and we are not" (p. 21) Robinson was emphasizing the importance of understanding the system of change; there is harmony amidst change, and change doesn't occur through one isolated event.

James (1996) promoted the importance of leaders continuing to develop a capacity for systemic change and for organizations to think in new ways by stating,

You need to understand how the currents of technological change will affect your life and your work, how economic changes will affect your business and its place in the global market, how demographic and cultural change will alter your self-perception, your perception of others and of human society as a whole. (p. 24)

Change leaders who are effective in developing learning organizations operate by understanding both the present and the future. Understanding the current environment gives the change leader feasible foundations for recreating structures to develop new mental models in support of organizational change (James).

Gladwell (2000) supported the concept of the leader's role in understanding systems thinking in order to create organizational systemic change. Three rules were identified to create organizational systemic change, which Gladwell referred to as an epidemic: the law of the few, the stickiness factor, and the power of context. Development of an epidemic of change requires a reconstruction of thinking about the world. The law of the few refers to the fact that an infection can begin with one person, an effective change leader. In reconstructing thinking and creating new mental models, the image must be memorable, thus creating a stickiness factor. The fact that behavior is determined by an individual's perception of surroundings indicates that team learning and a change in mental models are influenced by the power of the context provided by the leader. Gladwell stated "What must underlie successful epidemics, in the end, is a bedrock belief that change is possible, that people can radically transform their behavior or beliefs in the face of the right kind of impetus" (p. 258). Gladwell indicated that individuals are powerfully influenced by surroundings, the immediate context of the situation, and the personalities of others around them.

Change leaders, when investigating complex behaviors, understand how easily persuaded and how acutely sensitive an individual becomes to even the smallest details of everyday life. For this reason, change is perceived as volatile and often inexplicable, and can ultimately occur in a moment in time based on the environment provided (Gladwell).

Technological changes have impacted work processes as well as the way the processes are embedded into the culture of the work environment (Schlechty, 1999). Just as technology has driven many of the systemic changes in the world of work, it also holds the potential for providing the support to create an atmosphere for changing the educational environment (McNamara, 1998). Rapid growth in areas such as distance learning, technology-enabled assessments, and technology resources for instruction influenced the development of new strategies to ensure lifelong learning (American Society of Training Directors & National Governors Association, 2001). Change initiatives, which focus on utilizing technology to improve learning, provide the opportunity for change leaders to redesign the way learning is embedded into the educational organization.

### *Technological Advances and Societal Change*

Technological advances have impacted society and influenced changes in existing structures to adapt to these advances. The changes in these structures include changes in work policies, job roles in the workplace, and relationships that govern the way work is completed (Schlechty, 1999). The growth of technological change over the past 30 years has been greater than any 70-year generational time period in the last 10,000 years and is expected to continue at an augmented rate (McCain & Jukes, 2001). These advances have been multiplying at ever increasing rates, previously referred to as Moore's law (Moore, 1965), which suggested the density of electronic components on a microchip would double every 18 months while the cost

would decrease by 50%. As the power of the microchip has increased while costs decrease, a multitude of new products, services, and learning modalities have evolved. The evolution of the internet has provided access to information and opportunities for knowledge and communication at rates never before possible. The youth of the 21<sup>st</sup> century are interacting with video game components that have more power than the supercomputer of just 10 years ago (McCain & Jukes). Individuals are able to communicate on cellular phones that have digital cameras and the capability of recognizing the owner's face (Sharp, 2004). As digital technologies and resources become more advanced and prevalent, new demands for connectivity, job skills, and learning activities evolve (Knight, 2005). As the effect of doubling continues, the trends of advancing technologies are expected to continue gaining speed and momentum, which will continue to affect connectivity, job skills, and learning.

This rapid technological change has led to the prediction of several trends for the future. Some of these trends are the development of global digital networks, which become available through the growth of the internet; the increased power of personal computers and handheld devices; and the continual increase in bandwidth (McCain & Jukes, 2001, Thornburg, 2002). For example, in 1997, 1 trillion bits of information could be downloaded per second. This is similar to moving all of the text, images, sounds, and video contained in 10 large city libraries from New York to Los Angeles in .0043 of a second. This phenomenon has continued and is reflected in Gilder's Law of the Photon (Gilder, 1997). This law suggests that bandwidth speed will continue tripling every 12 months, while the amount of bandwidth that can be purchased per dollar, will double every 18 months. Oblinger and Verville (1999) share this comparison of the evolution of computer power and that of the American automobile:

One reason that information technology acts as a change agent is that the speed and magnitude of the alterations it catalyzes are so dramatic. Consider the automobile as an example of the transformative effects of technology. In 1985, the most expensive car made in the United States was a Cadillac. It cost \$17,000, averaged 12 miles to the gallon, and weighed more than one ton. If the automobile industry had achieved the same technology trajectory as the computer industry, today a Cadillac would cost \$12.63, weigh 14 pounds, get 5,900 miles to the gallon, and be three feet long! In fact, if you are driving a Ford Taurus today, you are 'piloting' a vehicle that contains more computing power than the first lunar landing module. (p. 1)

This trend of increased speed and lower cost of connectivity through digital networks, combined with other changes shaping society, has contributed to the importance of understanding of the impact of technology on the systems of society.

The development of global digital networks instigated the evolution of technological fusion, defined as the blending of voice, video, data, computing, and communication technologies (McCain & Jukes, 2001; Thornburg, 2002). Several authors claimed that blended and converged technologies form technological hybrids with greater power than the individual technologies themselves (Intel Communications, 2005; McCain & Jukes, 2001; Thornburg, 2002). In 1970, computers, telecommunications, photography, publishing, and television were separate technologies; however, by 1995 these technologies had begun to overlap. For example, digital computers and cameras were fused together to produce the digital camera. As trends such as technological fusion continue to evolve, the ability to share information and ideas leads to increased opportunities for training and education. Examples of new opportunities for learning and instruction which have evolved as a result of technological developments include the

development of flight simulators to train pilots, the use of computer images for constructing prototypes of building design, the use of visors to monitor eye movements to gauge the cognition levels of students, the analysis of assessment data to make decisions to increase student achievement, and the evolution of virtual courses and online instruction to complement traditional instruction (American Society of Training Directors & National Governors Association, 2001). Subsequent to the development of global digital networks and technology fusion, new digital resources, services, capabilities, and coalitions have become available to enhance the learning environment in the information age.

Global digital networks and technology fusion affected the emergence of strategic alliances between manufacturers, service providers, communication companies, and the entertainment industry. For example, several years ago SEGA, a video game company, joined forces with TCI, a cable company, and AT&T, a telecommunications company, to offer subscribers the SEGA channel. SEGA and TCI formed an alliance to allow viewers to download video games from satellites via cable connections and telephone lines, which allowed users to connect with others to play interactive games over telephone lines while keeping a voice channel open so users could talk with each other as they played (McCain & Jukes, 2001; Sega of America, 2005). This method of delivering information and interactive services evolved into interactive services for television, movies, video games, e-mail, instant messaging, telephone, banking, video-conferencing, virtual shopping, and education.

Two examples of entertainment companies that emerged into the educational landscape follow. The first, the George Lucas Educational Foundation (GLEF), was developed in 1997 as a nonprofit operating foundation to document and disseminate information about exemplary programs in K-12 schools (Lucas, 2005). The goal was designed to provide an ideal educational

landscape, sharing examples of best practices in integrating technology. These examples provide illustrations where students are motivated to learn, teachers are energized by the excitement of teaching, and both students and teachers are encouraged to seek knowledge and expertise beyond the school building (Lucas). The second educational resource which impacts digital learning is Discovery Communications, an industry leader in digital video and multimedia-based learning (Discovery Communications, 2005). Discovery Communications provides digital video-on-demand with educational video clips and teacher resources to enhance the delivery of instruction and learning. Through public service initiatives, products, and partnerships, Discovery Communications' educational resources reach over 90,000 schools across the United States, serving 1.5 million teachers and their 35 million students each year (Discovery Communications). These types of emerging strategic alliances provide opportunities for dramatic changes in the educational landscape with the creation of digital learning offerings previously unavailable in the traditional learning environment.

The evolution of informational computing and digital resources has stimulated a desire for additional access to technology and increased the opportunities for communication and learning. The prediction that everyone will have access to a personal computer is becoming a reality in both homes and schools (McCain & Jukes, 2001; Thornburg, 2002). In 2004, it was reported that nearly 66% of U.S. households owned personal computers and the average number of computers in personal computer owning households was 1.5 (National Telecommunications and Information Administration & Economics and Statistics Administration, 2004). In 2002, 99% of all classrooms were reported to have access to a computer with internet access (National Center for Education Statistics, 2005). As the desire for digital communications and connectivity continues to increase, wireless communication networks have been designed to resolve these

issues of being unattached yet connected (Goodman, 2000). The evolution of portable computing, combined with advances in networking, is increasing the opportunity to be connected to information anytime, anywhere. As a result of advances in wireless connectivity, cellular phones are able to combine voice communication, e-mail, wireless internet access, and video and digital cameras (Gelsinger, 2004). Since these technological trends open the possibilities for connecting everyone anywhere, any place, any time through a wireless global networks connecting telephones, video, and portable computing devices, new opportunities for active learning are evolving. Access to portable, wireless laptop computers in classrooms provides a new means for students to become actively engaged in learning (Maine Center for Meaningful Engaged Learning & The Institute for the Integration of Technology Into Teaching and Learning, 2005). Wireless K-12 laptop programs are becoming prominent in schools across the United States. This access to laptops in the classroom on a one-to-one ratio is inspiring educators to create a more active learning environment. Environments where students can research and explore areas of interest, construct meaning and knowledge relative to the topic of interest, collaborate with others, and work on significant projects that have value beyond school become more of a reality (Barrios, 2004). Laptop initiatives, providing one-to-one access to computers and digital resources, incorporate opportunities for learning that enhance the delivery of instruction.

The impact of one-to-one computing projects is beginning to encompass change initiatives in schools across the United States (Pitler, Flynn, & Gaddy, 2004). The Maine Learning Technology Initiative (MLTI) provides an alternative medium for the delivery of instruction throughout the state. In seventh and eighth grade classrooms across Maine, technology is integrated into all content areas through the use of state-issued laptops distributed

to all seventh and eighth grade students (Maine Center for Meaningful Engaged Learning & The Institute for the Integration of Technology Into Teaching and Learning, 2005). In another example, school leaders in Henrico County, Virginia, began a one-to-one laptop initiative in 2001. Henrico's goal, similar to the MLTI, was to demonstrate a new paradigm for teaching and learning for the 21st century and to close the digital divide by providing a laptop with internet access to all middle school and high school students and staff. As a result of these initiatives, students are provided with resources to enhance learning with projects and resources unavailable to them previously. School leaders in District 54 in Schaumburg, Illinois, chose to distribute over 5,500 computers to every 4th, 5th, and 6th grader and teacher, based on the philosophy of enhancing the opportunities for students and adults to learn (Barrios et al., 2004). Educational personnel at Smokey Valley High School in Lindsborg, Kansas delivered 340 laptops to all high school students in August 2004, based on the expectation that there will be a resulting decrease in dropout rates, through the ability to provide 21<sup>st</sup> century skills to all students (Barrios). As a result of these one-to-one laptop initiatives and increased access to digital learning resources, new modes of instruction are evolving in the learning environment and creating new opportunities to focus on needed skills for the 21<sup>st</sup> century (National Center for Education Statistics, 2005).

Through laptop initiatives, access to internet resources, and application software, students are provided opportunities to develop problem solving skills, create projects and presentations through multimedia projects and videos to demonstrate learning. When these learning tools are available to meet the needs of the learner, and provide opportunities for students and teachers to learn together, positive changes in the way learning occurs can become a reality. The positive

impact of one-to-one initiatives will be dependent upon the ability of change leaders to incorporate the systemic changes required to create successful learning organizations.

### *Technological Change and Education*

Technological change is impacting society and the entire education system. The parallel growth of globalization, the continuing evolution of information technology, and the subsequent need in industry for trained and aware technology workers has created an underlying structure for the evolution of continuous learning in the information age (Kanter, 1999). Such rapid and continuous technological change is also affecting the role of educational professionals, particularly the change leader's role in the educational organization (TSSA Collaborative, 2001). In the global, high-tech world, change leaders develop learning organizations which are responsive to the needs of society. In the 21<sup>st</sup> century, the ability to understand and manage complex information and communicate efficiently is a basic skill for success. The change leader understands how access to information and the creation of knowledge can be harmonized through the use of technology to achieve the goals of the organization (Kanter).

The change leader understands the need to support the learning environment in order to develop new concepts and applications of technology that correlate with the goals of the organization. To enhance the future success of the organization, leaders of change also provide proper training and development to meet the demands of technology as a tool for learning, as well as opportunities for collaboration and connectedness (Kanter, 1999). A change leader sets the direction, defines the context, and helps produce coherence for the organization based on the needs for the future. Leaders guiding change within organizations begin with developing a shared vision with staff, and value the new learning required to create an efficient productive learning environment (Senge, et al, 1994; Kanter).

Traditional schools were not designed to incorporate the technological innovations that are creating new digital learning opportunities appropriate for the current generation of students (Toffler & Toffler, 1995). This generation of learners, born after 1982, is referred to as millennials. They have lived in a digital world since birth and are considered digital natives. The older generation consisting of the parents, teachers, and school leaders of this new generation are called digital immigrants (Prensky, 2001). The young digital natives have an expectation that information will be available to them at all times, whether they are at school, at home, or in public areas (Howe & Strauss, 2000); Prensky). This evolution of the digital environment and its dependence upon connectivity has produced a standard that contradicts the educational system of the past (Howe & Strauss; (Pitler et al., 2004). Riel and Becker (2000) described an effective learning environment for the millennials as one which provided opportunities for educators to continue to learn, promoted knowledge construction, allowed the development of instructional projects both with and without technology, used computer technology for teaching and learning, and integrated technology in meaningful ways in order to engage students in collaborative learning projects. The changes that are occurring in society as a result of the development of computational and communication technology have created increasing pressures for change leaders to provide a learning environment suited for the future of the millennials (Howe & Strauss). Change leaders consider the importance of providing a digital learning environment and understand that in order to do so there is a need to develop the technology proficiency of staff to address the needs of the digital native (ISTE Accreditation & Standards Committee, 2000).

Inspired and informed leadership is critical to the success of schools in this changing society. School leaders work in an era where children are expected to develop higher levels of intellectual and social skills for work, citizenship, and life-long learning in the 21st century

(James, 1996). In order to create schools that help all students learn and grow, educational leaders will be required to reinvent the system of schools to accommodate these new millennial expectations.

The expectations of the millennial learner require a more technology integrated approach to delivering instruction and developing skills needed for the future. Change leaders willingly provide an environment to address the needs of the millennial learner. In order to assist all students and staff become technology literate, this environment will: (1) prepare students to function in an information-based, internet-using society; (2) support students in becoming competent in using tools found in almost all work areas; and (3) provide an educational environment that is more effective and efficient (North Central Regional Educational Laboratory & Metiri Group, 2003). A digital environment which provides opportunities for students to work in collaborative team-learning settings appear to be better suited to the needs of the millenials (NCREL). The use of information and communication technology has also proven to be an effective motivator for students with specific learning needs and to accommodate various learning styles. Through distance learning opportunities, students can access course offerings and resources that otherwise would not be available. Distance education is becoming especially important in for students in remote settings because courses are less available due to lower population densities (NCREL). Addressing the needs of all students to meet the requirements of NCLB requires the change leader to implement systemic changes that utilize the integration of information and communication technology.

Possessing technology leadership skills, along with a combination of strategies and techniques general to all leadership, enhance a school leader's effectiveness. In creating a system of change, leaders of change understand the need for lifelong learning. They recognize that

professional development and the use of technology requires access to appropriate tools as well as knowledge on how to integrate rapidly changing technology into the learning environment (TSSA Collaborative, 2001). Kleiman (2000) emphasized the importance of the leader's role in creating systemic change with technology. He notes:

The central theme underlying all these myths is that while modern technology has great potential to enhance teaching and learning, turning that potential into reality on a large scale is a complex, multifaceted task. The key determinant of our success will not be the number of computers purchased or cables installed, but rather how we define educational visions, prepare and support teachers, design curriculum, address issues of equity, and respond to the rapidly changing world. As is always the case in efforts to improve K–12 education, simple, short-term solutions turn out to be illusions; long-term, carefully planned commitments are required. (p. 20)

In considering the impact of technology on the delivery of instruction in schools, Kleiman (2004) indicated that technology could influence what needs to be taught, how it could be taught, how classrooms could be structured and the roles and expectations of school leaders, teachers, students, and parents. School leaders who provide technology centered learning environments, focus on the needs of the digital culture, and acknowledge the need for goals that differ from the traditional school structures of the past.

Understanding the transformation of roles in learning is one of the most important facets of leadership for learning in the 21<sup>st</sup> century. As learning environments adapt to the resources provided through access to information through technology, one of the greatest shifts will be in the role student's play in their own education and in shaping their own learning environment. The role of school change leaders is to provide a learning environment where students exercise

their creative skills in producing their own learning, assisted by a teacher as a facilitator of learning (McGraw & Burdette, 2002). Implementing technology innovations in schools requires the use of basic components found in creating organizations that support lifelong learning for students, teachers, and the entire learning community (Senge, 1990).

### *Concepts of Change*

The theoretical framework for understanding the role of school leaders in preparing to implement change is outlined in this section of the literature review. This framework provides a critical component that aids in understanding change leaders and theories for implementing technology motivated systemic change in schools. Notions of the role of leadership in change and readiness for change are discussed, along with the importance of organizational learning in the change process. This section also provides a foundation for understanding the importance of relationships and collaboration and self to the process of adopting meaningful change in schools.

### *Leadership and Change*

Understanding the change process in order to lead and manage the systemic changes required for a 21st century learning environment is a prerequisite for change leaders (Fullan, 2003). Implementing systemic changes in schools requires a leader who can overcome barriers and cope with the disequilibrium that exists during the complex process of change (Fullan & Miles, 1992).

In order to gain insights regarding the implementation of change required for digital learners, leaders of change establish a shared approach to the goals of a common vision. Joyce and Showers (2002) indicated that in order to encourage others to implement a change initiative in schools the leader must make a commitment to provide opportunities to learn and practice the desired expectation, allow for shared planning and supportive collaboration for members of the

organization, and require collection of data to determine impact on student achievement. Being clear and explicit about how the results of a technology-rich environment will impact student achievement is an overriding goal of effective change leaders.

Making decisions based on a broad perspective, organizational vision, group goals, and system development are qualities of transformational leaders implementing organizational change. Burns (1978) introduced the concept of transformational leadership, describing it as not a set of specific behaviors but rather as a process by which "leaders and followers raise one another to higher levels of morality and motivation" (p. 20). As stated by Lashway, Mazzarella, and Grundy (1995), "Anything that leads to change is transformational" (p. 60). These writers suggested that behaviors attributed to transformational leaders in business and education include the following:

- Identifying and articulating an organizational vision.
- Fostering acceptance of group goals.
- Having high performance expectations.
- Providing appropriate models.
- Providing intellectual stimulation.
- Developing a strong school culture. (Lashway, Mazzarella, & Grundy, p. 60-62)

Fullan (2002) also studied the characteristics of successful business and school leaders and found five qualities that distinguish transformational leaders:

- A strong sense of moral purpose.
- An understanding of the dynamics of change.
- An emotional intelligence as they build relationships.

- A commitment to developing and sharing new knowledge.
- A capacity for coherence making while maintaining creativity. (p. 15)

There appears to be some level of agreement from these writers that the transformational leader understands the premise that the future is unknown and the only way to prepare for the future is to create capacity for change through organizational learning and collective leadership.

Recognizing shifts in the learning environment and guiding the organization to be responsive to change in positive ways are characteristics of transforming leaders. They consider the realities of the present and future environment and guide the organization to rethink its vision. Cooperrider, Whitney, and Stavros (2003) have analyzed change from an appreciative inquiry perspective. They described appreciative inquiry as a mechanism for change that incorporates the construction of the world as it is through the exclusive use of positive feelings about past and present capacities. Understanding changes which are occurring in the external environment and adapting beliefs and behavior to be compatible with those changes from a positive view provide the change leader with a method for redefining the process for achieving organizational goals. In motivating staff to incorporate change into their thinking, change leaders understand that positive inquiry assists in preparing an environment to change views on learning and teaching. Paradigm shifts in views of learning and teaching, such as the role of technology in student learning, curriculum issues, staff needs, student needs, societal demands, and state level policies, are significant to leaders of educational change and require a positive commitment from staff (Calabrese, 2002; (James, 1996).

In improving schools and making change, change leaders take the initiative, anticipate and recognize the need for change, and are proactive in their efforts to change and improve the capacity for learning. They anticipate the changing needs of staff, students, and society and take

the initiative to identify the appropriate direction for achieving the ultimate goals of the organization. They are "always testing the limits in an effort to change things that no one else believes can be changed" (Mazzarella & Grundy, 1989). The ability to challenge the status quo of the organization and explore various options to achieve the organization's ultimate vision for change opens avenues for leaders to assist others to accept modifications in learning (Blumberg, 1986). In order to address the true realities of a successful learning environment for the digital learner, leaders who focus the organization away from maintaining a system of education that does not meet those needs are able to assist in promoting effective change. Joiner (1987) indicated that change leaders had the skill to "access the reality of the present and determine the gaps that exist" between the traditional school environment and what's needed for students to be successful in the digital learning environment (p. 3-4). As advocates for a focus on the true needs of the digital learner, change oriented leaders make opportunities available for direct dialogue and discussion to assist others in realizing that the current way of operating will shortchange the organization and the future of the students. In order to transform thinking and challenge the status quo of the educational environment, change leaders question traditional procedures that no longer serve the needs of the students, staff, or community and obtain input on how to address changes needed to meet these needs (Becker, 1971). Challenging the status quo and the traditions of the past creates disequilibrium and the resulting feelings of discomfort in the organization call for the change leader's support and understanding in the process.

The desire to maintain the status quo is a natural behavior, and consequently, change is likely to be opposed when it is not fully understood. Change is typically avoided when it affects accepted procedures, violates behavioral norms, disrupts social relationships, or gives a feeling of inadequacy or incompetence (Fullan, 2002). Effective leaders of school change understand the

need to provide support for an organization to be conducive to effective change. They anticipate, recognize, and are proactive in furnishing the means for necessary training and resources to help others adapt to changes in the established methods of operation.

Addressing the issues related to providing an organization conducive to effective change requires leaders who are sincerely focused on developing the learning and growth of the entire community. Fullan (2001) discussed the fact that change is difficult for schools, and described the impact of many of the external forces that are demanding change in schools, such as standards based testing, the demands of the job market, and political forces demanding accountability for effective schools. All have individual demands. According to Fullan, in order for system transformation to occur it is important that all levels of a school organization (students, teachers, staff, administration, parents, and community) recognize the need for change and agree on how it should occur. According to Fullan (2003), system transformation requires effective leadership and an understanding that change is occurring at a rapid pace, affecting everyone. Fullan concluded that changing perspectives and perceptions is a necessary role of the change leader and emphasized the importance of developing an environment committed to developing a community of learners.

