NO SILVER BULLET: A DELPHI STUDY OF EMERGENT LEADERSHIP IN MISSOURI HIGH-PERFORMING, HIGH-POVERTY SCHOOLS

A Dissertation

presented to

the Faculty of the Graduate School

at the University of Missouri-Columbia

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

---

by

KEVIN T. GODDARD

Dr. Peggy Placier, Dissertation Supervisor

MAY 2010

The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

NO SILVER BULLET: A DELPHI STUDY OF EMERGENT LEADERSHIP IN MISSOURI HIGH-PERFORMING, HIGH-POVERTY SCHOOLS

presented by Kevin T. Goddard,

a candidate for the degree of doctor of education,

and hereby certify that, in their opinion, it is worthy of acceptance.

Dr. Peggy Placier

Dr. Joe Donaldson

Dr. Dan Cockrell

Dr. Juanita Simmons

Dr. Monica Beglau

DEDICATION

I could not complete this research and degree without dedicating the end result to the other people who have sacrificed as much as I have to make this dream a reality:

…First and most important, my wife, Melanie, for putting up with my sustained absences for the last seven years both in body and mind. She also put up with long ramblings about topics she had no interest or knowledge in just because they were of interest to me;

…My kids, Ariana, Savannah, Olivia, Kyra, Emma, Brent, Harrison, and Layla, for forgiving me of the many important milestones I missed. Hopefully they learned something from all of this and can now quit saying, “Can we do that when your paper is done?”;

…God, for sparing my family in the crash and providing all we needed during the difficult time that followed;

…Mom and Dad for preparing me with the urgent understanding of the value of education and supporting me financially, mentally, and with prayer;

…And finally, cousin Wayne, for providing a roof over my head during trips to the university, and for pushing and encouraging me at the very end by completing his doctorate and making me just jealous enough to try that much harder…

ACKNOWLEDGEMENTS

I would like to thank…

Dr. Peggy Placier for giving me the space for novelty with enough degrees of freedom to allow this project to "emerge" from my many interests and professional experiences as a principal in Missouri public schools. Dr. Placier brought me back to reality a number of times. She interceded with various departments to get my paperwork straight and ensure I could continue when personal challenges seemed to block the way. Dr. Placier's willingness to come along for the ride when I could barely articulate my vision for this project allowed me to learn much more than I could ever have imagined about so much more than how to be a better leader in education.

Dr. Joe Donaldson for being straightforward and forward thinking enough to push the quality of excellence in my inquiry even when he was just a spiritual presence who caused me to stop and ask myself, "What would Dr. Donaldson say about this?" His reputation and background with open systems was important to my research.

Dr. Dan Cockrell for catalyzing the evolution of my thinking from simple to complicated allowing me to then find my own way from complicated to complex. Late nights and long weekend reading and writing assignments and energizing conversations about metacognition built the cornerstones and arches that "buttress" my new paradigm.

Dr. Juanita Simmons' because her presence kept the notion of social justice and empowerment at the forefront of my inquiry. In class, she was very passionate about equity and equality and created an impression in me of being sensitive to underprivileged populations of students to the extent that it became a part of the focus of my research and led me to serve as a building principal on the Zuni Reservation in New Mexico.

Dr. Monica Beglau for willingly stepping in late in the game to fill