### *Readiness for Change*

Change leaders understand the complexity of preparing the environment for an acceptance of change. Lewin (1948) indicated that the acquisition of knowledge independently will have no impact on change if the individual's perception is not ready for the change process. In describing this change process, Lewin used the terms unfreezing, changing, and refreezing the individual's perception of reality. A change in perception of reality requires a change in the person's knowledge, beliefs, values, standards, emotional attachments, perceived needs, and real

needs. Unless recognition of the personal benefit for change occurs, referred to as an unfreezing of old perceptions, there will not be a readiness to make permanent change. Successful change appeared to be directly proportional to the degree of participation in the planning and implementation of change, in order to buy in to the process. Real change was defined by Lewin as a process that involves reeducation and changed thinking over time, referred to as refreezing perceptions. Senge (1990) also indicated that new learning and a changed view of reality are required to change existing mental models and develop a readiness for change. Schein (1992) integrated Lewin's work in examining organizational culture and learning. Schein indicated that organizational leaders were an important facet of the change process and must become immersed in the process in order for there to be readiness for change in the organization. Schein (1992) concluded that the organizational culture manifests itself through levels of realistic activity, as well as through the values, norms, and rules of behavior that are considered to be the status quo in the organization. Schein defined culture as:

A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems. (p. 12)

New organizational learning requires an understanding of existing organizational culture as well as an understanding of the anxiety produced when the existing culture is challenged. Schein described the change leader's role in preparing for change and organizational learning by stating,

It seems clear that the leaders of the future will need to be perpetual learners. This will require (1) new levels of perception and insight into the realities of the world and also into themselves; (2) extraordinary levels of motivation to go through the inevitable pain

of learning and change, especially in a world with looser boundaries in which one's own loyalties become more and more difficult to define; (3) the emotional strength to manage their own and others' anxiety as learning and change become more and more a way of life; (4) new skills in analyzing and changing cultural assumptions; (5) the willingness and ability to involve others and elicit their participation; and (6) the ability to learn the assumptions of a whole new organizational culture. (p. 391-392)

Understanding the strengths and assumptions of the entire culture is important in determining the potential readiness for change, and ultimately the likelihood of future success (Schein, 1992).

Preparing for change requires learning and participation from organizational members to determine how to confront the changes presented. Change leaders work to develop an understanding for the organizational culture and provide opportunities for new learning to establish a readiness for change. In order to sustain positive systemic change efforts, leaders of change commit to developing an organization where opportunities for lifelong learning become the norm. According to Schein, in order to create organizations that will be amenable to learning, leaders will need to involve the entire organization in the learning process.

### *Organizational Learning*

Organizational learning considers the interactions between the actions of individuals and the interactions of various organizational units such as students, staff, parents, community, and other related educational entities (Argyris, 2001). The change leader's understanding of organizational learning is directly related to the requirements for creating systemic change in schools. By identifying and addressing defensive routines that inhibit learning and change, leaders can provide avenues for individuals to acquire the new learning required for change (Argyris). The ability of school leaders to cultivate an environment for change is enriched

through an understanding of organizational learning. Implementing change through organizational learning requires change leaders to recognize that learning is the key construct in the understanding and explanation of human action, for individuals as well as for individuals within organizations (Argyris & Schon, 1978).

The models for explaining organizational learning developed by Argyris & Schon (1978) contain essential elements for leaders to understand the process of implementing change. The criteria for learning in Argyris & Schon's presentation of Model I and Model II theory-in-use included both the framing of an initiative as well as its implementation. For example, Argyris & Schon asked, "How do you know when you know something? When can you produce what you say you know?" (p. xii). These questions indicate the two levels of new learning, the awareness of truth and the active participation of putting it into practice. Governing variables, which were presented in the Model I and Model II theories, provide change leaders with a method to define a person's view of truth, which in turn directs the strategy for choosing a course of action. In order to produce a readiness for change, change leaders need both an understanding of the current perception of reality and the ability to provide an opportunity for new learning. These perceptions are addressed in the following descriptions of Model I and Model II theories in use.

*Model I theory in use.* Model I actions produced behaviors which were seen as defensive, inconsistent, incongruent, competitive, controlling, fearing vulnerability, manipulative, withholding of feelings, overly concerned about self and others, or under concerned about others. According to the authors, the Model I theory in use produced decreased effectiveness in organizational learning (Argyris & Schon, 1974).

*Model II theory in use.* Model II action strategies produced learning-oriented behaviors and norms that included trust, individuality, and open confrontation of difficult issues. The

consequences for learning produced a quality of life which was more positive than negative, and which included effective problem solving and decision-making. Model II theory in use produced increased long run effectiveness in organizational learning (Argyris & Schon, 1974).

The use of Model I and Model II was further expanded by Argyris (2004) in his study of validity and effectiveness of reasoning, and focused upon the concept of mind-set. According to Argyris, “Mind-set tells the actors how they are making sense of the world in which they exist and the validity of their sense making processes” (p. 1). His work provided insight into the challenges of organizational and individual management and learning as related to the use of either a productive or a defensive reasoning mind-set.

Productive reasoning was described as producing valid knowledge, using informed choices, and allowing others to view the reasoning behind choices (Argyris, 2004). The core of productive reasoning is purposeful vigilance designed to avoid unknowing deceit and to address the truth of the situation. Defensive reasoning was described as protection and defense of the group’s activities, based on the use of self-referential logic. Argyris concluded that defensive reasoning inhibited learning when learning was most needed, when existing routines were challenged. Defensive reasoning overwhelmed the attempt to use productive reasoning or develop a readiness to learn or change. Understanding Model I and Model II theories, as well as the traits of productive and defensive reasoning, assisted change leaders in determining the course of action for promoting learning and change in an organization (Argyris). In incorporating change in the organizational culture of schools, school leaders who are effective, identify the actions and perceptions that are productive in promoting needed change, as well as those that are seen as defensive and therefore inhibiting to the change process. By identifying and addressing

these traits, change leaders can promote an acceptance of the learning required for effective change action.

### *Relationship Building through Collaboration*

An individual's capacity to learn is the most important asset of an organization. "To lead change, the leader must believe without question that people are the most important asset of an organization" (Joiner, 1987, p. 2). Much of what is experienced as organizational learning is obtained through a process of sharing collective wisdom and creating opportunities for people to develop new perspectives and understanding through relationships and collaboration. According to Dyer (2001), "Relational leadership involves being attuned to, and in touch with, the intricate web of inter- and intra-relationships that influence an organization" (p. 28). The goal of the change leader is to improve both the efficiency and the effectiveness of the organization through collaboration and learning.

Recognizing that the people in the organization are its greatest resource and providing opportunities for growth through collaboration is an asset held by effective change leaders. Joyner (1987) identified three dimensions to developing relationships and collaboration in an organization. The first is the valuing of professional contributions of staff, the second is the leaders' ability to relate to people, and the third is fostering collaborative relationships.

Change leaders provide an environment that encourages and promotes collaborative relationships. Through the formation of teams, supporting team efforts, developing needed skills, and providing necessary resources, change leaders create an environment to prepare for systemic changes designed through a shared vision (Barnes, 1986). Leaders of change trust the strength of others and value their efforts and contributions in the realization of the organization's vision.

### *Self-efficacy and Change*

Understanding the need for self-efficacy is valuable to leaders in implementing systemic change. Self-efficacy is defined as the belief in one's abilities to organize and execute the sources of action required to manage perceived situations (Bandura, 1986). A change leader reflects self-efficacy with the belief in the ability to manage challenging environmental demands by taking adaptive action. Self-efficacy is regarded as a self-confident view of one's capability to deal with effects of change (Schwarzer & Scholz, 2000). A change leader understands the importance of individual behavior and the social context of the organization as influences on the change process (Oblinger & Verville, 1999).

Knowledge of an individual leader's strengths, talents, and personal instincts contributes to the process of moving forward in change initiatives. In order to excel as change leaders, it has become evident that discovering and refining one's strengths and the strengths of others allows the leader a greater capacity for change (Buckingham & Clifton, 2001). "The great organization must not only accommodate the fact that each employee is different, it must capitalize on these differences" (p. 5). Having opportunities for self-understanding and to enhance personal abilities is empowering to individuals in an organization and assists the leader to overcome the practices that inhibit the change process.

School organization members often seek to preserve traditional practices, and the result is a defensive response to innovations perceived as threatening (Wesley & Franks, 1994). Change leaders often consider a balanced method to understanding self-efficacious behavior and utilize various tools for helping individuals identify strengths and personalities. In designing the modes of operation for individuals, Kolbe (2001) discussed the importance of understanding the conative part of the mind, which was referred to as the instinct. If the instinct is threatened,

specific behaviors will occur. Understanding the individual and developing individualized learning plans will become more and more vital for educational change leaders as the digital tools to enhance learning and behavior evolve (Kolbe). Change leaders focused on learning and committed to understanding the organizational learning culture can assist staff, students and community to view the systemic changes related to learning and technology as a personal and professional responsibility (Wesley & Franks).

### *Summary*

This review of selected literature has explored some important elements necessary for understanding the change leader and the characteristics and behaviors that relate to leading effective change. Effective change leaders recognize the role of technology and the changing needs required to create a learning environment for the digital learner. The parallel between creating an atmosphere for lifelong learning and the call for developing learning organizations was evident from the literature reviewed. The relevance of lifelong learning and developing a capacity for change was indicated as important for leaders in preparing for change. According to the literature presented, systemic change capable of incorporating the changes required by society in the information age requires a new level of thinking for the organization of learning.

Technological changes have changed the means through which operations and work are performed, requiring new skills from the graduates of the educational system. A case was made for the need for educational systems to adapt to the technological changes required to achieve new skills. Effective school leaders embrace opportunities for change and provide alternative methods of delivering instruction through access to digital learning environments. The characteristics of the digital learner motivate change leaders to influence members of the educational community to adapt and adjust to the changes required to provide for the future

needs of society. The correlation between learning and organizational change was recognized as an important facet in the process of change. The ability to enhance learning through relationships and collaboration was presented as a mechanism for motivating change in the organization. Understanding the need for self-efficacy was acknowledged as providing change leaders with a tool for assisting others to prepare for change. The review of literature has indicated that in order for change to take place, new learning must occur (Argyris, 1999, Lewin, 1948, Schein, 1992, Senge, 1990). There were common threads found in the review of literature, which focused on the importance of a shared vision, the importance of learning and the importance of collaboration and networking to create a continual system of change. The most prevalent concept seemed to indicate that all change required new learning.

## Chapter Three

### *Methodology*

Qualitative studies grow out of the need for information from firsthand observations of the activities and interactions of participants (Patton, 2002). Selection of the research design for this study considered issues raised by Patton concerning the nature of inquiry and importance in determining what type of data should be collected in order to thoroughly address the research questions. Patton supported the concept that different information can be produced through varying the methods of research by stating, “the challenge is to find out which information is most needed and most useful in a given situation, and then to employ those methods best suited to producing the needed information” (p. 196). Erlandson, Skipper, Allen, and Harris (1993) substantiated the fact that some studies do not lend themselves well to numerical descriptions but instead are better designed to discover and show an intricate web of interrelated experiences and perceptions of reality and are better served by qualitative designs.

A number of school leaders in Kansas have demonstrated a readiness to accept leadership challenges and move ahead to create new models for 21<sup>st</sup> century learning. A study on the perceptions of school leaders who have continued participation in systemic change initiatives, regarding their perceptions on factors that motivated their readiness for change, how they prepared themselves to continue to move toward change, and what to do to assist their colleagues to understand the need for systemic change, lends itself to the collection of qualitative data, because it is a description of the individual perceptions, reactions, and actions of these participants that are of direct value to this study. For this reason, the research will be conducted using the qualitative paradigm to explore the perceptions of KATCL school leaders regarding how they prepared themselves to accept their role in creating systemic change in schools and

how they can assist others in the process. The qualitative design of this study is predicated on the fact that the design is emergent and will continue to develop after data collection begins (Patton, 2002). Consequently, this study is designed to answer three research questions:

1. What are the perceptions of school leaders involved in the process of systemic change regarding how they recognized the need to accept their role in creating systemic change in schools?
2. What experiences do school leaders involved in systemic change initiatives consider necessary to the development of their personal readiness for the leadership role that systemic change in schools requires?
3. What do school leaders involved in system reform initiatives perceive as the fundamental processes necessary in assisting their colleagues to recognize the need for systemic change?

#### *Research Participants*

Criteria used for participant selection focused on the intentional identification of persons who could best inform the research questions. This type of sampling is referred to as purposive sampling. Merriam (2001) described purposive sampling as the selection of participants who are capable of providing the most information and from whom, through discovery, understanding of, and insight into the phenomenon under study, the most can be learned. Purposeful sampling provides the researcher with an opportunity to derive in-depth understanding from information-rich cases on issues that are important to the purpose of the study (Patton, 2002).

The participants for this study were school leaders who were involved in the KATCL initiative. Approximately 130 school leaders participated in KATCL, which represented roughly 9.6% of the total in Kansas at the time of the study (Kansas State Department of Education,

2004b). Twelve teams of ten to twelve members participated in KATCL from various geographic regions across the state and were selected for participation in the program based on submission of an application to the Director of KAL-Tech and the KATCL support team. All KATCL teams contained members who were also graduates of the KAL-Tech initiative.

Information in this study was gathered from a selection of teams that participated in the KATCL initiative during the 2003-04 school year. As the total number of KATCL participants was quite large, reducing the pool of potential participants through purposive sampling to include from 40 to 50 school leaders became necessary. To ensure the data could be collected and analyzed within the time-frame of the study, four KATCL teams and twelve KATCL mentors were selected to participate. The director of KAL-Tech assisted the researcher in developing a list of participants for the study. Final determination of teams selected for study was based on district size and geographical location. The rationale for these selection criteria rested on the assumption that the size of the school district was likely to have an impact on how school leaders viewed the need for change and how they prepared themselves for the process.

Prior to data collection and regardless of data collection methods used, all participants described above were asked to sign a consent form (Appendix A). The consent form outlined the purpose of the research, indicated voluntary participation, assured confidentiality, and guaranteed the option to withdraw from participation at a later date (Sanders, 1994).

#### *Data Collection*

Gathering data using a variety of data collection techniques provided the researcher the opportunity to look at the phenomenon under study from alternative vantage points to determine both differences and similarities in the results (Erlandson et al., 1993). Since qualitative research methods were used to address the research questions in this study, detailed evidence was

gathered through a review of pertinent documents, interviews, and focus groups to elicit perceptions and rich descriptions from school leaders.

### *Document Review*

According to Erlandson et al. (1993) documents can be used as a reliable source of information concerning the attitudes, beliefs, and views of the world contained within an organization. This method of data collection can provide rich information which “does not react to the researcher’s presence or initiatives” (Erlandson et al.). Documents and artifacts collected from KATCL teams related to readings, meeting minutes, personal and team reflections, and model development assisted the researcher in designing questions for use in the interviews and focus groups of selected KATCL team members. Documentation required by the KATCL initiative and used for analysis in this study were collected from KATCL mentors, the Director of KAL-Tech, and the Kansas State Department of Education. In the context of this study, these documents provided a basis for investigating the perceptions of participants as they related to the research questions. A series of questions evolved from an analysis of the documents and formed the foundation of the interview and focus group questions.

### *Interviews*

Interviews are designed to obtain a specific type of information from the perspective of the participants (Patton, 2002). Given the emergent design of this research, the actual interview questions evolved after reviewing the documents from the KATCL initiative. The researcher developed a semi-structured interview guide, based on a review of the documents that provided specific direction for the interviews. The interview guide also provided consistency in procedure for collecting information from participants (Bryman, 2001). The interview guide provided the interviewer with the ability to build a conversation within the subject area and to work through

questions spontaneously to establish a conversational style while focusing on the predetermined framework, thus allowing a non-restrictive flow of information (Patton). The interviews were designed to provide multiple perspectives on the research questions by including an analysis of the data collected from a variety of perspectives and to develop holistic descriptions of experiences (Patton). The questions asked of the participants in this study were based on the three research questions and from information gathered from a review of the documents.

Of the total number of participants selected for this research, only the twelve KATCL team mentors were invited to participate in interviews. Individual interview times were scheduled after identification of the participants. Data collected from the KATCL mentor interviews were used to identify perceptions regarding how school leaders prepared themselves for their role in creating systemic change in schools, as well as identifying their perceptions on how to assist others in preparing for change.

Prior to their use in the study, interview questions were piloted with school leaders not involved in the study in order to validate their effectiveness. The interview question protocol is included in Appendix B. Individual interviews were conducted either by telephone, electronically, or face-to-face at mutually agreed upon times. For convenience purposes, participants were provided the option of participating in interviews using internet-based videoconferencing software. This form of interview provided the researcher access to data collection at a time most convenient to the interviewee (Cook, 2001).

Interviews lasted approximately one hour. Interview notes were taken during the interview process, and respondents had the opportunity for member checking, the process of reviewing and clarifying the information collected (Erlandson, et al., 1993). In addition to note

taking, interviews were tape recorded with the permission of the respondent. These tapes were transcribed and placed in an electronic database for analysis.

### *Focus Groups.*

A focus group is a discussion group with eight to twelve participants designed to provide the opportunity for a somewhat open, free flowing discussion, through the guidance of a facilitator (Morgan, 1998). Focus groups are most useful for getting at complex underlying notions in a setting where the sharing of experiences can help guide the other participants to greater awareness and participation. In a focus group setting, participants are able to hear each other's responses and make additional comments beyond their own original responses as they hear what other people have to say (Patton, 2002). The focus group interview protocol consisted of guided questions that explored KATCL school leaders' perceptions of their readiness to change. The focus group questions evolved after reviewing the documents from the KATCL initiative. The researcher used guided questions to provide specific direction for the focus groups and to provide consistency in procedure. The focus group questions and protocol are included in Appendix C. The focus group questions were pilot tested prior to their use with a group of educational leaders not involved in the study.

Of the total number of participants selected for this research, four KATCL teams were invited to participate in the focus groups in order to obtain data related to the research questions. Data collected from the KATCL team focus group sessions sought to identify perceptions regarding how school leaders prepared for their role in creating systemic change in schools, as well as identifying their perceptions of how to assist others in preparing for change.

Focus groups lasted approximately one hour and were conducted at the site selected by the KATCL mentor. Focus groups were conducted either face-to-face or electronically, using

video-conferencing software and web-cameras. All focus group sessions were tape recorded, transcribed, and entered into a database for analysis.

### *Data Analysis and Interpretation*

Data analysis was an ongoing, systematic and repeated process of searching and re-arranging information received from data sources to determine meaning and understanding (Bogdan & Biklen, 1998). In this qualitative research study the analysis of the data was done immediately following the first document reviewed, interview conducted, and focus group facilitated (Merriam, 2001). As individual pieces of information were gathered they provided insight, speculations, and tentative assumptions that led to a refinement and reformulation of questions.

Erlandson, et al. (1993) described data analysis as an interactive, two-part approach, the first part taking place at the research site, and the second occurring away from the site by the researcher, following the period of data collection. A period of reflection at the end of every data collection activity provided the researcher with an opportunity to work with the emerging data to further develop questions and probe for more information (Erlandson et al., 1993). As part of the emergent design process, a reflective journal was kept by the researcher, to assist in the process of constantly comparing field notes, interviews, focus groups, and information from the documents. The researcher included the reflective data as field study notes in support of the data analysis process.

Analysis of the content of documents is used in qualitative inquiry to consider the value of existing organizational or program documents, program publications, reports, and materials. Artifacts provide a source of information that increase knowledge and understanding about the phenomenon being studied (Patton, 2002). In this study, content analysis was used to review the

relevant documents likely to provide a rich source of information to complement other sources of data. As stated by Merriam (2001), “Tracking down leads, being open to new insights, and being sensitive to the data are the same whether the researcher is interviewing, observing, or analyzing documents” p.120. Once gathered in the same database, all study data were constantly compared and analyzed until findings presented themselves through inductive processes that lead to the development of grounded theory.

The constant comparative analysis process provided a means for deriving grounded theory from the analysis process of the study (Erlandson, et al., 1993). This method required that the data be unitized prior to analysis. According to Erlandson, et al.

Unitizing data may be described as disaggregating data into the smallest pieces of information that may stand alone as independent thoughts in the absence of additional information other than a broad understanding of the context. A unit of data is said to exist when there is but one idea found in a portion of content. (p. 117)

The unitized data were entered and stored into a Filemaker Pro database. The sorting features of the database were used to sift through, analyze, and compare the data until final themes began to emerge and conclusions could be formed (Bogdan & Biklen, 1998).

Once data from the document reviews, interviews, and focus groups were collected, and data were unitized and entered into the database, the constant comparative analysis method was used to examine the data. From these constant comparisons, categories and themes were identified to develop findings and conclusions (Merriam, 2001). Findings were interpreted through the application of the themes and categories derived from all data sources. As the data were analyzed and findings were developed, the value of incorporating a variety of processes

into the research design for insuring accuracy and truth in the data collection and analysis process was realized.

### *Trustworthiness*

In qualitative research the trustworthiness of the data is demonstrated through its truth value in relation to the purpose of the study and the consistency of procedures used (Erlandson et al., 1993). Trustworthiness is developed in a research study by using techniques that focus upon the concepts of credibility, confirmability, dependability, and transferability of information gleaned from the data. This study incorporated several methods to address issues of trustworthiness.

Credibility is assessed by determining whether the description developed through inquiry in a particular setting “rings true” for those persons who are members of that setting. Because these persons represent different constructed realities, a credible outcome is one that adequately represents both the areas in which these realities converge and the points on which they diverge (Erlandson et al., 1993). According to Erlandson et al., the best way to elicit the various and divergent views of reality that exist within the context of a study is to collect information about different events and relationships from different points of view. This study obtained data from multiple data sources, using multiple methods of collection. The use of multiple methods and sources allowed for data triangulation, which provided for the credibility of the information gathered. By reinforcing the data collection with referential materials which communicate a richer contextual understanding of the researcher’s analyses and interpretations, the researcher was able to provide a holistic view of the context (Erlandson et al.). The data collection process in this study included opportunities to ensure credibility through the access of media from

presentations made by team members and participants, audio taped interviews, video-conference archived documents of focus groups, as well as documents developed from team activities.

In order to ensure that the information being gathered from participants was understood properly, it was imperative that both the data and the interpretations obtained be verified by those persons, a process referred to as a member check (Erlandson et al., 1993). Member checking occurred throughout the research process. After each interview, a period was spent reviewing notes taken with participants to ensure that the intended meaning was accurate. This provided the participant the opportunity to clarify information for the researcher. Member checking of focus groups was approached in the same way as the interviews. The researcher summarized the notes and overall discussion with participants to ensure they agreed with the interpretation of the information. According to Lincoln & Guba (1985), member checking is used to provide confirmation that the participant's experience has been accurately recorded by the researcher.

Confirmability in a research study refers to the ability of data to be traced back to the original source (Erlandson et al., 1993). The process used in this study to provide a logical system to confirm the data was provided through the organization of information within an electronic database. The data was organized into FileMaker Pro using fields to indicate the source of the data, participant name, appropriate demographics, method of data collection, and the actual transcribed quote. This information provided the researcher with a method to continuously confirm and return to the source of information, as needed, through data analysis and reporting of findings.

Dependability refers to issues of consistency and stability within the research study. According to Erlandson et al. (1993), the identification and articulation of trackable variances attributable to error, reality shifts, and emerging insight ensures that data are dependable. The

researcher used the constant comparative method to observe instabilities in the data, and consider any reality shifts to determine dependability.

Transferability refers to the extent to which findings can be applied in other contexts (Erlandson et al., 1993). Since all observations are defined by the specific contexts in which they occur, thick description enables observers of other contexts to make tentative judgments about applicability of certain observations for their contexts and to form working hypotheses to guide practical inquiry in those contexts (Lincoln & Guba, 1985 p. 241). The researcher used thick description in describing the data in context, analyzing and reporting the findings with sufficient detail to create a scene in the reader's mind, to provide an understanding of the experience and enable judgments for future transferability.

Data from this study were collected from a sample of 28 school leaders who participated in the KATCL initiative. Selecting these participants allowed comparisons, or triangulations, of the individual's narratives of his or her experiences with those of other participants, to help ensure the trustworthiness of interpretation and reporting. In order to ensure that all data was reported in an unbiased fashion and appropriate conclusions had been made, rich descriptions and detailed information from the document review, interviews, and focus groups contribute to a verifiable audit trail of evidence in this study. As a strategy for supporting trustworthiness, member checking was conducted with participants to either confirm or disconfirm the interpretation of comments and verify the conclusions formed. The results of data collection are seen to be dependable when the research clearly states the purpose of the study, the data has been triangulated, and an audit trail has been provided (Merriam, 2001).

All materials including participant names, interview and focus group protocol forms, signed interview and focus group consent forms, an audio taped recording of each interview and

focus group, and the transcription documents were maintained in order to provide documentation for an audit of the research. This compilation of data was available for audit by an external auditor. The auditor reviewed the documents, data resource materials, transcripts, and data analysis procedures and determined that proper research standards had been followed.

## Chapter Four

### *Findings*

Chapter 4 is organized into four sections based on the study's findings related to school leaders' perceptions of the productive and defensive traits of change leaders towards change, and the conditions and attitudes related to the readiness of school leaders for systemic change in Kansas schools. The first three sections of Chapter 4 present findings from the perceptions of school leaders based on the concept of productive reasoning, defined as those units of data where the focus is on adding value to the learning environment (Argyris, 2004). The fourth section presents the findings centered on the view of defensive reasoning, described as those which describe the inhibitors to the processes of change (Argyris). Relying on theoretical perspectives is a preferred strategy in analyzing data (Yin, 2003).

The following discussion contains the results of this study, designed to identify leaders' perceptions of their concepts of the need for change in the learning process; the impact of dialogue, reading, and the activities experienced; the impact of these activities on their readiness to reconsider their views on learning and systemic change; and the processes they consider essential in supporting others to undergo a similar change in their thinking regarding systemic change and learning in Kansas schools. The first three segments of the following discussion present school leaders' perceptions of the productive characteristics, activities, and behaviors related to readiness for creating changes needed in the learning environment. The last section examines the school leaders' perceptions of the defensive characteristics, activities, and behaviors related to an environment conducive to change in learning. A summary of findings follows each section.

The review of research reported in Chapter 2 provided a framework for understanding the change leader, the importance of lifelong learning in providing an environment for change, how digital technologies have affected society and consequently are reshaping the way education is practiced, and the importance of a focus on learning, relationships, and collaboration in considering the implementation of systemic change in the learning environment. There is evidence that change leaders who focus on the systemic changes need to create a shared vision for learning in the 21<sup>st</sup> century, strive to design an environment for lifelong learning, and build an atmosphere for collaboration which contributes to encouraging an organizational structure conducive to systemic change (Fullan, 2001; Schein, 1992). The change leader's role contributes to providing conditions that are amenable to creating a positive learning environment for change.

The findings examined perceptions of school leaders who participated in the Kansas Alliance of 21<sup>st</sup> Century Leaders (KATCL) initiative. The KATCL initiative was designed as a follow-up activity for leaders who were previously involved in the KAL-Tech change initiative. Interview data were gathered from the twelve KATCL team mentors and focus group data were obtained from school leaders who represented four KATCL teams. The information collected from school leaders involved in the study was analyzed based on an inquiry process that focused upon three research questions. The first question asked, "What are the perceptions of school leaders involved in the process of systemic change regarding the need to accept their role in creating systemic change in schools?" The second question requested data relevant to the activities necessary to prepare for change by asking, "What experiences do school leaders involved in systemic change initiatives consider necessary to the development of their personal readiness for the leadership role that systemic change in schools requires?" The final question called for information regarding the processes necessary to assist others in acknowledging the

need for change by inquiring, “What do school leaders involved in system reform initiatives perceive as the fundamental processes necessary in assisting their colleagues to recognize the need for systemic change?” The school leaders’ beliefs and attitudes about the need for change in the learning process, and the impact of activities on their readiness to reconsider views on learning and systemic change, may impact the way other leaders prepare to implement change.

As discussed in Chapters 2 & 3, the framework for concepts of change and its application to the learning environment provided a structure to explore the realities in beliefs, attitudes, and values of school leaders toward their impressions of the need for change in learning, and the activities that contributed to their readiness for the change process. Moreover, a systems perspective theory emerged from the data that allowed the researcher to frame the organizational context of learning models from the Kansas Alliance of 21<sup>st</sup> Century Leaders into a model of change attributes for leaders as a means of presenting and explaining the findings.

The findings from this study and their subsequent analysis present a portrait of change leaders’ perceptions of their concepts of the need for change. The findings also described the activities they considered essential to prepare for change, and the process of facilitating others to prepare for systemic change in the learning process. These findings were based upon the data derived from the words of school leaders involved in the Kansas Alliance for 21<sup>st</sup> Century Leaders change initiative.

Argyris (2004) suggested that redefining leadership and followership, where followership has a more powerful role and uses productive reasoning and accountability for performance to encourage growth, could empower members of an organization to commit to change. Elimination of a leader’s over-responsible actions and a follower’s under-responsible actions and defensive reasoning, enables both parties to advance their individual capabilities and the capabilities of the

entire organization. The researcher used the terms productive reasoning and defensive reasoning in presenting findings.

*School Leaders' Perceptions of the Productive Characteristics, Activities, and Behaviors which Produce a Readiness for Change*

The researcher explored the conditions and attitudes that school leaders perceived to be the most related to the need to develop a readiness for change in Kansas schools. The researcher was able to describe characteristics, activities, and behaviors of school leaders that were identified as productive in creating change in the Kansas learning environment.

The following findings and their analysis describe school leaders' perceptions of the characteristics, activities, and behaviors that are productive in influencing change in the learning environment. This section begins with school leaders' perceptions of the impact of technology on learning. It then approaches perspectives on addressing student needs as digital learners, changing expectations of society, the leader's role in preparing for change, and new models for learning.

*Technology and Learning*

Technological change and the impact on subsequent change in the educational environment was addressed in the literature review and evolved in the data collected from mentor interviews and focus group participants. Findings indicated that changes influenced by technology were necessary to provide an appropriate learning environment for students.

Change oriented school leaders were able to see the positive impact of technology on the educational environment. Several school leaders described the importance of understanding the impact of technology as a supportive tool for changing the delivery of instruction. One school leader summarized the feelings of others by stating, "I think it's a pivotal tool in making things

happen. It gives teachers the right to open their window to the world and allows the teacher to facilitate that.” Still another leader stated:

I began to see that you could individualize and customize what you were doing for kids.

You didn’t have to worry about everyone doing page 25 questions 1 through 3 in order to understand if they knew the material or not. Technology has been transformational.

This leader further indicated that technology provides the opportunity to level the playing field for students and stated:

So the technology served as the catalyst for that transformation and it also allowed for those kids not only to change and impact their relationships but it also began to level the playing field for special education kids that previously fell through the cracks.

In reflecting on the changes in attitude regarding the role of technology in education, a principal offered the following perspective:

I think that our attitude about technology has changed. You know when you have a big change it kind of sways too far and I think it’s starting to come back. I can remember years ago when people said, “Oh, computers will never take the place of a teacher,” and that’s how they were thinking, and now everyone knows it’s not going to take the place of a teacher but it’s a part of the teaching. There is an acceptance level. There has been an attitude change. They feel that it can be helpful to me. When I think about it now, we don’t buy texts. The whole process in teaching kids has changed. We are now looking at our whole technology needs.

Another described the role of technology in addressing the ability of students to take responsibility for their own learning:

I do believe it will be normal in high school in 10 years. I think it's something we need to give kids. It opens up so many possibilities for them, allows them to take responsibility for their own education. It makes information timelier, and makes it more meaningful."

One school leader described the impact of technology as providing opportunities for connecting rural school districts and creating innovative solutions for economic struggles:

I think we have the technology today. We have the ability to change through our certifications systems to allow for a small rural community who wants to keep a high school to say, "Okay, here's the amount of money you have. Make it work!" I think they can make it work, if you give the right people a certain amount of resources to take the amount of money they have and make it work.

Commenting on the ability to address needs of rural students using technology, another stated, "We have lagged behind in providing the things that need to happen to enable all of our kids to have the same opportunities as the kids who live in non-rural areas. It can be done now with technology."

Technological changes have produced a learning context where student needs are different than in the past. Change leaders are aware of this and are committed to creating an environment where students have continued access to technology as a tool for learning.

### *The Digital Learner*

Understanding that the needs of students are changing was a trait of change leaders who sought systemic change in schools. The change leaders in this study were aware of these changes from a variety of perspectives. Comments from these leaders focused on the need for change in the delivery of instruction, understanding the impact of digital resources on student learning,

changing instruction to meet the needs of the digital learner, and the importance of providing access to digital resources for project based learning activities.

In providing a general introduction to the digital needs of students, a principal suggested the clear impact of technology on student needs and the subsequent need for a change in the way that learning is prepared for in schools:

I think the way we raise our kids now is just so different than years ago but yet we're still teaching in the same way. When they're not in school, technology is the focus of their every minute, yet when they're in school we've got them sitting in lectures and not often integrating technology.

Another participant indicated the importance of understanding the changing needs of students, stating, "We've got to get better at understanding the digital kid and what that means. How do we encourage instead of discourage the multitasking and the way they think?" Still another leader, in addressing the need to shift adult thinking to be more in line with the reality of the students, said:

I think the whole society is different today. A classic case, which was a rude awakening for me, was when my son was doing some drama in middle school. He was creating a pantomime to demonstrate rolling a car window down. His movement was to push the button for the window to go down. I hadn't even thought of pushing the button to roll the car window down. I still think about rolling the window down as cranking the window down, even though I haven't done that in probably 10 years, I still think that way. I realized their thought processes are different than ours.

Several school leaders discussed the importance of thinking outside the box when adjusting for the future needs of students. One leader described this by saying, "All of our tools

are yesterday's tools, so when we deal with systemic change and are dealing with how we envision it, most of the tools aren't here yet." Another leader agreed by stating, "We have to be careful we're not just tweaking the old system. We need to go back and redesign and re-imagine what we are doing."

In addressing the importance of designing an educational system to meet the needs of all students, several leaders focused upon meeting the needs of the information age:

I think there are a number of structures and a number of things in our current educational system that really were designed for another time. They stand in the way of us really truly making a decision and bringing forth the belief that we need to do this. We need to develop an educational system that is designed for meeting the needs of every child.

Another leader commented on the inadequacy of schools for today. "We can't have schools in an industrial age model and expect them to survive in a digital age."

Several school leaders emphasized the importance of considering the possibilities for learning with ubiquitous access to technology and digital projects for student learning. One leader provided the perspective, "We all need to understand that learning can take place anytime, anyplace. That's not the current system we have. If we understand that, open our eyes to the opportunities for learning provided with ubiquitous access to technology, we may be able to understand the possibilities." Another leader provided the following description, "I see what my kids do at home and it boggles my mind. They are digital natives; you and I are digital immigrants. Kids learn differently now. We have to understand that fact." In considering the preparation of students for the digital future, a principal expressed concern by sharing, "The careers that these kids will have are changing, like our kindergarteners now, we don't even know the jobs that they are going to have, and we're preparing them for the way things used to be." In

addition to preparing students for the future, equities in access to digital resources for some students were a concern to school leaders:

We need to level the playing field for our students. Here we have 30% Hispanic population and they don't have the technology available at home. I deal with kids who go home and don't have anyone that speaks English to help them with homework. This is where we can use technology to level the playing field for our kids.

Another leader agreed. "Sometimes we assume that kids know how to do digital projects. I think that's exactly true that the inequities are hard for students to deal with, even more so in the elementary level."

The changing needs of students brought about by advances in technology are creating additional needs for changes to the learning environment. Addressing changes required for an effective learning environment is a priority for change leaders in order to ensure that students are provided with a digital environment to succeed in the future.

### *Expectations for Learning*

The expectations for student performance and the requirements for students to be successful in society are changing. The structure of business has continued to adapt to changes brought on by technology and global forces, which require new job skills for workers. National legislation addresses the need for schools to adopt changes to meet the future needs of society and ensure that all students are successful. These changing expectations were evidenced in the findings from data collected from change leaders.

Changing the educational environment to appropriately adapt to the expectations of society and the changing job skills required was referenced by several participants. One leader shared his belief that the system of education needed to address the needs of business:

The culture of business has continued to change at a much faster rate than the schools have. We're in a point in time now that the political forces are at work that see that the nature of the product we are turning out in schools does not fit with what the culture at large needs, to continue to be competitive in the world.

Another participant stated, "It is becoming ever more critical every year, for all of us in education to look at the statistics and listen to the stories. Society is changing, so schools need to change."

Concern with the fact that schools haven't changed to meet the needs of society was further addressed by statements that the demands on graduates have changed, even though schools are much the same as they were in the past. One leader explained:

We don't need them all behaving in the same manner and doing a small task. We need them to think much more globally. We need our students to be able to be much more comprehensive in their thinking and they need to be able to work together. They need to be able to communicate and be able to think in a critical way. That wasn't part of the plan of schools before.

In looking at the need to change schools, still another stressed:

I think it's really important the longer you are in this business of schooling the more it becomes evident that we need to do business differently. We need to strongly look at how we do business and what's best for kids.

The expectations and requirements of NCLB have produced the opportunity to create systemic changes to meet all students' needs. One participant stated, "It's going to be tougher to meet the needs of all students in some ways because of NCLB, but may also be easier, because the template is there." Yet another commented on the expectations for change:

I do think we have to change the way we're teaching our kids. They are not the same kinds of kids and we are adding an additional population of kids that we didn't educate 20 years ago and we are also setting expectations though NCLB, saying they all need to be proficient. So the bar is so much higher than it was before. Schools today are more complex than they have ever been because we have greater numbers of children coming to us with greater learning needs, behavioral, social, you name it, they're coming. Our mandate, with NCLB, is to provide the best educational opportunity we can, and I think that calls for new ways of thinking.

Another perspective on the requirements for change is shown by the comment, "I am a real believer of what's happening with No Child Left Behind, as a catalyst for change"

Expectations and challenges for creating new learning environments were summarized in the comment:

This is not a time in education for the faint of heart. We have tremendous challenges, tremendous responsibilities, the mandates and obligations of No Child Left Behind. It's so much more demanding than ever, but it will also provide greater opportunities for us.

Changing expectations require school leaders to provide a learning environment which is appropriate to meet the needs of all students and to make available tools to assist in the development of skills for future success. Change leaders accept the challenge of these expectations, and assume the role to prepare the learning environment for needed change.

#### *Essential Roles for Leaders of Learning*

The school leader's role is important in providing an environment which is conducive to change. The findings revealed that change leaders perceive creating a common vision, building

trust and confidence, encouraging and stimulating new ideas, and allowing for growth and development were important in preparing staff for change.

Creating a common vision and supporting others to grow was considered an important leadership role in preparing for systemic change. In addressing the key factors for leadership, one superintendent involved in the study commented, “Probably the key thing that I work on is to make others aware and help people to see the common vision that we need to be working toward, and the tools we need to use to educate every student.” The importance of empowering others and building confidence and trust was addressed by another who stated:

I think building trust and confidence is important. I think staff members have to feel like it’s okay to risk and it’s okay to try something that hasn’t been done before. I think that makes the district role certainly one of support and again in keeping that vision out there in whatever it is we’re trying to do. And not putting so many constraints on folks that it becomes difficult to achieve.

In addressing the ability to get staff involved in change, one leader commented, “I feel it’s important to be an instructional leader as well as a team player. I involve my entire staff in decision making, and we look at the things that are important for learning. It’s really important to get the buy-in from the team.” Helping others to believe in themselves and question what’s right for students is important for change. In summarizing this perspective, one participant reflected:

I think I help others to see by letting them believe that they have the power within themselves and it’s okay to know that you don’t know. Even if you don’t know what you don’t know, if you start to ask questions and look for answers to learn, it can happen. Senge says true change happens one intentional conversation at a time.

In addressing leadership needs for implementing change in the 21<sup>st</sup> century, participants discussed the importance of developing 21<sup>st</sup> century skills and promoting better ways of doing things. Several leaders expressed the importance of sharing new ideas for doing things. One leader stated, “At this point my role is critical. I have to be willing to throw the ideas out there and continue to educate those in our community to see what works to connect, adapt, and adopt for what needs to be done.” Another said, “I am an idea person. I’m always looking for ways to do things better, questioning why we’ve done things the way we have.” The importance of openness, understanding actual needs, and being a model for change were stressed in the comment:

Just being open to ideas and open to change, I guess, keeping a pulse on what’s going on. It’s important for me to be out seeing what’s going on in the buildings. I work with students an hour a week and it gives me a much better sense of what is needed and how my decisions affect them. I think it’s important to model for staff that change is important and that it takes more than just what is happening in the classroom.

Belief in the ability to do things differently was viewed as critical to forward movement by another district leader, who stated:

It’s like a perpetual self-fulfilling prophecy. You believe there are things that can be done differently, so you go out and find ways to do them differently, so then you believe they can be done differently, so you do things differently.”

A number of participants equated the leadership role in the change process to planting seeds and watching them grow into change. One leader stated, “Change is an organic process. We need to do what we can to plant the seed, be patient, and hopefully they will grow and give

us personal satisfaction as they do.” Another said, “You plant the seed in a non-threatening way and they will grow.” It was additionally commented that discomfort was part of growth:

It’s important to nurture and incubate the readiness and waiting for the readiness to grow. To do that you’ve got to be willing to put people in an uncomfortable position, but not so uncomfortable that they shut down. You need to challenge their beliefs and mental models so they are asking themselves questions and doing reflective thinking. If you go too far too fast they shut down and rely on their old mental models.

To summarize thoughts on seeds of change, one leader said, “As a leader you have to recognize that tipping point of opportunity, to make the change when the readiness is there. You need to be able to see it evolve and grow.”

Many participants felt that it was the change leader’s role to help staff understand the role of technology as a tool to help them work “smarter not harder,” and that it was important to provide opportunities and new experiences for change. As one leader stated, “You have to provide opportunities. They may not all respond in the same way, but making the opportunities available to them is huge.” Another expressed the importance of selling change as an experience, stating:

They have to be experiences; we have to sell experiences to our staff. I refer to Tom Peters’ book *Re-imagine* and the Starbucks philosophy of selling the experience. As leaders, we need to think about what can we do to make change an experience. They have to see it, feel it, and want it.

A prevailing response from change leaders was that schools need to be restructured to do what’s best for learners. Most leaders indicated that the strengths of the leader had a lot to do

with developing a readiness for change. One principal addressed the importance of the leader in providing forward thinking for staff, stating:

As leaders we need to recognize and lead our teachers as to what's the best way to educate and engage kids. It's our job to keep them inspired and excited because when they are in the classroom and they're teaching, they don't have time to continually keep looking ahead and we're kind of that person to help them move on.

Continual planning and looking toward the future were viewed as important to the strength of the change leader role, as one mentor stated:

It's important to keep the message out there to our folks that future planning has to occur all the time. We have to be there ahead of the herd trying to figure out what we're trying to do and where we're trying to go.

Another commented on helping others grow, saying, "As it evolves and you have discussions and you know it is making a difference and as I see others clarify their thinking and hear what others are doing, I know that it is working."

The role of leadership in preparing for change requires shared commitment to the vision, trust and confidence from the staff to take risks and accept change; encouragement to seek and implement new ideas; and patience and understanding as growth is nurtured. Change leaders accept their role in preparing the environment for change. They are committed to the personal qualities required for leaders to formulate new models for learning and to establish an environment where staff finds it advantageous to change.

### *Models for Change*

Models for change were viewed as necessary in order to pursue environments for change. The Kansas Alliance of 21st Century Leaders (KATCL) initiative was designed to provide an

opportunity to design a school environment with a focus on the 21st Century learner. Participants in the interviews and focus groups were involved in designing models for change with a focus on learning. The findings in this study indicated that models for change which focused on achievement rather than time were most appropriate to prepare students for success.

Change leaders in the study discussed the value of envisioning models for change to help develop new mental models for the learning environment. A model which focused on student achievement rather than time was the most prevalent attribute in the development of models for change. Providing time for self-directed project-based learning and collaboration was also a strong consideration for change prototypes. In addressing the importance of achievement one leader stated, “One of the things that was important in our group was to have flexibility in the timeframe and to measure learning.”

Another KATCL team mentor indicated that the physical structure of facilities could contribute to envisioning new environments for learning:

One of the things we ran into with our group was to help this mental model of what we call school. We looked at some of the physical designs of schools. We looked at one in Tasmania, Australia, where they had a school that burned down so they were able to rebuild the school for what they determined as the needs of the 21st century. The physical design of the school included the ubiquitous technology that needed to be there and it was designed for collaborative meeting spaces for small groups.

Another model for change designed around project-based learning at the high school level and self-directed learning for students, was described by the team mentor:

We felt the need to develop a more project based learning system at the high school, which is where we need change radically. Our team had a skit and acted out the parts. We

wanted to show what it would look like. We felt it was important for kids to become more empowered and more in control of their future. In our model we envisioned a piece of software where the students were able to have a dynamic master schedule with one person who was responsible for maintaining it. Ultimately the students had to demonstrate proficiency in all standards, which would be carefully delineated all across the curriculum. They could do it in several ways. They could test out of it or they could test out of parts of it, and take mini courses in areas they didn't understand. They could get tutoring in specific areas or they could take an entire course if they chose to. The requirement was that they had to show proficiency and they had to demonstrate, through application standards, in a project from many different curriculum areas.

Further explanation was also provided of a hypothetical student engaged in learning in the model high school described above:

In our example, we used a hypothetical student who was interested in the guitar. He demonstrated the math skills by the design of guitar and demonstrated presentation/performance skills by playing the Star Spangled Banner in a Jimmy Hendrix version at the football game. He had to research the history of the guitar, and of course his English had to be correct in everything he wrote. His physical activity was demonstrated through his choreography. In our model high school, the student was always working on projects and developing proficiencies in standards in their master schedule. They were required to assign themselves goal oriented projects to meet proficiencies. They were responsible for meeting with available resources and meeting together as needed on their project. They might be meeting with a professional online or

might go out and interview someone. They had a home room to meet with a facilitating teacher to review progress and assist with resources.

Several mentors indicated that the models developed through the KATCL initiative evolved into charter schools. In addressing future implementation of the previous model the team leader indicated:

This model became the evolution of our charter school, where we are beginning the process in 7<sup>th</sup> and 8<sup>th</sup> grade. The principal sees the school as one that will prepare students for the kind of high school we are envisioning. I don't think you can just drop kids into that kind of environment after you've spent eight years teaching them to sit up straight and do what they're told. We need to train them to think.

Several other models evolved into charter schools, as presented by another leader:

One of the focuses on the charter school was a four day week for students and the fifth day for staff development, field trips, and other activities. We need a system which allows us to have quality time for professional learning.

Restructuring the current system also resulted from visualizing new models, as another mentor described:

The staff is really interested in moving to a different time frame. We are looking at seven, six-week terms with teachers teaching the same number of days but we're going to provide instruction year round. This will be different schedules and with different tracks.

We are planning on a schedule with four days for students and five days for teachers.

Still another, indicated new ideas for structuring time have evolved from discussions and changed thinking, sharing:

I was having an interesting conversation about the number of hours we have in a school year. We were trying to do some things with some collaborative learning groups in our school district and our high school staff said, “We will give up a whole planning period if we can have school start later and do collaborative planning work together.” So, every morning of the school year, we will lose 25 minutes of instruction every day. That’s a problem right now, but we are going to define a lot of that time as staff development and work out enough time to make our school year fit into the constraints of the system.

Imagining a system which focuses on learning rather than seat time, one mentor shared a model for contracting teachers for student achievement rather than nine months of teaching:

The one idea that is floating around out there is that if a teacher were told when students know and can do what’s expected, they can move on. There will be students at all levels. Some will be able to move on quickly, some will need more time, but think about that. If a teacher were also told that when you’re done with these students, you’re done as well, and you can move on to other things, but you will be contracted to your job based on the outcomes. The state board has already said we can account for a Carnegie unit once the district is satisfied that the student understands the content. So, if that takes one day or six weeks you can count it and make the decision for meeting the requirements locally. This model has the potential to change the responsibility level for learning.

The philosophy behind developing models for change rests on the belief that the traditional school structure does not prepare every child for success, and does not allow all children to learn. In order to provide for the needs of all students, it is no longer feasible to continue to use the same models for learning. By fostering opportunities for designing alternative structures for skills needed in the 21<sup>st</sup> century, change leaders realize a need to gain the insight to

carry the model back to their existing schools to begin the change process. Change leaders participating in this study are dedicated to further provide a structure to implement some form of change derived from the models proposed, to discover a learning environment suitable for all.

### *Summary*

Change leaders viewed the rapid changes in technology as having an impact on the needs of the students, and saw the need for addressing the changing needs in the learning environment. Expectations for learning are changing with the accountability requirements imposed by the NCLB legislation and the need for technology skills in the workplace provides opportunities to make changes in the structure of learning. The role of the leader in creating this new learning environment requires common vision, support, and opportunities for personal growth according to the data collected. The change leaders participating in this study distinguish themselves as important catalysts in the change process and view a focus on student achievement rather than time as paramount in creating new models for learning.

### *School Leaders' Perceptions of the Productive Characteristics, Activities, and Behaviors Related to Developing Readiness for Systemic Change*

The following findings and their analysis describe change leaders' perceptions of the characteristics, activities, and behaviors related to the importance of building relationships in preparation for systemic change. School leaders had a variety of opinions regarding the importance of their involvement in The Kansas Academy for Leadership in Technology (KAL-Tech), a statewide initiative aimed at systemic change. KAL-Tech is designed to address the major issues involved in creating and strengthening effective leadership for the future of Kansas schools. Through involvement in KAL-Tech teams, participants meet in six monthly sessions with peers in a forum for continuous learning, to develop a plan designed to integrate

instructional technology into their existing school improvement plan. Engaging in this change initiative allowed the development of relationships and provided time for collaboration on issues related to creating an environment for change. Many of their comments were grounded in the rapidly changing cultural context brought about by advances in technology and involvement in state level change initiatives. Discussions focusing on needed change in schools evolved through engagement in KAL-Tech teams. Findings indicated that leaders acquired the motivation and strength to tackle needed change from the relationships and collaborative dialogue in the KAL-Tech process. The findings also revealed that change leaders involved in initiatives such as KAL-Tech came away with a systems approach to their thinking.

### *Engaging in Change*

By being involved in a statewide initiative such as KAL-Tech, participants recognized personal and professional areas of growth. The findings revealed that participating in KAL-Tech was important to the personal growth and development of change leaders, and stimulated their commitment to continue the process.

Participants commented that their involvement in KAL-Tech was instrumental in validating their views on the need for systemic change. The majority indicated that KAL-Tech was one of the most powerful professional growth activities they had experienced. Several participants, who were in the initial mentor training, recalled the growth process that occurred in starting the process. One leader stated:

The first time we were at the KAL-Tech mentor retreat and we began to discuss what kind of leadership training we would be implementing, and how the change would come about, I remember a distinct split between the haves (of technology) that said, no, we need to do something more and the have-nots who said, I don't get the picture! I don't

even understand the picture! It was almost like they were angry and didn't want to be a part of it. That was a very defining moment, because that's when KAL-Tech became the catalyst for change, instead of just the same old event of leaders getting together and talking about what they have.

Numerous participants mentioned that the premise of KAL-Tech was to inspire leadership in a technology rich environment. One principal stated, "When I first joined I expected toys. Then I found out it's not about technology, but leadership and change in a technology-rich environment. Our first session was on September 11<sup>th</sup>, which really triggered our thinking about change." KAL-Tech was perceived by all leaders as a catalyst for further change in their districts. One participant stated:

I'm not sure we would have done some of the things that we are doing in the district, such as Blackboard, and other new resources we have exposed our staff to. We continue to do multiple workshops in the summer, encourage them to be involved in state-wide initiatives, and we are also considering a laptop initiative.

Still another indicated that conversations are different at the leadership level across the state as a result of KAL-Tech:

It's almost like it gives you permission to have conversations about the what ifs and to imagine bigger and better than what you thought it could be . . . and I don't know that we would have had those conversations if it weren't for KAL-Tech.

Referring to changes in dialogue and discussions within districts, another superintendent stated, "I think one of the best things I did was to make sure that every administrator in our district had an opportunity to go through it and that has changed the level of conversation in our district. It's been very helpful." Having the opportunity to collaborate with others who are open-minded and

initiators of change was considered invaluable by all participants. An elementary principal verified the importance of involvement in change initiatives, stating:

I think that the people I am around now in the Kansas Distributive Leadership Academy (KDLA), KAL-Tech, and all the things that I'm involved in, go along with my philosophy, and how I believe. It strengthens my belief in what leadership should look like.

The value of in-depth conversations and a common language for needed change was a common response. One leader summarized the feelings with the statement:

I think what contributes to the possibility for systemic change is the fact that conversations have gone on and at least 1,000 administrators across the state have gone through KAL-Tech and have discussed what needs to happen. They have spent 4-6 months having those discussions about something other than what we've always talked about, like ball games on Fridays, bus problems, personnel issues, and on through the list. Previously the culture of school leaders did not allow us to have this type of dialogue.

Participation in KAL-Tech in preparing for change was viewed as providing opportunities for personal growth, assisting in providing a commitment to a vision for change, and encouraging the dialogues and discussions needed to gain the support and courage to move forward. Change leaders accept their role in changing the culture of schools. They value the continued growth that strengthens beliefs and helps them motivate others to make changes necessary for the future of schools.

### *Motivating Change*

The personal growth and motivation obtained from involvement in change initiatives emanated from the data collected from mentor interviews and focus group participants. Findings

specified that school leaders valued the motivation to provide an appropriate learning environment for the 21<sup>st</sup> century through continued discussions and learning. The motivation resulting from personal growth and the desire to make a difference in the learning environment for the 21<sup>st</sup> century was continually reinforced by participants. “I’ve never gone to a KAL-Tech experience without walking away and thinking, ‘Wow!’” said one district leader. Another said, “It’s been great to be a part of the whole process, thinking and rethinking. It’s exciting and energizing to be a part of it. I love it!” One elementary principal reflected on the impact of his personal growth and change stating:

I have read books that I would never had taken the opportunity to read. I have applied the readings and that has lead to change in the district. It is true, the fact that my own growth and change has led to change in district.”

The rich dialogue and opportunities to interact with other school leaders led one superintendent to say:

Really, it has been one of the best personal and professional things that I ever did. The first group I mentored had members from six different districts and provided such rich dialogue and opportunities, almost unprecedented, in administrative training. I think the interesting thing was that, as mentors, we learned as much or more as the other folks we were with. It just opened some avenues and it’s very comfortable to know we are all on the same level, working to think about what’s best for education and how this technology fits in. It was a very edifying experience.

In responding to activities important for change, still another participant commented:

I'd have to go back to all the materials we've used. They will continue on and they will continue to be our model, especially the 21st Century initiative, and all those good materials. McCrel has also been an excellent resource. They provide valuable support.

Several participants expressed the importance of continuing the conversations, either through their own district dialogue or as KAL-Tech mentors. One superintendent stated, "I naturally gravitate to new learning. This is my fourth time as a mentor, and every time a new nuance grows in my head. I even challenge some of these discussions! The whole process has really engaged my reflective thinking." Another school leader concurred with the positive experience of continued involvement by saying:

My experience has been very positive and I have grown from my involvement. We're doing the same thing with our own staff on a voluntary basis. I have about ten staff involved in a district wide initiative similar to KAL-Tech. They receive a Palm handheld and get to attend the Technology Learning Symposium. We've met 4-5 times and have discussions on the need for change.

The importance of expanding the process into other areas was expressed, as one superintendent commented, "One of the things I would like to see is for the KAL-Tech experience to happen more at the local level, especially in small, rural districts. The community piece is important, as those mental models need to be changed." Change initiatives like KAL-Tech have continued to impact discussions for change, as one leader summarized:

I can tell who has been to KAL-Tech without asking, because I can see a difference in the way they communicate, a difference in the way they talk about what's going on in their district, and what their teachers are doing.

Personal growth and opportunities for new learning were viewed as empowering to leaders. The motivations acquired created a desire to inspire others to move forward in changing the learning environment. Change leaders were motivated to challenge the mental models of others and open opportunities within the learning community to develop relationships and build the capacity for change.

### *Collective Change*

Building new relationships, gaining new knowledge, and trusting others are important to providing an environment for change. Collaboration is necessary to enable changes in the systems of schools and provide opportunities for learners to grow together. The change leaders in this study were aware of the value of providing time for collaboration so there could be discussions in order to develop the change in thinking required to meet the needs of new millennium learners. Results from the data indicated that in moving forward in changing the learning environment, the support and strength from new relationships and collaboration with other leaders encouraged change leaders to envision new avenues for change.

School leaders discussed the importance of collaboration and relationships in building a capacity for change. “Organizations are about relationships and you have to create relationships and trust with the people before they will accept your ideas as their own. Once relationships are created, people are much more at ease in attempting change,” said one school leader.

The value gained from collaborating outside of the district was seen as important for school leaders. In supporting this contention one principal said, “It’s important to get out of the district and visit with other colleagues and collaborate and have the opportunity to see the big picture rather than be isolated.” At another level, a superintendent talked about connecting with area districts to share programs and resources:

It (KATCL) has really firmed up some of our relationships. For example, I had a meeting the other day, and was never able to get the neighboring superintendent to come to my charter school meetings, but he came, so it gave us the chance to talk about how we can share programs and become more connected.

Comments from leaders focused on the importance of getting others involved in conversations about learning and providing a network of support for needed change. Several participants emphasized the importance of collaboration in order to gain the courage to try new things:

If we really want change to occur, then we have to talk about it. We can't just go out and decide we're going to do it on our own. You have to get people involved, let them see the need, encourage them to take the risk, try something new, and not worry about failure."

Another superintendent commented, "My philosophy was to build cadres of support so people can network and support others. Once you see change evolve and grow you can see opportunities for change." Commenting on the importance of connecting to enhance learning, one high school principal said:

One of the best things that we can do as professionals is to take time to sit down together with people who have a compassion to serve kids and serve parents, to think that perhaps there is a better way. Perhaps if we got together and shared some of our resources we could get something done to help students learn. That is exciting, it's rejuvenating, and it gives you the energy to go back to your building and try to do some things.

A number of school leaders felt that successful change occurred as a result of collaboration and having time to discuss the needs of students. Building time and collaboration into the schedule provided opportunities that allowed for individualizing instruction, according to an elementary principal:

I think collaboration is a benefit that we see. I know with my K-5 staff we have collaboration time built in to our schedule and the ideas and discussions that come out of the collaboration time is just wonderful. I think that's why we're successful with what we are doing with students, because we are actually individualizing for students. We're really looking at what's best for students because we are able to talk about it and help one another.

In commenting on how professional learning needed to be embedded in the system, one school superintendent said, "I love the idea of changing the school day and have it embedded within the context. It needs to be purposeful collaboration time in order to make significant change." Many other school leaders discussed the changes in staff collaboration that have occurred in their districts. One district leader started an after-school discussions on 21st century skills. Another committed to do an online study group with staff. The more time that is provided for collaboration, the more that time is valued in creating needed change. "We're beginning to see that they're wanting more and more time now; since they have a taste of it. They feel they need more time to collaborate and discuss student needs," was one leader's comment. Another stated, "When we have in-service days and have grade levels teachers get together, that's their favorite in-service day, the dialogue and time to talk." A number of participants indicated that they found strength in moving forward with change by connecting with others and realizing they didn't have to solve things by themselves. One principal said, "The connectedness to others gives us strength and helps us grow."

Many commented on the need for dialogue not only in the school community, but in the entire community. One principal involved in promoting district change said it was important to help parents understand the changes that technology brings to the learning environment,

particularly “if they don’t see (homework) papers coming home.” Another principal said, “Part of my job is to bring that message to the community, and show the changes we are making and how it benefits our students.” Keeping the community involved in change initiatives was viewed as valuable by all school leaders. “We’ve got to make sure that the community is informed,” was one comment. Another superintendent, in discussing changes made to reorganizing the delivery of instruction said, “We had to spend a lot of time teaching parents and letting them know what’s going on, once they understand they will support your initiatives.” In addressing the need to share changes required by NCLB with the community, a principal indicated:

AYP issues make a difference to parents. If I can show the changes we make help us make our goals, they are all for it. The more they understand we are all connected and all in this together, the more it will help all students.

In order to create change, it was viewed as important to share the vision for change with all involved. One principal stated, “I’ve seen huge changes because I’ve shared that vision and I haven’t pushed, I haven’t shoved, but they’ve bought into it. It’s been a good thing.”

Another principal, discussing the results of collaboration time with high school teachers stated, “They are talking about engaging kids and how to teach them in different ways. Empowering the learner helps them feel more in control of their future.”

In developing a readiness for change, school leaders expressed the importance of relationships and shared responsibility for learning. Involvement in opportunities to discuss challenges to learning and discover solutions together empowers and strengthens the willingness to change. Change leaders felt it was important for students, staff, parents, and community to understand the needed changes. They valued the opportunities to build relationships and continue dialogue and

discussion. The commitment to create an environment for collaboration created a learning context leading to systems thinking.

### *Systems Thinking*

Leaders involved in systems thinking take into account how the learning environment is affected by interactions of all influences on the system of learning. The change leaders in this study were aware of the influences on the learning system and consequently understood that the learning environment needed to adapt to all forces of change. Remarks from leaders in the study focused on the importance of thinking systemically about the needs of the learning structure and adapting accordingly to meet the changing requirements for teaching and learning.

A number of school leaders indicated that the opportunity to be involved in change initiatives such as KAL-Tech and KATCL caused them to develop a systems approach to their thinking. One superintendent stated, “Before KAL-Tech, the more I read, the more I studied, and the more I dialogued and reflected, the more my mental model began to change. But KAL-Tech crystallized my systems thinking. It was a vehicle to formalize things for me.” Another superintendent concurred that KAL-Tech caused a change in thinking, stating:

It has caused our folks to think about options in another way. That there are other ways of doing things, better ways of doing things to meet teaching and learning needs, and certainly technology becomes a critical tool in making that happen. But the idea that we need to make systemic change, and we’ve got to make these adaptive changes, that’s been the best thing for our team.

Involvement in systems thinking was seen as invigorating for the majority of participants. One district leader commented:

If you are always staying in the same place, working in the same building, in the same district, you're only getting filled by the people you know. You're never really getting stretched or challenged. So to be involved in KATCL or KAL-Tech allows you to be stretched, to be challenged, and it also allows you to be reinvigorated or rejuvenated and use a systems approach to change.

Other school leaders reflected on the importance of taking systems thinking back to their district. "Thinking differently starts the whole process. There were some who went back and started thinking differently about the system, after being challenged."

Systems thinking created the ability to view the whole picture and see how patterns of change are interrelated. Change leaders involved in the study understand the importance of seeing how patterns of change influence the learning environment and work to motivate others to understand as well. Through relationships and collaboration, the learning and dialogue can enhance systems thinking and the ability to change.

### *Summary*

KAL-Tech was viewed as providing change leaders with the catalyst for change to empower them to move forward in providing a structure for change in schools. The dialogue and open minded discussions provided a vehicle for changed thinking. Change leaders use motivation to inspire change in others, and do so through providing increased opportunities to learn and grow. Relationships are valued as a stimulus for change and a personal commitment to address student needs. Providing opportunities for collaboration strengthen the commitment and encourage a shared vision to create an environment which invigorates systems thinking to make needed change.

*School Leaders' Perceptions of the Productive Characteristics, Activities, and Behaviors Related to Maintaining a Lifelong Orientation to Systemic Change*

The following findings and their analysis describe the school leaders' perceptions of the characteristics, activities, and behaviors that were productive in promoting a lifelong orientation to systemic change. Change leaders were focused on learning and understood associated organizational needs as they related to the need for change. They also accepted personal responsibility for creating an environment which was engaging for students. These educational leaders were intent upon creating a learning organization which reflected a positive attitude towards and acceptance of lifelong learning as an organizational value.

*Focus on Learning*

In order for leaders to address the true purpose of the public education system, schools must focus on learning by adopting learner-centered approaches, and by truly adapting instruction to the needs of the learner. Findings indicated that change leaders understand the need to not only focus on the learning of the students, but also on the learning of the adults who serve them. Provisions for formal learning experiences, as well as learning that results from dialogue, exploration, and experimentation, both were perceived as important in creating a capacity for change. Creating learning communities within the school that provide continuity and a sense of belonging and that enable students, staff, and community to learn from and support each other, was distinguished as valuable to school leaders.

One of the most significant comments from school leaders was the need to continually focus upon learning. "Probably the most important thing we need to do is to value learning, not time," was a comment commonly heard from participants. In order to bring value to the learning environment of the 21<sup>st</sup> century, a majority of those contributing said that it was essential to

focus on “what we want our students to learn, and generate activities to integrate the learning for the outcomes.” A number of remarks from school leaders included the importance of their leadership role in utilizing technology as a tool for creating an achievement-based system, rather than a time-based system. The comments ranged from the importance of utilizing technology for research and creating authentic projects, to using technology for scheduling, record keeping, assessments, and data analysis.

In reflecting upon the importance of focusing on learning and integrating technology to meet the needs of all students, one school leader said:

I’ve always felt like there is a way to teach all kids. Eventually, I believe that we will be able to use highly sophisticated interactive software with the teachers, which help them facilitate learning. In the future this will be more software driven; they will be more of a facilitator, filling in the gaps. Teachers will help facilitate learning and search out the appropriate resources with the student.

Continuing the emphasis on learning, another superintendent focused on the importance of providing models for new instructional delivery by emphasizing an example of what he was thinking. He reflected in the following way:

A big change agent for learning in our district has been the Intel Teach to the Future program, and the lead teacher who firmly believes in teaching the standards and having kids learning with the tactile mode and multi-modally. She is dedicated to learning through applications and making it meaningful and engaging so when the teachers are in the program they are really learning how to integrate technology into their lesson plans.

Using technology to meet the needs of students with learning difficulties was also important to participants. The following comment referred to online resources as another option for further focusing on learning:

The Virtual Prescriptive Learning (VPL) experience has helped with difficult learners, helps with difficult kids, to keep them on task and helping them to be successful. As a leader, I have to be out there looking for opportunities and new tools for learning. They aren't always obvious.

He added that in order to focus on learning, an atmosphere for learning must be provided to staff, as well as the time needed to learn and integrate new tools for learning. "The administrative team needs to be out there looking for new opportunities for learning, and make them available. They (teachers) don't have time. We need to do the leg work and give them time to process and make happen." Another principal, during a video-conferenced interview over the internet, expressed views on the importance of leaders seeking new ideas and methods and commented, "Ten years ago we wouldn't have been sitting at our laptops, having a video-conferenced interview with videoconferencing software. Me, having this conversation, opens new avenues for learning for my students."

School leaders agreed that in order to create a focus on learning, teachers needed to change their role and become facilitators of learning. In following this thought, one leader suggested that, "There needs to be transitions in the way we do things. The teachers are starting to let the kids find the resources; they need to get comfortable with this, so they can move forward with the kids." Still another stated:

Technology will continue to be the tool for learning. It provides the visual stimulus that students need. We've got to keep stepping it up. As we do, it will become more

meaningful, and learning can become more timely. If students can get data from resources that happened two hours ago it's much more meaningful than from a book about something that happened 100 years ago in World War I or II.

Dialogue and discussion on creating opportunities to focus on learning needs to continue to evolve as being important to all school leaders. Another commented, "We are having 21st century learning conversations, we are discussing the different generations and dealing with the different generations and how they collide, to help our staff change."

The opportunity to develop new prototypes for a focus on learning was provided to some districts through charter school funds. Describing the initial reactions of staff to a focus on individual student learning, one superintendent stated:

We also have a charter school and a K-2 literacy program; we've eliminated some of the grade level issues. We are moving students from where they are and taking them where they can go. The teachers are saying we need to expand this to the high school.

School leaders in the study considered sustainability and commitment to innovative programs important to continued change. Commenting on the need for resources and dedication a principal said, "Most of the programs that are most successful are the ones that have the commitment of the teachers that can provide the sustainability beyond the grant funding."

Another principal commented, "We need to develop teacher leaders, to help sustain our progress." One school leader indicated, "If we continue to modify the learning environment and do what's right to sustain change, it will become ingrained in the school culture and will sustain itself, but change leadership is important to develop the culture change."

Focusing on learning and making a commitment to provide the resources required to meet the needs of individual students was seen as proceeding in the right direction to make

change in schools. When conversations center around learning, a commitment from teachers to change, is more likely to occur. Change leaders are focused on learning and providing the changes needed in the structure of the learning environment to meet the needs of all learners.

### *Improving Learning*

The changes required to focus on learning produce a need to look differently at how learning is viewed, in order to encompass digital tools for instruction. Findings indicated that change leaders feel there is a need to take another perspective in order to shift to instructional methods that are more appropriate for the future needs of students and staff in the digital age.

Leadership for the digital age requires school leaders to be open-minded in how they view schools and instruction for future needs. Reflecting upon the future of schools, one leader suggested, “School can be school and not look like it looks now. We have to think about that as we begin to move leaders into the digital age.” In looking at the learning needs for the digital age student, another leader commented about the importance of understanding their needs:

The counselor said the digital kids don’t come in for career information anymore. So, she is delivering it online and has created a career café, with coffee, cocoa, and internet available for career opportunities, where students gather and have conversations. She’s creating the environment of the digital kids. The organization of learning needs to adapt.

As pressures from the forces of change continue to impact the learning environment, school leaders felt that providing support for developing new techniques for continued growth was important, as one leader expressed:

They feel greater pressure, the stakes are higher and will continue to escalate, yet we need to provide support to make sure they have what they need for the digital age. As the

benchmarks continue to go up they have to have the tools and the knowledge to be successful, creative, and more resourceful.

Another participant commented on the importance of the organization adapting to the learning needs of the students, saying, “I need to have discussions with my staff about instant messaging and blogs. I need to share my concerns with staff, let them know what others are doing, and get their feedback, to incorporate these tools into the learning environment.” In addressing needed changes for preparing students to be future learners, a principal leader said:

Not only are we seeing changes in society but also we see changes in the work force and the need for preparing kids to go out into the work force and be constant learners. The jobs of working the assembly lines are going away, there are more technical skills needed, and we need to do our work to get them where they need to be.

Several participants commented on the importance of participating in opportunities which enhance the capacity to incorporate new learning and create a motivation for change, as one superintendent commented:

I think groups like KAL-Tech, the Kansas Association for Twenty-first Century Leaders (KATCL), and KADL are all great. I’m thankful that those at the state department have created an external force for those of us at the local level. They created an impetus for those who are interested in change to collectively begin to explore how we are going to do that, what mechanisms can be in place, and how we can collectively effect meaningful change.

The importance of combining resources across the state to enable students to have new opportunities for digital resources for learning was acknowledged by participating leaders as stated:

The Kan-Ed initiative has tremendous power to provide a pipeline across the state. If they can fund it at the state level, access to the software and bandwidth for true video will truly help. That's what we need for the students in Kansas, the access for all students across the state to be able to use true video for instruction and the learning environment.

The impact of change and cultural shifts in thinking evolved from data as requiring continual reinforcement and thinking about changing needs for instruction. A superintendent expressed this view, "I think we're pretty good at first order change, the surface change, but the second order change, the deep change, the cultural change, shifts in mindsets, we're not there yet, and I know that takes time." A view on changing requirements for staff was further expressed. "Our vision of the qualities of teachers is changing," said another superintendent. Another school leader reinforced this view with the comment:

We had an in-service and one of the principals was addressing staff and said, "When I began as a principal I cut a teacher who was thinking outside of the box, and now I am looking for some of those people that I cut. I now need someone who thinks outside of the box."

The findings clearly indicated that without the dialogue, discussions, and changing perspectives about learning needs, change in thinking would not have happened. A vision for future learning and collaborative opportunities was expressed by this school leader:

My vision is to provide the very best educational opportunity for all of our kids so they are the most productive citizens in the 21st century that they can be with technology, great communication skills, working on relationships, building positive relationships, and all of those skills that we know are going to be so critical for adults to be successful in the 21st century.

Improving learning requires the development of new techniques and strategies for learning and a commitment to continued growth. Changing thinking regarding how learning is viewed makes it more likely that students will have an engaging interactive learning environment. School leaders committed to promoting change for the digital age are open-minded in how they view schools and take responsibility for providing appropriate instruction for future needs.

### *Manifesting Learning*

In order to address the learning needs of all students, findings indicated that change leaders felt a focus on learning is obvious and that educators must instill the desire in all learners to take personal responsibility for their own learning. The change leader understands the importance of creating a desire to learn in students, staff, and the community in order to provide an environment that can successfully adjust to the rapid changes in society.

Taking personal responsibility for learning was seen by these school leaders as an important characteristic for change. One person commented, "If I want the students to become their own learner and become self directed in their learning, then I have to be a part of that process, too." Another principal commented on the need to prepare for self directed learning, saying, "Things are changing so fast, that as a school, we can't teach them everything. We have to get them prepared to know how to go out there and find the answers on their own." Responsible action and shared leadership to do were viewed as a means to empower others to implement change, as one superintendent stated:

I think the key is the concept of shared leadership in educational organizations. The superintendent leads, the principal leads, and as we allow teachers to experience more

autonomy in making decisions and taking risks they will start assuming the shared leadership roles that will be influential in moving these change initiatives forward. Another commented on doing the right thing for the future of students by saying, “It’s just critical that you have leaders that will step up and say this is the right thing to do. If it is the right thing to do then we will find a way.” Another school leader talked about a triggering event that caused him to decide that we need to create a motivation for personal responsibility in the learning environment:

In college I went to work in California for the summer on a construction crew, and our job was to load Mexican tile on roofs. We were paid by the square; we could work as long and as much as we wanted. We could load 10 pallets a day or 50 pallets a day, it was our choice. They had measurable outcomes, the more you did the more you got paid. It was much more efficient, and much more effective than if we were paid by the hour. This and the dialogue came together, so I thought, we could do that for kids in the world, and have them take personal responsibility.

Being personally responsible for your own learning and understanding the importance of instilling this trait in others was viewed by change leaders as important to manifest learning. Engaging students and staff in an environment that promotes continued learning is self-motivating to leaders who embrace change. These change leaders are compelled to take responsibility for creating engaging learning opportunities for all, so they can adapt to the learning required in the digital society.

### *Engaging Learning*

According to the findings that emerged from the study, the goal of school leaders is to create successful, engaged learners who take responsibility for their own learning. Providing a

learning environment where students are self-motivated, define their own learning goals, have the ability to define and solve problems, and demonstrate learning was evidenced in the findings as being important to change leaders.

School leaders addressed the importance of changing the environment so that learning is more engaging for the needs of the learner. One participant referred to the discussions in KAL-Tech as providing meaningful engaging activities for leaders, and indicated that a variety of methods should be incorporated into instruction, saying, “We now know, the textbook should be just one of many tools used for instruction.” Another leader stated:

We need to prepare the way to create learning environments that are brain-based, student friendly, engaging situations. I just feel strongly that we have to help kids become the historians, become the scientists, develop and engage them in learning, be excited about learning, and quit playing school.

In describing engaged learners and goals for change, a superintendent made these remarks:

I tell my teachers over and over that Kindergarteners are the most engaged people in the world. They love to come to school and love to learn. While the number one word that seniors use to describe school is boring. Our goal is to get to the place where seniors are not saying that. The only way to do that is to give them meaningful activities that they find engaging.

The importance of hands-on activities and using a multi-sensory approach for providing an engaging learning environment was further stressed:

We also know that kids do better with hands on learning activities where their other senses are involved in the learning activities, besides hearing. When we provide activities

using visual, tactile, or some other mode, it becomes much more meaningful for them and they can sustain and retain it better than with rote memory.

Another leader commented, “When they can capture that video and place it into a report and show someone else, ‘This is what I’ve learned,’ it becomes much more meaningful and engaging, and school doesn’t have to be boring.”

In summarizing the importance of providing engaging learning, one participant stated, “So it’s just a matter of connecting kids with what they want to learn, when they want to learn it. We need to lean more toward that conceptive learning lab.” Engaging teachers in new learning with technology was viewed as a stimulant for creating an engaging environment for students. One leader commented, “Since we’ve implemented the laptops and training with mentors for them, our teachers are really excited - high on what they are doing in their classes. They are enthused and engaged in their learning and their students [learning].”

Engaging learning environments allow for problem solving and critical thinking and promote an organization that focuses on learning. Engaging students in interactive multi-media projects requires resources and skilled teachers. Change leaders challenge old methods of instruction and encourage a commitment to shared vision for collaborative learning and provide resources for authentic projects that value learning.

### *Valuing Learning*

A learning organization provides opportunities for members who are engaged in their work and strive to reach their potential by sharing the vision of the organizational goals with colleagues. New mental models guide them in the pursuit of personal mastery, and their personal goals are in alignment with the mission of the organization. Working in a learning organization is

viewed, from the findings, as seeing one's work as part of a whole system where there are interrelationships and processes that depend upon each other.

A majority of the participants viewed creating an environment for continued learning at all levels as being important in creating systemic change. One participant used a metaphor equating the growth required for developing an organization committed to learning to farming:

A lot of what we do in this effort is sort of like being a good farmer, a good steward of the land. We're sowing seeds trying to take care of the organization in such a fashion, that when all the ingredients come together, the seeds begin to grow, and then we start reaping some of the benefits.

Making sure everyone is aware and prepared was also viewed by another district leader as important. "It is my job as a member of the district leadership team to help create that visual model and clarify a common goal, trying new things, and making sure that everyone learns and prepares for change." An additional comment regarding the need to become a community of learners was made: "If we continue taking it to the next level for staff we will continue to grow together."

Recreating similar learning opportunities and change initiatives locally were both regarded as important to leaders in the study. Providing opportunities for others to learn and grow, and encouraging professional learning to assist in growth, were viewed as important. "One thing I do is that I send out 3-4 articles a week to building principals on needed change efforts and how we refine learning," was one leader's method of promoting growth. Another principal commented, "Our faculty meetings are all centered on staff development and the discussions we need to have about education, a great model for sharing collaboration and learning." Others indicated that it was important to utilize all available resources to develop a learning

organization, and commented on the first and second year teachers sharing new learning strategies and technologies:

I was out observing and we had some of our first year teachers presenting to our 20 – 25 year veteran teachers and I thought, ‘Isn’t this something. It’s those young people down there talking about strategies, and a lot of them to their mentors.’ I thought that was really positive.

In describing the need to share learning resources another principal stated:

We’ve been trying to put PDA’s into the hands of teachers. When you go to your 50 year old science teacher who does not have the passion for it, then you have your first year teacher who brings his own PDA with him, it creates change. Now, he’s much more ready to accept it. It seems we need to have the youth mentor the elders with their new enthusiasm and the elders share their wisdom with the youth.

Building professional learning communities was described as an effective method for developing learning organizations, as one superintendent expressed:

We added time to our calendar this year so every two weeks we have a late start. The teachers are in collaborative groups. The mind-shift hasn’t occurred to move into true professional learning communities, but they’re doing good things and feeling good about it.

Valuing learning and encouraging the potential for a learning organization provides opportunities for members to learn and grow together. Change leaders stimulate new knowledge and provide continued focus on developing a shared approach to using resources to obtain organizational goals. Opportunities for lifelong learning enhance the prospect that members will make changes necessary to meet the needs of the future.

## *Lifelong Learning*

To help foster a learning community, change leaders are committed to developing learning organizations committed to lifelong learning. The findings indicate that leaders committed to learning realize that learning occurs at all times. They support both individual and organizational learning and encourage all types of learning. The following findings indicate that building a learning organization which is committed to lifelong learning enables leaders, students, and staff to meet the challenges they face in the digital age and provides the environment to achieve future goals.

A commitment to lifelong learning was seen as vital in order to sustain a capacity for change in the digital age by school leaders. “I don’t think you can be successful today if you’re not willing to continually learn and be open to new ideas and better ways of doing things,” one participant commented. Other school leaders said, “For me the ongoing learning was important,” and “If I’m doing things with my staff, I need a good knowledge base. I like to continually learn from others.” Others commented, “When I continue to learn, I become more knowledgeable and confident in my skills, then we create our own learning lab and grow from that experience,” and “Absolutely every time you get a little knowledge you start applying it, the more you get the more you can see where you can make things fit, and integrate new technologies and new ideas into the system.”

Several other leaders commented on the need to instill the desire for lifelong learning in students. “They need to be lifelong learners and need to be able to take information and take data and be able to make information out of it. They need to be able to think and work in groups, as well.” Encouraging teachers to continue in their learning and work towards risking new challenges for students was also seen to be important for change leaders. One change leader

summarized the thinking of others by suggesting that the “teacher has to be a continual learner to look around and see what students need for the future, and they have to be an active learner as well.”

An overwhelming response from the change leaders who participated in the study was a love of learning. A majority indicated that acquiring new knowledge was important to them to grow. “I am an avid reader, and take pride in the fact that I am able to continue to learn and grow from others,” was one comment. “It’s always about learning and being around people that know and are knowledgeable,” said another.

Lifelong learning affects all aspects of the educational system and extends beyond the classroom. Change leaders understand that when individuals are encouraged to learn and become engaged in continued growth through active learning, the incorporation of new knowledge will allow them to better address the rapid changes and demands of the digital world. As lifelong learners, change leaders also viewed self knowledge as important in preparing for change.

### *Self Learning*

Through the interview process, a number of the KATCL mentors referred to the importance of self understanding in order to develop a readiness for change. One leader offered a comment which summarized others, stating:

I think the natural talents have more to do with that than anything else. You’ve got to study the talents of people to be able to recognize the talents and start creating political structures using the people that have those talents to help in moving you forward, building the tension in the organization, until you get to the tipping point and take them over the hill of change.

Through involvement in the KAL-Tech and KATCL initiatives team mentors read the book *Discover Your Strengths* (Buckingham & Clifton, 2001). This book focuses on the discovery of strengths to maximize the potential of an organization and provided readers the opportunity to take the Strengths Finder Profile. The Strength Finder Profile is an interview process which asks questions to analyze instinctive reactions and presents the individual's five most powerful themes.

The researcher invited participants to submit their individual Strengths finder profile data to contribute to the findings. Participating leaders shared common traits. The most commonly traits in the mentors participating were those of learner, and maximizer, with the theme focus of being strategic. Learners have a great desire to learn and continuously improve. Maximizers encourage others to reach their potential. Leaders with the strength of being strategic were systems thinkers, and had the ability to view patterns and the inter-relationships required for change to occur.

As the findings have evolved throughout this study, the most significant of these has been the finding that in order for change to occur there must be learning. Change leaders viewed learning as a catalyst for change. Change leaders are focused on learning and continual improvement in learning. Self knowledge and understanding others contribute to learning and building a capacity for change. Change leaders comprehend the value of utilizing personal strengths in promoting efforts for change.

### *Summary*

School leaders focused on learning in their assessment of the positive results of providing access to technology in order to address the needs of all students. Addressing the opportunities to change instruction and provide interactive learning for students was viewed as motivating to

change leaders. Accepting responsibility for creating an engaging and stimulating atmosphere for learning was the only option for leaders committed to change. In the process of developing learning organizations and collaboration for all learners, leaders in the study emphasized lifelong learning as the key element to providing a rich learning environment for the future. Meeting the challenges of providing for the needs of all learners (students, staff, and community), was viewed by change leaders as stimulating to them in their leadership role. They were motivated and encouraged by opportunities which could allow them to stimulate an organization for learning which addressed the changes they viewed as vital to the future of society. Incorporating personal strength into building a capacity for change was perceived as influencing the growth and awareness necessary to continue the process.

#### *School Leaders' Perceptions of the Defensive Responses, Characteristics, Activities, and Behaviors Related to Change*

As the researcher explored school leaders' characteristics, actions, and behaviors, issues were discovered that could be identified as defensive responses to the readiness for change (Argyris, 2004). The defensive responses described by study participants focused on many areas over which they felt were hindering the change process. These areas included: anxiety toward change, the lack of funding to promote change effectively, frustrations with legislation, unfavorable economic conditions, leadership frustrations, complacency, time constraints, and the desire to maintain the status quo.

#### *Anxiety toward Change*

Implementing change in school organizations is challenging and can create anxiety. Data from the findings provided perspectives regarding defensive responses related to the anxiety and fear which occur when attempting to promote change in schools. The themes that emerged

included feelings of inadequacy and fear of the loss of the ability to be effective, leading to a lack of confidence and failure to take initiative.

Many participants indicated that within their organizations there was a fear of change and feelings of inadequacy when faced with new technology, as one leader stated:

Sometimes we get trapped by our own experience and I think that's what happens to some of our teachers who have such difficulty with technology and with change. They go into it with the attitude, '... but this is what I know!', and it's difficult for them to move on.

Another comment regarding frustrations with anxiety related to change was:

Some people will jump on right away and others we need to pull their teeth out to get them to go, and it's a real balancing act, because if you put too much out there or if you try to get them to go too fast you're going to lose them. It's kind of like a hovering bubble, if you hit it too hard, it will break so you have to take baby steps sometimes, then take bigger steps, but that is always a balancing act.

"You have to allow people to believe, number one, that it's okay to take risks and, number two, that you don't have to worry about failing because you're not going to be written up for it, it's okay," was another comment. Frustration with the feeling that leaders must force change was also expressed by a high school principal:

I think it's still hard sometimes, when you're working with a teacher, to develop confidence to help them to take a risk, to try new things; they say, 'what if this happens' and I say, 'I don't care, just try it.' And we're making gains there but a lot of people are still doing things the same way that they have done for a long time. And for some kids it's great, but for some it's not, and we've got to serve all of them.

Others indicated that high school staff were most reluctant to change instruction, as one superintendent expressed:

In the high school they're entrenched. They want to stick with what they know. In the elementary, the teachers know coming in, they've got these kids all day long. They're stuck with them; they have to do something to get them excited. They've got to get them up and move them around, do all kinds of different things with them. So many of the high school teachers are stand and deliver and they don't see the difference yet. They think they're getting through but they don't know how to do the activities of engagement yet.

Another leader indicated that providing additional time may not address needed change, by stating, "I'm fearful that if we provide the time automatically it will become wasted time. They will get used to it and it will not become important to them to address change."

Complacency and the inability to absorb reality was also specified as a problem in creating change and was viewed as frustrating to school leaders. "In my district we were reading a book from the business world and one of my principals said, 'well that really doesn't apply to us.' But I know there is a need to change," were the discouraging remarks from one superintendent. Another leader indicated, "Becoming skilled in your field can make you unaware of the need for change." Still another said, "When you have that vision and your staff doesn't, that's a whole other challenge to get them to buy in." As one superintendent put it, "Change is happening all the time but no one likes it. We agree that change is necessary but not for me."

Expressing frustration with administrators who were unwilling to look at needed change a school leader said:

It's just that I feel that I've seen enough administrators in action that what they're trying to do is just maintaining what's there. They're doing a great job at maintaining, but it's

not going to change anything. They keep things in order, keep people happy, and move along real nicely, but there's not going to be a change with the way they do things to meet the needs of the future.

There appeared to be general agreement about how hard it was to get staff motivated to change when they don't take responsibility for change. Frustration was also expressed for those who feel a need to control and absorb all the burdens of change and aren't willing to share and gather strength with others. One participant commented:

I think we have too many people who feel the pressure to try and reinvent the wheel and the burden is really on them and it's not a collective responsibility and not a shared task and so they take on a lot of pressure and get overwhelmed.

Moving everyone forward and reducing fear of technology was viewed as a slow process by some change leaders. "There is minimum fundamental skill which allows them to have less fear in using it (technology) with kids. They all have to go through that phase. Some of our teachers are still dragging their feet," were the comments from one. Another district leader expressed, "The instant messaging and blogs are new enough to most of our staff that they are not comfortable with it and won't use it until they are. If I wait for them it's not going to happen." Others felt frustrated with a lack of readiness to implement new ideas for change. "The fiscal problems have created opportunities to try new ideas, but without the readiness it doesn't work to try to push things through and create a larger wall than is necessary," was a comment. Another leader expressed irritation with teachers who were unable to see a need to change, saying:

I always think we have kids that we know are different than they were 10 years ago. Yet, a frustration I have is, we're still treating them like we did 10 years ago, or 20 years ago,

or 30 years ago! There are pockets of teachers out there who are doing it exactly like they were taught, they don't see the need, and that is so frustrating.

Fear of change caused by a lack of confidence and feelings of inadequacy can lead to distortions in perspective when new challenges for learning are presented. Leaders who are committed to change realize that fear hinders change and that the transformation of the organization depends on the willingness to overcome obstacles presented by fear of change, as well as the anxiety produced by having inadequate resources.

#### *Inadequate Resources for Change*

School funding issues to address the financial resources for changes required to meet the accountability requirements of No Child Left Behind were issues school leaders identified as hinderances to developing a readiness for change. These topics emerged in themes related to the lack of adequate funding for schools, the inability to provide resources for changes needed to address the needs of all learners, and a lack of the funding needed to sustain and provide adequate access to technology.

A feeling of ill-fortune was apparent in some of the attitudes toward economic conditions. One superintendent suggested that he had "always thought that we've never had enough resources. In education we've always been treated as a second class citizen. The true bill for adequate learning has never been handed to the taxpayers. The level we are funding schools is at a huge discount." Another superintendent commenting upon the lack of adequate resources offered the following statement:

Teachers have always found ways to provide resources for students out of pocket. If you add to it the level of technology required, and in order for there to be a possibility for all kids to be successful you need to add reading specialists, and small classroom sizes, and

the other things that are needed to make all students successful, the costs are going to increase.

Disappointment with the legislators and their funding of schools was prevalent among school leaders. “It’s in the hands of the state to get extra money to build that line item, which is frustrating to me,” said one leader. Further comments were made regarding the lack of long term funding, such as, “I’d like to see a long range plan with some cost of living increase that we can depend on.” Dissatisfaction was expressed with the funding for needed technology. One school leader suggested, “We are one of the few states that doesn’t have a significant statewide initiative for technology. We have some great programs, but no resources, it’s all local and consequently it’s all spotty.” Another indicated that economic issues were the most stressful part of creating the needed change in the system. As one district leader reported:

The funding for this is stressful. I see in the past with state level grants there were innovative grants. With NCLB those are going to schools who haven’t met AYP, and I think okay we got here because we had some of those dollars to develop new and different methods, but now we can’t sustain them.

Discrepancies in the economic funding structure regarding poverty and diversity issues were also frustrating in providing adequate resources:

I think here in western Kansas we’re especially aware that our kids are not getting the advantages of a lot of schools because of our economics. Out in (names small rural community) they have a lot more grants because of the ethnic diversity and here our kids have the same needs. The needs of the students are the same whether they are poor or not. Too bad we can’t do all things for all kids.

Allocating funds to the changes needed was viewed as unfeasible in the current conditions. One leader suggested that he wanted to “implement a laptop initiative and I don’t know how we can fund it.” He continued, “We could increase the mill levy but we are so maxed out, and there is nothing left to do anything extra.” Another stated, “It’s got to be a reallocation of funds and that’s almost impossible.” Apprehension for sustainability of programs was expressed. “We need some type of funding deal that will be provided annually.” A further comment on the ability to keep up with change was, “The sustainability of technology improvements creates a fear factor. We need to have annual funding for it or it will not work.” Another commented on the need for additional resources: “In the 21st century there’s never going to be enough money and so we will always have to look at alternate funding sources.” In expressing frustration with the archaic funding system one leader said, “I’m not interested in NCLB or the educational bureaucracy because the economy will drive the needed change must faster than legislation or policy ever could.”

Lack of appropriate funding hampers the ability to transform learning and affects the capacity to provide an adequate learning environment. Fundamental changes in the state and local methods for funding public education are called for by leaders committed to transforming schools to address needed reforms.

#### *Adverse Conditions for Change*

School leaders participating in the interviews and focus groups discussed various frustrations that created obstacles to the leadership required to instigate forward movement for change in schools. Themes that emerged related to requirements for accountability in federal legislation, the capacity for change within current law and policy affecting schools, and the lack of effectiveness of the state department and school leadership organizations.

The legislative requirements of NCLB and the focus on assessments and comparisons with other districts was viewed as wearisome for some principals, as one stated:

NCLB is driving a lot of it. The pressure placed upon us as educators and upon the teachers who work with us and the students we serve is the biggest thing that comes to my mind. It's assessments, assessments, assessments, and being put up against other schools in publications, communications, AYP and the whole nine yards! I think you spend a lot of time as an administrator thinking there must be a better way to do things, and to do that, a lot of times you have to throw things away, and teachers don't like throwing things away. A lot of teachers don't like to take the most efficient route to get someplace, because they've always done it this way. It encompasses my thinking sometimes.

Another principal commented on frustration with assessments when he said:

I think assessments are important but I don't think they are the end all, tell all of everything. We have to prepare for assessments but we also have to prepare kids for what is important for them to know in order to be prepared for what they need for their future. I don't think that just because a kid scored well on the state assessments that will prepare them for what they need to do. I think there are some other things too. Although high stakes testing in some ways gets in the way and drives our decisions.

Laws for school attendance were also seen as a hindrance for creating any systemic change in delivery of instruction, as one district leader mentioned:

I have difficulty imagining how to create systemic change. We are trying to look at an achievement based charter school. Well that sounds really good until you start with all the implications with that and say, "Well, what about attendance?" There probably

shouldn't be any kind of attendance, so what about truancy laws? It sounds simple but major changes have to take place. Many changes have already occurred in the mind, but not always in the laws, because it's how we've always done it and that's how we are comfortable doing it.

Other frustrations experienced when attempting to create positive change were policies and issues such as the negotiated agreement and teacher burnout. These items plagued discussions about what's best for students, as one leader commented:

We get into discussions with staff regarding issues of staff development and time. I ask them to think about how in education, until we retool, how can we continue to do business and have collaboration time? Then issues come up like the teacher contract. Sometimes it seems like we are fighting a losing battle. We've changed directions with staff, because of burnout, and we want them to stay focused on teaching and learning. I have to be careful and I have to watch how hard I push them.

Sufficient time for working with staff seemed to be another significant frustration in creating the systemic changes needed to address the issues facing school leaders. Several school leaders indicated that if they had more time to dialogue with staff they could engage them in more meaningful conversations. One principal talked about the challenges in sharing new ideas and improvements within the traditional timeframe, stating, "I like to see if I can take things back to share with other staff. The biggest challenge is how to find the time and determine how to put it into the timeframe we have and make improvement in the traditional system." Another stated, "We continue to stack on and pile up what is expected of teachers and don't really provide them time for planning or collaboration. I think it's the same thing for administrators as far as time and resources." Providing time for staff to learn and grow was trying for some principals. "I know

my staff is hungry for knowledge and it's just a matter of finding time to get them everything they need to learn about," said one.

Frustration was also expressed with the effectiveness of the Kansas State Department of Education (KSDE) and other leadership organizations, as one leader stated:

I think the same thing is true with KSDE, just where we are in Kansas, and what we are having to do should have those light bulbs come on and say, you know the old, based in Topeka, single-office building way of doing business is probably not going to work very well in the 21st century. They need to provide the level of support and resources that people really need in order to have kids be successful. I don't see an impetus for that, it's not going upward. We've obviously done a lot of things in individual districts and in buildings, but it needs to permeate the larger culture in order for it to make a significant impact across the state.

Concerns with leadership organizations and the commitment to change were expressed:

You know, I was at the USA [United School Administrators] convention last week and I didn't see a whole lot of new faces, I didn't see a lot of people I didn't know, and maybe that's reflective that there's not a lot of new young administrators. It seemed the numbers were down and that's a negative. Maybe it means that we're not replenishing our leadership, or maybe they just choose not to be involved.

Another commented that it was indicative that educational organizations needed to change, saying, "I think anytime you have a huge organization like USA, it is very difficult to do (change) that and sometimes if it looks very slow, those people who are impatient and want to do these things now don't want to get involved."

Some leaders expressed difficulties in going back to the district and implementing changes within the restraints of the current system. One superintendent admitted, “I hate to sound pessimistic but I think that we as educators have been pretty darned good at paying lip service to the needs of change but then we get in our collective groups we fall back into old traditions.”

One comment further indicated disappointment in the ability to address actual needs of students:

We leave some out and we may not be challenging and expanding some of them enough.

We need to focus on progress and we spend a lot of time where we say, ‘Is it worth it?’

We have to think about whether or not we are dropping expectations and enabling them to stay low.

Everyday concerns and routine management activities provided an excuse for some:

Currently we are so bogged down with the wires and pliers and everyday management tasks that we don’t have the time we need to dedicate time to model to staff and get in classrooms, and go out to see what new things are out there, and bring it back to them.

Much of the lack of progress and feelings of failure and frustration from change efforts among school leaders result from the lack of recognition that the needs have changed. The traditional methods for operating schools are frustrating to leaders who feel compelled to address change. Change leaders understand the need to intentionally and simultaneously engage others in redefining and rethinking organizations so that learning is at the center of their work. Change leaders are aware that when the need for change is not recognized, learning for change is hampered. They recognize that improving schools and districts requires that everyone in the organization takes responsibility for leading and changing the status quo.

*Maintaining Status Quo*

Maintaining the status quo is common practice in school organizations. There are strong common assumptions about how schools are supposed to work, even if the methods are no longer effective. Making transformations in the way school is perceived affects the entire community and can be threatening to those who desire to preserve the status quo. Maintaining the status quo was viewed by leaders as inhibiting the change process. Data from the findings provided leaders' perspectives regarding the irrelevance of the current school system, the painstaking pace of advancement, the expectations of the community, and personal frustrations with attitudes toward change.

One leader provided an example of how the status quo no longer served the needs of students, stating:

We are still based on an agrarian economy. We had an experience when I was at the middle school; we switched from doing spring testing to fall testing, which meant we gave a test in the spring, and turned around and gave the same test again. We found that taking three months off is a dramatic hindrance to learning.

In describing the current educational system and the organization of schools, one participant said, "We're not designed for learning; we're designed for discipline." Another stated, "We can't have schools developed for an industrial age and expect students to flourish in the digital age." Maintaining the current environment was viewed as inappropriate as expressed by a superintendent committed to change:

I don't think there is any alternative. I think if systemic change doesn't occur we may not survive. So we have got to look a little more critically at what we've done which has served us for a long time but it's not going to continue to serve us.

Another expressed frustration with the fact that changes aren't actualized as quickly as they should be, saying, "Our thinking about our job is different. Our teachers better understand the need to engage kids and go beyond the status quo. I am disappointed that we don't actualize that as much as we could or should." Another commented on the fact that the system no longer worked:

I feel a moral obligation as a school leader to say, just because this is the system that has put me where I am today, doesn't mean it isn't without fault. It's time to make it more relevant for our students who are 16 and 17 years old.

Leaders oriented towards change indicated a willingness to make changes, but recognized that challenging the old belief system required patience, and a persistence that felt exasperating at times. As stated by one school leader:

You have to keep plugging and you have to keep patient. I tend to be kind of impatient and want it to happen now. You still have to keep the message out there and you have to keep pressing that this is what we need to do to. I keep saying that maintaining the status quo just moves us backwards.

Another said, "It's difficult for communities and for teachers and others to dive in and make change without a visual model." Challenging the mental models of the community was addressed by another school leader:

It takes time to imbed those conversations in the community. It is very difficult to get communities to change because they've all been to school. They're all pretty good experts at what school should be, so they are influenced based on their school experience. In small rural school districts there's a great resistance to those ideas.

Finding the right people in the community to assist was indicated as a challenge to change leaders. One leader asked, “How do you challenge them and influence the people who can get us there and have them see what it will do for them and make them be willing to take a stand to do what’s good for kids? We need to get to the people who can make the changes for kids.” The fact that “you have to put people in an uncomfortable position, challenge their beliefs and mental models, and you can’t go for it too fast,” was frustrating for some who wanted to move forward at a faster pace. Others found it difficult to address the challenges presented by the community and their view of school, as one district leader stated:

We have to temper what we think is an important change that we need to make with the expectations of our taxpaying public Always compare it to that rubber band where we stretch it out as far as we can go and the status quo pulls it back.

Several leaders commented on the negative aspects of maintaining the status quo in rural communities. As one leader said, “It is a turf issue among small towns where schools are the community. The technology is the catalyst to help them. They need to understand this and work together.” Contradictions on what was indicated as important for successful change and the realities presented in school communities were frustrating to promoting the best educational environment. As one superintendent suggested, “It’s very ironic that as we talk about the (fact that) smaller learning communities are shown to be successful ... in our state we’re trying to combine some of the smaller schools into larger schools.”

School leaders felt that it was a struggle to challenge the status quo and current thinking. Many comments illustrated frustration. One leader indicated, “If we do what we’ve always done we’ll get the same results; it’s not going to change anything.” Another stressed his personal feelings in this way: “I decided I couldn’t promote the status quo any more.” Another

superintendent added his personal reaction to changing: “Once involved with moving forward, I couldn’t go back to the old mindset. I wanted to move on.” Another suggested that, “We have to challenge the commitment to the status quo,” and still another, “They like what they know.”

Maintaining the status quo was viewed by change leaders as detrimental to learning. Responsible school leaders challenge the status quo and reassert that the current needs of the learner are central to the learning process. They promote efforts to assist others in understanding the realities and possibilities for students.

### *Summary*

There were a number of characteristics, activities, and behaviors that were viewed as hindrances to creating an environment for systemic change. Primary among these was the anxiety that was exhibited by staff and other administrators for taking risks and attempting new things. This was compounded by concern over the pressures of assessments on the success of students, as well as the economic demands that inhibit their ability to provide resources for effective change. Adverse conditions such as time constraints and the drawn out process of change, as well as the negative aspects of maintaining the status quo, were frustrating to change leaders who understood the requirements for change. Change leaders realize that obstacles to change are burdensome and conflict with effective change efforts.

### *Chapter Summary*

The analysis of data and findings in this section focused on the perceptions expressed by school leaders involved in systemic change initiatives in Kansas from three data collection methods. The chapter presented discussions based on the three research questions. The first three sections presented findings leaders’ perceptions of the productive characteristics, activities, and behaviors related to readiness for creating changes needed in the learning environment.

The change leaders involved in the study regarded advances in technology as a means for addressing the changing needs in the learning environment. The role of the leader in addressing new expectations for learning and creating this new learning environment was viewed as providing common vision, support, and opportunities for personal growth. The change leaders participating in this study distinguished themselves as important catalysts in creating change with new models for learning. Involvement in change initiatives was viewed by change leaders as providing them with dialogue and open minded discussions to motivate and inspire change in others. Change leaders focused on the importance of offering opportunities for collaboration and used a shared vision approach to create an environment which invigorates systems thinking to produce an engaging and stimulating atmosphere for learning. Leaders in the study emphasized the importance of developing learning organizations structured around lifelong learning and self understanding as the key element to providing a rich learning environment.

The last section of chapter four provided the school leaders' perceptions of the defensive characteristics, activities, and behaviors which were viewed as inhibiting to an environment conducive to change in learning. Change leader in the study perceived the anxiety for taking risks and adapting to change was compounded by concern over the pressures of assessments. The ability to provide resources for effective change was inhibited by inadequate funding and adverse conditions such as time constraints and the desire to maintain the status quo. Change leaders realized that obstacles to change were in conflict with efforts to make effective change.

The final chapter of the study summarizes the research and provides conclusions and implications drawn from the findings. The conclusions interpret the findings and provide a model to prepare leaders for change. The chapter concludes with a discussion of the study's

implications by describing the attributes of a change leader and providing direction for further research.

## Chapter Five

### *Conclusions, and Implications*

This final chapter is designed to assist the reader by providing a restatement of the problem under study and an overview of the research questions and methodology. It then presents the conclusions, recommendations, and implications of the research. The major sections of this chapter will interpret the findings, relate the findings to previous research, present conclusions, suggest recommendations, and discuss the need for further research. The chapter will also present a summary of the implications for change leaders in Kansas schools. Moreover, in recognizing the full impact of the results of this study, the suggestions for further study indicate that there is potential for the findings and conclusions of this study to be transferable to school leaders in Kansas and in other states.

### *Statement of the Problem*

Advances in technology affect educational systems and provide new opportunities for learning. School leaders who are committed to implement changes in educational systems understand the importance of creating learning organizations that allow students to succeed in a technological world. Schools with leaders who understand the role of technology in education, support student centered learning, build communities of learners, and develop a capacity for change, will be better equipped for supporting student success (Partnership for 21st Century Skills, 2004). Leaders involved in systemic change initiatives in Kansas recognized the need to take action to prepare for a system of learning appropriate for the 21<sup>st</sup> century. Technology resources are available in most schools, but not all leaders are aware of the substantial changes required to produce a transformed learning environment appropriate for new millennium learners and cognizant of the impact of a technologically-rich and global context. In order to transform

the learning environment, all school leaders need to develop an understanding of their role in implementing systemic changes appropriate for a digital learning environment (Partnership for 21st Century Skills, 2004). It is important to understand the views of leaders who are committed to change concerning how they have prepared themselves to accept the role and take action for change.

### *Overview of the Methodology*

Qualitative studies grow out of the need for information from firsthand observations of activities and interactions of participants (Patton, 2002). This study used qualitative data collection methods to answer the research questions. The use of this style of research design allowed the researcher to gain knowledge from school leaders in Kansas who have demonstrated a readiness to accept leadership challenges and move ahead to create new definitions of learning and new models of schools appropriate for 21<sup>st</sup> century learning. The collection of qualitative data provided detailed descriptions of the perceptions of school leaders who have continued participation in systemic change initiatives. The factors that motivated their readiness for change were also described, as well as how they prepared themselves to continue to move toward change. Through these descriptions, information was gathered on what they considered necessary to assist their colleagues to understand the need for systemic change. The study addressed three research questions which demanded this sort of data because it provided rich, descriptive data in the words of the participants (Patton, 2002), and a description of the individual perceptions, reactions, and actions of the participants. The following research questions guided this study:

1. What are the perceptions of school leaders involved in the process of systemic change regarding how they came to the conclusion of the need to accept their role in creating systemic change in schools?
2. What experiences do school leaders involved in systemic change initiatives consider necessary to the development of their personal readiness for the leadership role that systemic change in schools requires?
3. What do school leaders who are involved in system reform initiatives perceive as the fundamental processes in assisting their colleagues to recognize the need for systemic change?

#### *Research Participants*

The participants for this study were school leaders who were involved in the KATCL initiative. The qualitative purposive selection process focused upon (a) school leaders in Kansas who were mentors for the KATCL initiative and (b) principals and superintendents who were members of a KATCL team. These participant groups engaged in interviews and focus groups, respectively.

Interviews were conducted with twelve KATCL mentors representing twelve teams of ten to twelve members from various geographic regions across the state. Team mentors included superintendents, principals, and curriculum and technology directors who had previously participated in the KAL-Tech initiative. KATCL mentors were selected to provide insight and understanding of issues identified in the literature that play a role in the preparation for systemic change in Kansas schools. The KATCL mentors provided informed change leaders' perspectives as a result of their continued involvement in systemic change initiatives.

The Kansas school leaders selected to participate in focus groups represented four KATCL teams from different regions of the state. All four teams were made up of school leaders from two or more districts, and included principals, superintendents, curriculum and technology directors. The participants provided insight on the research questions based on their knowledge and level of involvement in the design of models for change in Kansas schools. All KATCL teams contained members who were also graduates of the KAL-Tech initiative.

### *Data Collection*

Qualitative data were gathered using a multiple method approach through a review of pertinent documents, interviews, and focus groups, which elicited perceptions and rich descriptions from school and district leaders. Using a variety of data collection techniques provided the researcher the opportunity to look at alternative vantage points to determine both differences and similarities in the results (Erlandson et al., 1993). A two phase approach for data collection was used to assist the researcher in preparing the questions for interviews and focus groups.

Phase one of the data collection included qualitative information about the topic models, as well as personal and team reflections from KAL-Tech. Written documents were collected from KATCL mentors and the Director of KAL-Tech, and KATCL model presentations were accessed from the video archives of the Kan-Ed website. These documents and video archives provided a basis for developing the interview and focus group questions for the collection of qualitative information from participants.

The second phase of the data collection began with interviews, which were conducted with twelve KATCL team mentors in the winter of 2005. These interviews were conducted face to face, as well as interviews by telephone and through video-conferencing methods. Focus

groups were conducted with purposively selected KATCL teams in the winter of 2005. These teams were from four areas of the state of Kansas. Twenty-one KATCL team members participated in the study's four focus groups.

### *Data Analysis*

Content analysis was used to review relevant documents likely to provide a rich source of information to complement other sources of data. Once data from the documents and video archives, interviews, and focus groups were collected, all data were unitized and entered into a database created with FileMaker Pro software. The constant comparative analysis method was used to examine the data (Merriam, 2001). Findings were interpreted by extracting themes and categories from the data pertinent to the concept of school leaders' readiness for systemic change. From these constant comparisons of categories and themes the researcher was able to develop findings and conclusions related directly to the research questions.

### *Trustworthiness*

The researcher incorporated several methods to address issues of trustworthiness in this study. The use of multiple methods and sources were used to allow for data triangulation. In order to insure credibility of the data, member checks were conducted after interviews and focus groups to confirm the information collected. Data collected from interviews and focus groups were entered into an electronic database, providing an audit trail and the ability to trace material back to its original source to further confirm the data. The constant comparative method was used to analyze data to ensure dependability of the data. All materials, interview and focus group protocols, signed consent forms, audio-taped recordings of the interviews and focus groups, and the transcriptions of interviews and focus groups were provided to an external auditor to further establish dependability of the findings. Rich, thick descriptions of the research findings were

provided from a purposive sampling of school leaders to allow for transferability of the data presented (Erlandson et al., 1993).

### *Summary of the Findings*

Chapter 4 presented an extensive data analysis of the information gleaned from the study's inquiry methods. The data from the documents and video archives, interviews, and focus groups were combined, compared, and analyzed to produce the research findings. The findings provided a source for the answers to the study's three research questions. The significant findings are categorized from the major themes that emerged from the data, in sections related to the productive and defensive responses generated by leaders and refer to the characteristics, activities, and behaviors of school leaders at varying levels of readiness for change. The findings are categorized into three areas of productive responses, which were focused on adding value to the process of creating systemic change in Kansas schools. The fourth category reflects the defensive responses that focused on the characteristics, activities, and behaviors that inhibited the implementation of systemic change. The significant findings are listed and then explained in detail below.

#### *School Leaders' Perceptions of the Productive Characteristics, Activities, and Behaviors which Produce a Readiness for Change*

Change leaders were responsive to the impact of technological advances on learning.

Change leaders sought to adapt the learning environment to the needs of students for digital learning.

Change leaders embraced the changing expectations for learning environments to meet the needs of all learners.

Change leaders considered the leadership role as an essential catalyst for change.

Change leaders envisioned new models for learning to begin the change process.

*School Leaders' Perceptions of the Productive Characteristics, Activities, and Behaviors Related to Developing Readiness for Systemic Change*

Change leaders engaged in change initiatives to prepare for systemic change.

Change leaders sought to provide motivation for systemic change.

Change leaders viewed collaboration and supportive relationships as vital to developing a readiness for change.

Change leaders were system thinkers.

*School Leaders' Perceptions of the Productive Characteristics, Activities, and Behaviors Related to Maintaining a Lifelong Orientation to Systemic Change*

Change leaders were focused on learning.

Change leaders were committed to improving learning.

Change leaders manifested new opportunities for self-directed learning.

Change leaders inspired engaged learning.

Change leaders valued learning communities in promoting opportunities for systemic change.

Change leaders embraced lifelong learning as a catalyst for change.

Change leaders were learners.

*School Leaders' Perceptions of the Defensive, Characteristics, Activities, and Behaviors Related to Change*

Anxiety toward change inhibited the change process.

Inadequate resources to promote change hampered the momentum for change

Archaic laws, policies, and organizational structures create adverse conditions to structure change.

The desire to maintain the status quo caused a resistance to change.

*School Leaders' Perceptions of the Productive Characteristics, Activities, and Behaviors which Produce a Readiness for Change*

*Change leaders were responsive to the impact of technological advances on learning.*

Change leaders were responsive to the impact of technological advances on the need for systemic change in Kansas schools. The changes occurring in society due to technological advances were viewed as creating a subsequent need for change in the system of schooling. Technology was viewed as a catalyst for change in the learning environment, with its ability to provide individualized instruction and level the playing field for learning for all students. Through the transformational potential of technology individual student data and learning needs can be analyzed, prescriptions for individual needs compiled, and projects developed to focus on the needs of all students and engage them in active learning. In effect, these leaders of change viewed the role of technology as key to engaging students in authentic learning projects and preparing them for the future.

*Change leaders sought to adapt the learning environment to the changing needs of students for digital learning.* Change leaders sought methods to adapt the learning environment to meet the needs of the digital learner. Concern that schools were not equipped to meet the requirements for the digital age instilled a strong desire in change leaders to immerse themselves in leadership activities to address the needs of students. Change leaders intuitively realized that in order to provide an appropriate future for students the learning environment needs systemic changes which effectively incorporated technology for authentic learning projects. Change

leaders possessed an overall sense of the importance of addressing the authentic learning needs of all students.

*Change leaders embraced expectations for new learning environments to meet the needs of all learners.* Change leaders were encouraged by the stimulus for change to meet the needs of all learners, as required by NCLB. The continued complexities of education and the learning needs of all students were viewed as calling for new ways of thinking. Change leaders recognized the challenges, but viewed them as opportunities to make systemic change and create a more efficient learning structure for all students. These leaders recognized that staff needs encouragement and support in order to address these requirements. As part of their approach, these leaders understood the importance of instilling trust and confidence in staff.

*Change leaders considered the leadership role as an essential catalyst for change.* Change leaders expressed the importance of the role of leaders in developing a shared vision to work towards a system capable of educating all students, and at the same time responding to the changing needs of society. Change leaders viewed creating a comfort zone for staff and community members as important in gaining the support of these constituents when considering the implementation of new methods for learning. At the heart of building a trusting, meaningful relationship with staff and community was the desire to form realistic views of the needs of the digital learner. The importance of providing opportunities to see the value of restructuring learning for students was recognized by these leaders. Change leaders sought to provide avenues to change thinking and to challenge the status quo. They understood that traditions were ingrained into communities, and that it would take personal commitment and leadership to help others change the view of how schools operate. They viewed their role as planting seeds of

change, and assisting in the nurturing and maintenance of a fertile environment. Change leaders relied on the ultimate desire of staff and community to do what's best for the welfare of students.

*Change leaders envisioned new models for learning to begin the change process.* Change leaders understood the importance of developing new models for learning and took advantage of opportunities in the traditional structure to implement change. Leaders realized that envisioning new formats for instruction and planning were vital to preparing for change. Providing flexibility in time for students and staff was overwhelmingly supported by leaders of change. Models for changing learning were characterized by flexible time for collaboration, as well as time for learning at all levels. Incorporating the flexibility and new structures required for the digital learner was consistently pursued in envisioning new learning models.

*School Leaders' Perceptions of the Productive Characteristics, Activities, and Behaviors Related to Developing Readiness for Systemic Change*

*Change leaders engaged in change initiatives to prepare for systemic change.* Change leaders viewed involvement in change initiatives such as KAL-Tech and KATCL as contributing to their readiness and ability to move forward to address systemic changes in the learning environment. Participation was consistently referred to as providing the stimulation and support required for change leadership. Most viewed the dialogue, discussions, and collaborative team activities as nourishment for doing what's right. The strength and camaraderie received through participation provided an environment capable of upholding the belief system of change leaders. Through nurturing of each other, change leaders developed the confidence for initiating change processes in their districts.

*Change leaders sought to provide motivation for systemic change.* Change leaders provide motivating experiences to encourage the process of change. They viewed participation in

stimulating personal growth activities as an essential element to motivating others to change. Inspiring dialogue, discussions, and new learning were believed to challenge old mental models and open new opportunities to prepare for change. They understood that motivation occurs through new learning and understanding the underlying needs of the individuals in promoting change.

*Change leaders viewed collaboration and supportive relationships as vital to developing a readiness for change.* Change leaders realize the importance of providing time for collaboration and the building of supportive relationships to construct a capacity for change. They understand that organizations are about relationships which are formed at a personal level through individual interactions. Change leaders know that relationship building with their peers was the precursor to their own motivation to change. They also comprehend the need for time to develop relationships and the importance of dialogue and discussion in a collaborative environment. They believed that through collaborative discussions and the building of relationships a community of learning can evolve for the greater good of the organization.

*Change leaders were systems thinkers.* They understood interrelationships and patterns of change, and were able to interpret their importance to educational change. They understood the complexity of external changes that were being forced upon the educational environment and the need to address the sense of helplessness that accompanies complex change. They understood that in order to foster growth within their organization they needed to use systems thinking to provide an atmosphere that built confidence and shared responsibility for all involved. Change leaders recognized the need to change the dialogue and discussions to restructure thinking and empower the entire organization to address systemic change.

*School Leaders' Perceptions of the Productive Characteristics, Activities, and Behaviors Related to Maintaining a Lifelong Orientation to Systemic Change*

*Change leaders were focused on learning.* Change leaders were focused on learning for themselves, their staff, their community, and their students. Providing an achievement based learning system utilizing technology for support was viewed as significant in creating the systemic changes necessary to meet the increasing requirements of a digital learning environment. Making available the opportunities to create an environment conducive to meet the needs of all students and provide digital learning for staff and students was important to leaders of change. An atmosphere which developed teachers as facilitators for individualized learning was viewed as beneficial to further learning. Change leaders understood that utilizing technology effectively as a tool for learning opened up new possibilities for students and teachers.

*Change leaders were committed to improving learning.* Change leaders were compelled to provide a capacity to change thinking in order to improve learning. They understood that to improve learning the mechanisms for change required leaders and teachers who were open-minded and willing to take responsibility to provide authentic engaged learning. Change leaders understood that learning occurs beyond teacher knowledge and requires new thinking and techniques to facilitate learning.

*Change leaders manifested opportunities for self-directed learning.* Building new opportunities for learning in an environment that allows students to become self-directed learners was important to change leaders. With measurable outcomes and the appropriate framework where teachers facilitate learning, students can learn through participation and engagement. Change leaders understood the need to change the learning environment to provide a structure conducive for motivating students to be self directed and engaged in learning.

*Change leaders inspired engaged learning.* Change leaders viewed engaging learning experiences as necessary to providing an authentic environment for learning. Engaging learning activities which allowed for problem solving and critical thinking encouraged students to become actively involved in learning. Providing resources and skilled teachers to create an environment where students are engaged in learning and involved in the design of projects was of major concern for change leaders. Multi-media interactive activities and authentic projects were viewed by change leaders as important in providing an engaging learning environment for students.

*Change leaders valued learning communities in promoting opportunities for systemic change.* Change leaders viewed the establishment of learning organizations as vital to developing a capacity for change. Learning organizations allow for shared vision, opportunities to develop growth through new learning, and the interrelationships and commitment that work to improve the whole system. Providing opportunities for organizational learning involving individual learning and the ability to think critically and creatively for needed change was an essential element for leaders of change.

*Change leaders embraced lifelong learning as a catalyst for change.* Change leaders were adamant about the impact of lifelong learning and its role as a catalyst for change. They viewed their role as providing ongoing, continuous learning opportunities for all stakeholders. Creating a community of learners was the goal of the change leader who understood that everyone has the opportunity to learn from each other. Providing a commitment to lifelong learning was viewed as the formula for sustaining a capacity for change and continued growth.

*Change leaders were learners.* Not unexpectedly, a common strength of change leaders, as measured on the Strengths Finder (Buckingham & Clifton, 2001) was that of learner. These authors described a learner as a person innately drawn to the learning process. Change leaders

were energized as they progressed through the journey of learning together. As learners, they were stimulated by a changing environment and absorbed with personal growth. They welcomed the opportunity to make change for all learners. Change requires learning and, when leaders are learners, the leadership qualities they possess innately promote the necessary components for change.

*School Leaders' Perceptions of the Defensive Responses, Characteristics, Activities, and Behaviors Related to Change*

*Anxiety toward change.* Anxiety related to the fear of change was viewed by change leaders as inhibiting to the change process. Complacency and a sense of self-satisfaction were viewed as anxiety related behaviors and as justification for not embracing needed changes in learning and teaching. Change leaders described situations where some staff hadn't acquired the personal/professional insight needed to provide an environment for students to learn by doing. These staff members were described as satisfied with a stand-and-deliver approach, and unaware of whether or not there was an impact on student engagement.

*Inadequate resources for change.* Inappropriate funding was viewed as hampering the ability to provide the resources required for needed change in schools. The lack of adequate funding created feelings of tension for some change leaders who sought change in the learning environment. Change leaders were willing to obtain alternate resources, but were frustrated with their ability to develop innovative programs or even sustain current change initiatives without appropriate school funding.

*Adverse conditions for change.* Current laws and school policy that inhibit the ability to implement change were disturbing to change leaders. Time restraints and the current system of measuring attendance, rather than achievement, along with the limiting factors of the negotiated

agreement, were viewed by change leaders as hampering the ability to create true learning organizations. Change leaders indicated that the functions of the state department of education and administrative leadership organizations were not adequately supporting the changes required to improve the learning environment for future needs.

*Maintaining status quo.* Attitudes regarding the status quo and school traditions were viewed as obstructions for some change leaders, particularly in rural communities. Change leaders understood the importance of community involvement and acceptance, but the emotional attachments to traditions were burdensome at times and conflicted with effective change efforts.

The findings, along with a summary supporting each inference, were presented regarding the perceptions of change leaders and the productive and defensive responses toward change. The findings represented activities and behaviors that were seen as productive to leaders for them to continue to grow and focus on needed change for learning, as well as those which were viewed as obstacles to the process. The next section provides conclusions drawn from the findings to further explore and understand the research data.

#### *Conclusions of the Study*

This section presents the conclusions that have been drawn from the major findings. The conclusions present the major themes that emerged from the data obtained from the findings. Implications take the form of a model which lists attributes possessed by change leaders who wish to generate changes required to provide a technology-rich learning environment to meet the needs of all learners. These attributes contribute towards the development of a model aimed at understanding the process of preparing leaders for change. The attributes were systematically collected and analyzed by the researcher. It is important to acknowledge that the information

presented has the potential to be transferable to school leaders in Kansas and in other educational locations when the question of preparing for school change is a priority.

*The L<sup>2</sup>C Model: Leaders Learning to Change*

Learning and leading are required for change. Leaders learning to change (L<sup>2</sup>C) is a model that takes into consideration that leading is a form of learning together to promote change for the future of learning.

*Attribute One: Change leaders bring a shared vision of the need for change to the entire learning community.* Students, staff, and community are more motivated to accept change when they are informed. Sharing the vision for change gives change leaders the opportunity to obtain a commitment to provide a learning environment that addresses the realities of the digital age. Change leaders help staff and community understand the changes in learning that need to take place for the future. The vision for change is identified and discussed in order to build a culture of change for the entire community. Change leaders address the realities of the future by communicating the implications of a new vision for addressing the learning needs of all students in a digital environment.

*Attribute Two: Change leaders incorporate ubiquitous technology in creating systemic change and improving the learning environment.* Advances in technology create new opportunities to provide a learning environment capable of meeting the needs of all students. The fact that students in schools have never known life without computers creates a new culture of learning that change leaders address. Change leaders work to recreate the culture that incorporates technology, with a focus on learning activities, into the system and to institute operational changes which will positively affect the entire system of education. Change leaders

lead the development of a technology supported system by providing access to the technology, as well as by addressing changes required for learning in a digital environment.

*Attribute Three: Change leaders incorporate systems thinking into creating new learning environments.* Change leaders understand that changes in society always permeate the educational system and continually assess and contemplate the ultimate impact of these changes on the entire system of learning and society.

*Attribute Four: Change leaders realize that learning is required for systemic change to take place.* Change leaders focus on learning for all aspects of the organization. New learning is made available to accommodate change. Change leaders stimulate learning for students to prepare for the future needs of society, for staff to prepare for changing needs of students, for community to understand the changing learning environment, and for leaders to acquire the knowledge to lead change efforts.

*Attribute Five: Change leaders commit to providing resources, time and opportunities for learning required to develop new learning and teaching for the needs of all learners.* Change leaders understand the needs of all learners in a digital age, and provide the additional resources required for all learners to be successful. They provide time for staff to analyze student needs, acquire new skills, discuss strategies for change, and prepare to implement new learning opportunities. Change leaders provide a safe, risk free environment to encourage the growth and development of the organization that focuses on the learning needs of all students.

*Attribute Six: Change leaders focus on creating relationships and collaborative learning environments to stimulate dialogue and discussions for change.* Change leaders enable organization learning through relationship building opportunities and time for collaboration to implement change. Change leaders engage staff in the process of building a collective vision for

doing what's best for the future. Change leaders understand that collaborating with peers and building collaborative teams will stimulate and provide needed support for change to occur together.

*Attribute Seven: Change leaders are committed to keeping an open mind regarding new and evolving opportunities to improve the learning environment.* Change leaders provide fresh opportunities for learning. As the constant influx of new opportunities to enhance learning continues, change leaders sift through the plethora of resources and professionally select those appropriate to meet the learning goals of a collective vision for change.

*Attribute Eight: Change leaders take the risk of incorporating new models to enhance learning for students and staff.* Change leaders seek new models for learning for systemic change. Optimistic approaches to new learning enables change leaders to stimulate changed mental models for how learning can take place.

*Attribute Nine: Change leaders are committed to lifelong learning to sustain systemic change.* Change leaders sustain change by promoting lifelong learning opportunities. They develop a capacity for self-awareness and knowledge growth in individuals which empowers organizational learning. Change leaders encourage lifelong learning and support learning at all levels.

*Attribute Ten: Change leaders continue to work with staff, community, governing bodies, and leadership organizations to address the issues which inhibit the success of systemic change across the state.* Change leaders are empathetic and initiate opportunities for dialogue to address the challenges of change. Effective change leaders incorporate cooperative strategies to aid staff in overcoming change anxiety, assist legislators in understanding the changing needs for learning, address policy changes required to promote a new learning environment, and help

community members adjust to change in schools. Change leaders work to overcome defensive responses to change by facilitating conversations centered on learning and providing opportunities for students and teachers to share success stories. Change leaders foster community discussions and dialogue which focus on the learning needs of the digital age to change the mental models regarding schools and learning and address the future.

### *Implications of the Research*

The study examined the perceptions of Kansas school leaders who were involved in change initiatives regarding their readiness for change. Specifically, the study identified the characteristics, activities, and behaviors which were productive in developing a readiness for change efforts in Kansas schools, as well as the defensive responses that inhibited the change process. Although the study focused on creating an environment which embraces the changes necessary for systemic change in schools, important attributes were identified that may provide implications for a readiness for change in other school leaders.

The study implied that change leadership brings a shared vision for change to the entire learning community as they consider the promotion of change. Information in the study revealed the importance of a collective vision for change that was embraced by all members of the learning community. Shared vision fosters the risk taking and experimentation necessary to assist in merging new behaviors with old behaviors (Fullan, 2001b; Senge, 1990 ; Senge et al., 1994).

This study also indicated that the incorporation of ubiquitous technology for improving learning was an important catalyst for systemic change. In order to provide appropriate tools for learning for the future, an environment with omnipresent technology enhances opportunities for change in learning to occur (Kleiman, 2004).

The most important implication of this study is that in order to facilitate a readiness for change, new learning is required. Change efforts depend primarily on the opportunities to learn new practices and roles for teachers, students, and the entire organization. The impact of these learning opportunities depends largely on how learning is perceived by the entire educational system (Argyris, 2001; Fullan, 2001b; Goldsmith, Morgan, & Ogg, 2004; Schein, 1992).

The study also implied that in order to develop new learning to elicit change, provisions for resources and time to develop new learning through relationships and collaboration are imperative. Collaborative learning provides an environment to enliven and enrich the learning process. Interactive relationships and time to work increase the effectiveness of the system. Collaboration draws on the mental models of perception, experience, beliefs, and assumptions and serves as a driving force in creating a learning community (Lambert et al., 2002).

Another implication that evolved from the study supported the importance of the open-mindedness of school leaders in improving learning through a commitment to lifelong learning for sustaining change. Lifelong learning requires a shift in thinking about the organization unit of education, from thinking of school as an institution, to considering it a learner with the potential to learn from all encounters. Leaders who exemplify lifelong learning allow others to practice the same approach to life, by encouraging learning and opening new possibilities (Lambert et al., 2002).

In contrast, there were some defensive responses and behaviors that inhibited systemic change. Leaders committed to change acknowledge these conditions and are proactive in addressing them with empathetic understanding and opportunities for dialogue. Developing a team approach to create cooperative strategies to aid staff in overcoming change anxiety, assisting legislators in understanding the need for adequate resources, addressing the policy

changes required to promote a new learning environment, and sharing information with community members who are resistant to change in schools will assist in reducing defensive responses to change. Change leaders facilitate conversations around learning and provide opportunities for students and teachers to share success stories with staff, community, leadership organizations, and governmental agencies to help overcome obstacles to change. The biggest barrier to change is not focusing on what is truly required for improvement. Change leaders know that expecting others to change their behavior requires facing challenges and addressing them honestly (Argyris, 2004; Hesselbein & Cohen, 1999).

To further understand the qualities of an effective change leader, the following section provides a glimpse into the attributes of a change leader, as presented in the L<sup>2</sup>C Model: Leaders Learning to Change.

*Imagine: The L<sup>2</sup>C Model: Leaders Learning to Change*

Mrs. Change was the new principal of Community High School, which had a diverse and low-performing student population and adamantly resisted lowering standards or curriculum for students. She insisted that what was needed to improve student performance was support for students' learning. She envisioned that concentrating on the individual needs of students, and focusing specifically on reading, would provide the capacity to make changes for learning. She generated discussions with district leaders and worked on a plan to communicate with parents, staff, and students, and engage in conversations. The dialogue was centered on beliefs concerning students' abilities, essential reading standards, effective teaching practices, required resources, needed structural changes, and a vision for shared responsibility for student achievement. Together they developed the following shared vision for improving student performance by focusing on learning, specifically reading, based on essential standards and

desired outcomes. “Our vision is to take all the students we have in this school and make sure that all are successful learners once they leave.” Once the shared vision for improving learning was developed, a plan of implementation was established. The implementation plan consisted of several phases, the first being to obtain access to appropriate resources.

Motivating students to learn was the common goal. Technology was determined to be the impetus for motivating students, as well as for providing a mechanism for tracking students’ individual learning plans, and serving as a tool for learning. Mrs. Change met with district leaders to determine the possibilities of implementing a one-to-one laptop wireless initiative designed to meet the goals of improving student achievement. Together, the superintendent, the district technology advisory committee, and the board of education worked out a plan to provide wireless laptops for all students at Community High. In addition, arrangements were made with the local communications company to provide wireless internet access to the entire school district, to ensure that students had access to technology both at school and at home.

Issues resulting from ubiquitous access to technology were addressed through the leadership of Mrs. Change, who empowered a group of teachers to lead collaborative study groups to dialogue and problem solve issues with students staff and parents. Once the issues were brought forward, resolutions could be integrated into the structural and policy changes required for successful implementation.

The second phase of implementation required new learning. Mrs. Change worked with community and district leaders to provide appropriate training and opportunities to learn together. A lifelong learning team evolved to plan for new opportunities in the entire community. A plan was designed for summer learning academies, where teachers worked in collaborative

groups to learn to use the technology, organize instruction incorporating standards and outcomes, and develop project based learning activities utilizing technology as a tool for instruction.

Mrs. Change distributed her leadership to teacher leaders, who encouraged staff to restructure the schedule to accommodate the changes for project based learning. A new design for the learning environment was established, with scheduling fluctuations and opportunities for both large and small group times, as well as time for individual learning plan development. In addition, collaboration time for staff was built into the schedule to integrate reading standards across curricular areas. Opportunities to share with peers and build teams of support were important to staff in progressing through the first year and learning to grow together. Through the development of professional learning community time, topics were brought forward and issues worked through together. A sense of trust and teamwork was established among staff, as the shared vision for student achievement was the common goal.

A community learning center was also established in the community as a result of the collaborative efforts of the lifelong learning team. The vision of the center was to provide lifelong learning to the community and provide a means for continued growth and development for students, staff, and community to adapt to rapid changes in technology and new job skills needed for the future. The motto was, "Everyone a learner, everyone a leader, everyone a changer." Through sustained efforts and leadership, learning became the focus of the entire community. Community leaders who were devoted to learning and school leaders met with state and local government agencies to provide learning and support for the changes needed in policy and laws to create a statewide focus on learning. Leaders were learning for change.

### *Recommendations for Future Research*

Information contained in this study assists in promoting critical dialogue and collaboration for school leaders as they consider the systemic changes needed for learning. The data obtained from this study identified key attributes for leaders preparing for change and may be of value to leaders in Kansas other interested readers. The focus of the study addressed the perceptions of leaders regarding a readiness for systemic change in the learning environment. This study was limited to selected school leaders who had participated in change initiatives in Kansas. During the analysis of the of the data and the determination of findings and conclusions it became obvious that the design of the study had imposed limitations that could quite well become areas of future research for example, the possibility of looking at school leaders who were non-participators in systemic change initiatives has the potential of furthering the understanding of the change process. The possibility of analyzing the degree to which the current participants in this research actually instigated change within the school context would also be of interest in clarifying whether the data developed through the study were representative of theories in use or simply espoused theory. Each of these areas could be considered limitations in the current study but could also be considered viable directions for future research. Additional insight could also be obtained from doing a follow-up study with staff members from school districts with leaders who have participated in change initiatives. A study of this nature could gain teachers' perspectives on the change in learning in Kansas as a result of leadership participation in change projects. Perceptions obtained from staff could provide information regarding how the learning environment has been affected by leadership involvement in change initiatives from the teachers view.

In Kansas, the majority of school communities are rural. A study designed to address the challenges unique to rural school districts in implementing change could be undertaken in order to discover a readiness for change in rural schools. Perceptions on the changing needs of society, advances in technologies, new delivery systems for learning, and the impact on the survival of rural schools could be researched. This information could have the potential to bring awareness of what new learning opportunities are available, to provide information regarding learning practices, and to assist with other challenges in learning for rural schools.

Another direction for further research includes the study of student perceptions regarding the characteristics of a learning environment that promotes student engagement and effective learning. Student perceptions could assist in determining how change initiatives have impacted resources, activities, and projects from the student perspective. The realities of growing up immersed in a digital environment are foreign to most adult educators, and understanding student perspectives of effective learning environments could provide valuable additional points of view on changes needed for learning.

The L<sup>2</sup>C Model: Leaders Learning to Change presented in this study provides an analysis of the attributes to consider when preparing leaders for systemic changes required for effective learning in the new millennium. Investigating this research is vital for school leaders to prepare for changes in the learning process in the existing environment of rapid change, where learning needs are not being met. Further studies from the perspectives of staff and students could provide insight into future changes required in learning to meet the needs of all learners.

## REFERENCES

## REFERENCES

- Alheit, P., & Dausien, B. (1999). *"Biographicity" as a basic resource of lifelong learning*. Paper presented at the annual meeting of the European Conference on Lifelong Learning, University of Bremen, Northwest Germany.
- American Society of Training Directors, & National Governors Association. (2001). *A vision of e-learning for America's workforce*. Alexandria, VA: Commission on Technology and Adult Learning.
- Argyris, C. (2001). *On organizational learning* (2nd ed.). Malden, MA: Blackwell Publishers, Inc.
- Argyris, C. (2004). *Reasons and rationalizations: The limits to organizational knowledge*. New York: Oxford University Press.
- Argyris, C., & Schon, D. (1978). *Organizational learning: A theory of action perspective*. London: Addison-Wesley.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Barnes, L. B., & Kriger, M.P. (1986). The hidden side of organizational leadership. *Sloan Management Review*, 28(1), 15-25.
- Barrios, T., Ambler, J., Anderson, A., Barton, P., Burdette, S., Feyten, C., et al. (2004). *Laptops for learning: Final report and recommendations of the laptops for learning task force*. Tampa, FL: University of Southern Florida.
- Becker, G., Withycombe, R., Doyel, F., Miller, E., Morgan, D., DeLoretto, L., & Aldridge, R. (1971). *Elementary school principals: Beacons of brilliance & potholes of pestilence*.

- Eugene, OR:: Center for the Advanced Study of Educational Administration, University of Oregon.
- Blumberg, A., & Greenfield, W. (1986). *The effective principal: Perspectives on school leadership* (2nd ed.). Boston: Allyn & Bacon.
- Bogdan, R. C., & Biklen, S. K. (1998). *Qualitative research for education*. Boston: Allyn & Bacon.
- Buckingham, M., & Clifton, D. (2001). *Now, discover your strengths*. New York: The Free Press.
- Burns, J. M. (1978). *Leadership*. New York: Harper Torchbooks.
- Cattagni, A., & Ferris, E. (2002). *Internet access in U.S. public schools and classrooms: 1994-2000* (No. (NCES 2001-071)). Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Center for Education. (2002). *Improving learning with information technology: Report of a workshop*. Washington DC: National Academies Press.
- Cook, M. (2001). *Visioning schools of the future: Perceptions of educational stakeholders on the use of scenario building techniques*. Unpublished doctoral dissertation, Wichita State University, Wichita, KS.
- Cooperrider, D., Whitney, D., & Stavros, J. (2003). *Appreciative inquiry handbook*. Bedford Heights, OH: Lakeshore Publishers.
- Crane, T., Wilson, J., Maurizio, A., Bealkowski, S., Bruett, K., Couch, J., et al. (2003). *Learning for the 21st century: A report and mile guide for 21st century skills*. Washington, DC: Partnership for 21st Century Skills.

- Daggett, W. (1998). The evolution of our education system. *International Center for Leadership in Education Newsletter*, 45, 315-319.
- Davis, S., & Botkin, J. (1994). *The monster under the bed: How business is mastering the opportunity of knowledge for profit*. New York: Simon & Schuster.
- Discovery Communications. (2005). *Discovery School*. Discovery Education. Retrieved March 21, 2005, from <http://school.discovery.com/info/aboutus.html>.
- Dooley, K. E. (1999). *Towards a holistic model for the diffusion of educational technologies: An integrative review of educational innovation studies*. Retrieved December 12, 2004, from [http://ifets.ieee.org/periodical/vol\\_4\\_99/kim\\_dooley.html](http://ifets.ieee.org/periodical/vol_4_99/kim_dooley.html).
- DuFour, R., & Eaker, R. (1998). *Professional learning communities at work*. Reston, VA: Association for Supervision and Curriculum Development.
- Dyer, K. M. (2001). Relational leadership. *The School Administrator*, 58(10), 28-31.
- Ellsworth, J. B. (2000). *A survey of educational change models*. (ERIC Document Reproduction No. 444597)
- Erlanson, D. A., Harris, E. L., Skipper, B. L., & Allen, S. D. (1993). *Doing naturalistic inquiry: A guide to methods*. Newbury Park, CA: Sage.
- Ertmer, P. A. (1999). Addressing first-and second-order barriers to change: Strategies for technology integration. *Educational Technology Research and Development*, 47(4), 47-61.
- Federal Communications Commission. (2004). *Schools and libraries division: Universal service program*. Retrieved July 29, 2004, from <http://www.sl.universalservice.org/>.
- Fullan, M. (2001a). *Leading in a culture of change* (3rd ed.). San Francisco, CA: Jossey-Bass.

- Fullan, M. (2001b). *The new meaning of educational change* (3rd ed.). New York: Teachers College Press.
- Fullan, M. (2002, 7/17/2002). The change leader. *Educational Leadership*, 59, 16-20.
- Fullan, M. (2003). *Change forces: With a vengeance*. New York: Routledge Falmer.
- Fullan, M., & Miles, M. (1992). Getting the reform right: What works and what doesn't. *Phi Delta Kappan*, 73(10), 745-752.
- Gates, B. (1999). *Business @ the speed of thought: Succeeding in the digital economy*. New York: Warner Books.
- Gatto, J. T. (2002). *A different kind of teacher: Solving the crisis of American schooling*. Berkley, CA: Berkley Hills Books.
- Gelsinger, P. (2004). *Technology and research at Intel: Architectural innovation for the future*. Santa Clara, CA: Intel Corporation.
- Gibson, I., Wyckoff, S., & Cook, M. (2004a). *School leaders and technology-rich learning environments: A focus on systems thinking, technology leadership, sustained change, and 21st century school improvement*. Paper presented at the annual meeting of the ED-MEDIA 2002, World Conference on Educational Multimedia, Hypermedia & Telecommunications, Lugano, Switzerland.
- Gibson, I., Wyckoff, S., & Cook, M. (2004b). *Technology leadership: State level initiatives changing the conversation about learning in Kansas by emphasizing leadership in a technologically rich environment*. Paper presented at the annual meeting of the Proceedings of the 15th annual meeting of the Society for Information Technology and Teacher Education, Atlanta, GA.

- Gilder, G. (1997). Fiber keeps its promise: Get ready, bandwidth will triple each year for the next 25. *2004*(September 14).
- Gladwell, M. (2000). *The tipping point: How little things can make a big difference*. Boston: Little, Brown and Company.
- Goldsmith, M., Morgan, H., & Ogg, A. (2004). *Leading organizational learning: Harnessing the power of knowledge*. San Francisco: Jossey-Bass.
- Goodman, D. J. (2000, July, 2000). The wireless Internet: Promises and challenges. *Computer*, 33, 36-41.
- Hammond, K., & Salpeter, J. (2003). *Cutting the cord: Wireless computing comes of age*. Consortium for School Networking. Retrieved March 31, 2003, from [www.cosn.org](http://www.cosn.org).
- Hesselbein, F., & Cohen, P. M. (Eds.). (1999). *Leader to leader*. San Francisco: Jossey-Bass Publishers.
- Howe, N., & Strauss, W. (2000). *Millenials rising: The next great generation*.
- Institute for Educational Leadership. (2000). *Leadership for student learning: Reinventing the principalship*. Washington, D.C.
- Intel Communications. (2005). *Converged voice video and data solutions: Tapping the revenue potential of Internet protocol networking capabilities*. Solution Blueprints. Retrieved March 5, 2005, from <http://www.intel.com/business/bss/solutions/blueprints/pdf/netcentrex0242.pdf>.
- International ICT Literacy Panel. (2002). *Digital transformation: A framework for ICT literacy*. Princeton, NJ: Educational Testing Service Center for Global Assessment.
- ISTE. (2000). *National Educational technology standards for teachers*. Eugene, OR.

- ISTE Accreditation & Standards Committee. (2000). *National Educational technology standards for teachers*. Eugene, OR: International Society for Technology in Education.
- James, J. (1996). *Thinking in the future tense: Leadership skills for a new age*. New York: Simon & Schuster.
- Joiner Jr., C. W. (1987). *Leadership for change*. Cambridge, MA: Ballinger Publishing Company.
- Joyce, B., & Showers, B. (2002). *Student achievement through staff development* (3rd ed.). Alexandria, VA: ASCD.
- Kansas State Department of Education. (2001). *KAL-Tech: Gates grant proposal*. Retrieved August 1, 2003, from [www.taken.org/gates](http://www.taken.org/gates).
- Kansas State Department of Education. (2003). *Kansas academy for leadership in technology*. The Kansas State Department of Education Website. Retrieved December 18, 2003, from [www.taken.org/kaltech](http://www.taken.org/kaltech).
- Kansas State Department of Education. (2004a). *Kansas alliance for 21st century learning*. KATCL website. Retrieved May 12, 2004, from [www.taken.org/katcl](http://www.taken.org/katcl).
- Kansas State Department of Education. (2004b). *Kansas distributed leadership academy*. Retrieved October 20, 2004, from [www.taken.org/kadl](http://www.taken.org/kadl).
- Kanter, R. M. (1999). *The enduring skills of change leaders*. Retrieved Summer, No.13, from <http://www.pfdf.org/leaderbooks/l2l/summer99/kanter.html>.
- Kleiman, G. (2000). Myths and realities about technology in K-12 schools. In *The digital classroom*. Cambridge, MA: Harvard Education Publishing.
- Kleiman, G. (2004). *Myths and realities about technology in K-12 schools: Five years later*. Retrieved April 1, 2005, from <http://www.citejournal.org/vol4/iss2/seminal/article2.cfm>.

- Knight, W. (2005). The digital cameras. *New Scientist*, 15(24).
- Lambert, L. (2003). *Leadership capacity: For lasting school improvement*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Lambert, L., Walker, D., Zimmerman, D., Cooper, J., Lambert, M., Gardner, M., et al. (2002). *The constructivist leader*. New York: Teachers College Press.
- Lashway, L., Mazzarella, J., & Grundy, T. (1995). *Portrait of a leader*. San Francisco: Jossey-Bass.
- Levin, D., & Arafah, S. (2002). *The digital disconnect: The widening gap between internet-savvy students and their schools*. Washington, DC: Pew Internet & American Life Project.
- Lewin, K. (1948). *Resolving social conflicts*. New York: Harper & Brothers.
- Lewin, K. (1951). *Field theory in social science*. New York: Harper & Row.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.
- Littky, D., & Grabelle, S. (2004). *The big picture*. Alexandria, VA: Association for Supervision & Curriculum Development.
- Lucas, G. (2005). *George Lucas educational foundation*. Retrieved March 20, 2005, from <http://www.edutopia.org/foundation/lucas.php>.
- Maine Center for Meaningful Engaged Learning, & The Institute for the Integration of Technology Into Teaching and Learning. (2005). *A model for evaluating 1-to-1 learning with laptop initiatives*. Retrieved March 15, 2005, from <http://www.mcmel.org/MLLS/eval/index.html>.
- Maxted, P. (Ed.). (1996). *For Life: A vision of learning for the 21st century*. London: Royal Society for the Encouragement of Arts Manufacturing & Commerce.

- Maxwell, J. C. (2003). *Thinking for a change: 11 ways highly successful people approach life and work*. New York: Warner Books.
- Mazzarella, J. A., & Grundy, T. (1989). Portrait of a leader. In S. C. Smith & P. K. Piele (Eds.), *School leadership: Handbook for Excellence Second Edition*. (pp. 9-27). Washington, DC: Office of Educational Research and Improvement.
- McCain, T., & Jukes, I. (2001). *Windows on the future: Education in the age of technology*. Thousand Oaks, CA: Corwin Press.
- McGraw, T., & Burdette, K. (2002). From conference room to classroom: The magic of teleportation. *Insight, 2*.
- McNamara, E., Grant, C.M., & Wasser, J.D. (1998). Using technology to support systemic education reform. In *Hanau model schools partnership project*. Cambridge, MA: Teacher Education Research Center.
- Merriam, S. B. (2001). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass.
- Moe, M. T., & Blodget, H. (2000). *People power: Fuel for the new economy*. San Francisco: Merrill Lynch.
- Moore, G. (1965). *Cramming more components onto integrated circuits*. Retrieved June 30, 2004, from <ftp://download.intel.com/research/silicon/moorespaper.pdf>.
- Moursund, D. (1997). *The future of information technology in education*. Eugene, OR: International Society for Technology in Education.
- National Center for Education Statistics. (2005). *Internet access in U.S. public schools and classrooms: 1994-2003*. Washington DC: U.S. Department of Education Institute of Education Sciences.

- National Center for Educational Statistics. (2002). *Beyond school-level internet access: Support for instructional use of technology*. Washington, DC: U.S. Department of Education.
- National Commission on Excellence in Education. (1983). *A Nation at risk: The imperative for educational reform*. Washington DC: U.S. Department of Education.
- National Telecommunications and Information Administration, & Economics and Statistics Administration. (2004). *A Nation Online: Entering the Broadband Age*. Washington DC: U.S. Department of Commerce.
- NETS Project Leadership Team. (2000). *National educational technology standards for students*. Eugene, OR: International Society for Technology in Education.
- New York State Department of Education. (2003). *Growing tomorrow's leaders today: Preparing effective school leaders in New York state*. Retrieved October 31, 2004, from [http://www.emsc.nysed.gov/csl/resources/guidance\\_document.htm](http://www.emsc.nysed.gov/csl/resources/guidance_document.htm).
- North Central Regional Educational Laboratory, & Metiri Group. (2003). *EnGauge 21st century skills: Literacy in the digital age*. Retrieved March 1, 2005, from <http://www.ncrel.org/engauge/skills/skills.htm>.
- Oblinger, D. G., & Verville, A. L. (1999, January/February). Information technology as a change agent. *Educom Review*. Retrieved January 20, 2005, from <http://www.educause.edu/ir/library/html/erm/erm99/erm991a.html>.
- Partnership for 21st Century Skills. (2002). *Learning for the 21st century*. Washington, DC.
- Partnership for 21st Century Skills. (2004). *The road to 21st century learning: A policymakers' guide to 21st century skills*. Washington DC.
- Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.

- Pitler, H., Flynn, K., & Gaddy, B. (2004). *Is a laptop Initiative in Your Future*. Aurora, CO: Mid-continent Research for Education and Learning.
- Prensky, M. (2001). *Digital game based learning*. New York: McGraw-Hill.
- Ranson, C. R. (1999). The future of rural Kansas: People, technology, infrastructure. *1999 Rural Policy Symposium: Communities in Transition: Making Good Choices for Changing Times*. Retrieved 2001, September 1, from <http://www.ink.org/public/ks-inc/rural.htm>.
- Reigeluth, C. M., & Garfinkle, R. J. (1994). *Systemic change in education*. Englewood Cliffs, NJ: Educational Technology Publications.
- Riel, M., & Becker, H. (2000). *The belief, practices, and computer use of teacher leaders*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Robinson, T. M. (1987). *Heraclitus: Fragments*. Toronto: University of Toronto.
- Ross, J. D., McGraw, T. M., & Burdette, K. J. (2003). *Toward an effective use of technology in education: A summary of research*. Charleston, SC: Appalachia Educational Laboratory.
- Sanders, J. R. (1994). *The program evaluation standards* (2nd ed.). Thousand Oaks, CA: Sage.
- Schaeffer, R. K. (2003). Globalization and technology. *Phi Kappa Phi Forum*, 83(4), 30-33.
- Schein, E. H. (1992). *Organizational culture and leadership* (2nd ed.). San Francisco: Jossey-Bass.
- Schlechty, P. (1999). *Schools for the 21st century: Leadership imperatives for educational reform*. San Francisco: Jossey-Bass Education Series.
- Schwarzer, R., & Scholz, U. (2000). *Cross-cultural assessment of coping resources: The general perceived self-efficacy scale*. Paper presented at the annual meeting of the Asian Congress of Health Psychology 2000: Health Psychology and Culture, Tokyo, Japan.

- Sega of America. (2005). *Sega History*. Retrieved March 21, 2005, from [http://www.sega.com/corporate/corporatehist.php?item=corporate\\_history](http://www.sega.com/corporate/corporatehist.php?item=corporate_history).
- Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday.
- Senge, P., Kleiner, A., Roberts, C., Ross, R., Roth, G., & Smith, B. (1999). *The dance of change: the challenges to sustaining momentum in learning organizations*. New York: Random House.
- Senge, P., Kleiner, A., Roberts, C., Ross, R., & Smith, B. J. (1994). *The fifth discipline fieldbook: Strategies and tools for building a learning organization*. New York: Doubleday.
- Sharp, R. (2004, June). *New Ways to Maximize Camera Phone Technology*. Technology@Intel. Retrieved March 20, 2005, from <http://www.deviceforge.com/articles/AT5785815397.html>.
- Stites, R. (1998). *Assessing lifelong learning technology: A guide for choosing and using technology for adult learning*. Walnut, PA: University of Pennsylvania.
- Thornburg, D. (2002). *The new basics: education and the future of work in the telematic age*. Alexandria, VA: Association for Supervision & Curriculum Development.
- Toffler, A. (1991). *Powershift: Knowledge, wealth, and violence at the edge of the 21st century*. New York: Bantam Books.
- Toffler, A., & Toffler, H. (1995). *Creating a new civilization: The politics of the third wave*. Atlanta, GA: Turner.
- TSSA Collaborative. (2001). *Technology standards for school administrators*. Eugene, OR: International Society for Technology in Education.

- U. S. Department of Labor. (2002). *Working in the 21st century*. Bureau of Labor Statistics.  
Retrieved October 10, 2004, from <http://www.bls.gov/opub/working/home.htm>.
- U.S. Department of Education. (2001). *No child left behind act*. U.S. Department of Education.  
2003, from [www.nclb.gov](http://www.nclb.gov).
- U.S. Department of Education. (2002a). *No child left behind act of 2001*. 107th Congress.  
Retrieved January 2, 2003, from <http://www.ed.gov/policy/elsec/leg/esea02/107-110.pdf>.
- U.S. Department of Education. (2002b). *No child left behind: A desktop reference 2002*.  
Washington, DC: Office of Under Secretary.
- U.S. Department of Education. (2002c). *A report on the virtual schools*. Denver, CO: Virtual  
Schools Forum.
- U.S. Department of Education. (2003). *Learning for the 21st century: A report and mile guide  
for 21st century skills*. Washington, D.C.
- U.S. Department of Education, U.S. Department of Commerce, U.S. Department of Labor,  
National Institute of Literacy, & Administration, S. B. (1999). *21st century skills for 21st  
century jobs*. Washington, DC: U.S. Government Printing Office.
- Wesley, M. T., & Franks, M. E. (1994). *The virtual classroom and vertically integrated  
technology training for education: New paradigms for telecommunications technology  
training of school personnel*. Paper presented at the annual meeting of the Mid-South  
Educational Research Association, Nashville, TN.
- Wheatley, M. J. (1999). *Leadership and the new science: Discovering order in a chaotic world*.  
San Francisco: Berrett-Koehler.
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed. Vol. 5). Thousand Oaks,  
CA: Sage.

## APPENDICES

## Appendix A – Letter of Consent

Dear Participant

You are invited to participate in a Wichita State University doctoral dissertation study of school leaders who have participated in the KAL-Tech and KATCL initiatives in the state of Kansas. The purpose of this study is to examine the perceptions of school leaders who have participated in both KAL-Tech and KATCL initiatives regarding the need for change in the learning process; the type of dialogue, reading, and activities utilized; the impact of these activities on their readiness to reconsider their views on learning and systemic change; and the processes they consider essential in supporting others to undergo a similar change in their thinking regarding systemic change and learning.

You were purposively selected as a possible participant in this study because you participated in both KAL-Tech and KATCL, as either a mentor or team member. KATCL mentors who volunteer to participate will be interviewed. KATCL teams who volunteer will be asked to participate in a team focus group. The data collected will remain confidential. Interviews and focus group participation will be at mutually convenient times, arranged through team mentors, and will last approximately one hour.

No minors or members of vulnerable populations are participating in this study. There are no known risks or discomforts connected to this study.

The results of this study will provide Kansas school leaders with information that may benefit school leaders in several ways. Findings from this study will provide data designed to identify the factors that may (a) contribute to systemic change needed in schools; (b) reinforce the thinking of those school leaders who see a need for systemic change; (c) emphasize the need to assist other school leaders to understand the necessity for systemic change in schools; and (d)

emphasize the impact of technology and global communications for enhancing the learning environment. These findings will provide a means for school leaders to examine ways to improve the system and organizational structure of learning for the 21<sup>st</sup> century.

Participation in this study is voluntary. You are under no obligation to participate. Should you decide not to participate in the study, your decision will not affect your future relations with Wichita State University. Your privacy will be protected and any information obtained in this study in which you can be identified will remain confidential and will not be disclosed. By signing one copy of this form, you are granting your permission to participate in this study. Findings from this research may be presented at national conferences or result in publication in scholarly journals.

If you have any questions about this research, you can contact Dr. Ian Gibson at 316-978-5696 or Sherry Goodvin at 316-729-6088. If you have questions pertaining to your rights as a research subject, you can contact the Office of Research Administration at Wichita State University, Wichita, KS 67260-0007, telephone (316) 978-3285. You may keep this cover letter and explanation about the nature of your participation in this study and the handling of the information you supply.

Sincerely,

Sharon Bever Goodvin, Wichita State University, Doctoral Student

Signature of Subject: \_\_\_\_\_ Date: \_\_\_\_\_

Witness: \_\_\_\_\_ Date: \_\_\_\_\_

Appendix B - Interview Protocol

Hello! Thank you for your willingness to participate in this interview today! My name is Sherry Goodvin. I am a doctoral student in the Wichita State University Educational Leadership Doctoral Program. I am conducting a study on the perceptions of school leaders who have participated in both KAL-Tech and KATCL initiatives regarding the need for change in the learning process; the type of dialogue, reading, and activities utilized; the impact of these activities on their readiness to reconsider their views on learning and systemic change; and the processes they consider essential in supporting others to undergo a similar change in their thinking regarding systemic change and learning. As a result of this study, I will present the findings in my final dissertation. Today I would like to hear your perceptions regarding the role of administrators in creating systemic change in Kansas schools.

We will be on a first name basis, however, no names or other identifying information will be used when reporting the results of this interview. I am interested in all comments you make either positive or negative. With your permission, I will tape record our session so that I can more carefully review your ideas. I'll also summarize your comments at the end of this interview to ensure that I understood you. This session will last approximately one hour. Do you have any questions before we begin?

#### Interview Questions

1. Please state your name? What is your role as a school leader? How long have you been in this role?
2. Describe your involvement in the KATCL initiative.
3. Describe your perception of Kansas schools.
4. Describe your perception regarding the need for change in Kansas schools.
5. What is impacting that change?

6. What is the role of technology in implementing change?
7. What influenced your personal level of readiness to accept the need for change in Kansas Schools?
8. What is the role of school leaders in implementing systemic change?
9. What experiences have you had that have promoted your change of thinking regarding your role in the need for systemic change in schools.
10. How does KAL-Tech/KATCL participation assist leaders in their role?
11. Are these initiatives effective in promoting change in Kansas schools?  
In what way?
12. What can be done to assist other leaders in defining the need for change?
13. Is there anything else you feel is important to add to this discussion?

## Appendix C - Focus Group Protocol

- My name is Sherry Goodvin and I am a doctoral student at Wichita State University in the Educational Administration & Supervision Doctoral Program. I am employed by the Maize School District as Director of Administrative and Student Services.
- I have an assistant, who is also employed by the Maize School District, who will sit off to the side and act as a time keeper and observer. She will be taking field notes as the discussion takes place.
- You were selected to participate in this discussion because you were members of a Kansas Alliance for 21<sup>st</sup> Century Leadership team.
- Please feel free to share your opinion, even if it differs from the opinions expressed by others.

### Explanation of Project:

- I am studying the perceptions of school leaders who have participated in both KAL-Tech and KATCL initiatives regarding the need for change in the learning process; the type of dialogue, reading, and activities utilized; the impact of these activities on their readiness to reconsider their views on learning and systemic change; and the processes they consider essential in supporting others to undergo a similar change in their thinking regarding systemic change and learning.
- This focus group will last approximately one hour.

Explanation of confidentiality: Distribute consent forms, give participants the opportunity to decline and leave if they wish.

- It is important that whatever is said here is left here.
- We all need to protect each other's privacy

- When the data from this focus group is reviewed, no names will be associated with the data.
- Your confidentiality in participation, as well as, your anonymity in relation to any comments made will be protected.
- If you don't feel comfortable participating in this focus group for any reason, please feel free to leave at this time. (Pause, and allow members to leave)
- You will each need to sign a consent form acknowledging your willingness to voluntarily participate in this study.
- (Distribute consent forms, and wait until they are returned)
- With your permission, I will record our focus group.
- Recording our group discussion will allow me to concentrate on the stories you are sharing.
- I will provide a summary of the theses presented in this focus group at the end of the session to ensure that your were accurately understood.

#### Creation of a Safe Environment

Before we begin, I would like to share a few ground rules:

1. If you are asked a question and choose not to answer or would like to have more time to think about what you have to say, please say PASS.
2. It is important that we honor each person's right to speak. Please allow others to finish their thought, before making comments.
3. We will use first names in our discussion; however no names will be used in reporting the results.
4. You can be assured of complete confidentiality

5. We only have one hour to complete this focus group. If I occasionally interrupt what you are saying, please understand that my interruption is not a reflection on comments, but an effort to move the discussion along. If additional time is needed to explore a topic further, I may request additional time with specific individuals.

#### Focus Group Questions

1. Please state your name, your role as an administrator, how long you have been involved in education.
2. What motivated you to become a school leader?
3. Describe your perception of Kansas schools.
4. Describe your perception regarding the need for change in Kansas schools.
5. What is impacting that change?
6. What is the role of technology in implementing change?
7. What influenced your personal level of readiness to accept the need for change in Kansas Schools?
8. What is the role of school leaders in implementing systemic change?
9. What experiences have you had that have promoted your change of thinking regarding your role in the need for systemic change in schools.
10. How does KAL-Tech/KATCL participation assist leaders in their role?
11. Are these initiatives effective in promoting change in Kansas schools?  
In what way?
12. What can be done to assist other leaders in defining the need for change?
13. What can be done to ensure that school leaders are providing the leadership needed for the future of Kansas students

14. Is there anything else you feel is important to add to this discussion?

#### Debriefing

- Share the themes of discussion, and what was said by participants.
- On behalf of the Wichita State University Educational Administration and Supervision faculty and students I would like to thank you for your participation in my research study.
- I would also like to restate the fact that what you have shared today is confidential.
- No part of our discussion that includes names or other identifying information will be used in any report, display, or other publicly accessible media coming from this research.
- Finally, I'd like to provide you with a chance to ask any questions that you might have regarding this research.
- Are there any additional questions?
- Thank you so much for your time, have a great evening.

NOTE: Protocol has been based upon others used in field study work in the WSU Field Study Program.

(See Calabrese, R., Goodvin, S. & Niles, R. (2004). A study of the traits and attitudes of effective teachers in North High School. Unpublished Ed.D. study, Wichita, KS: Wichita State University.)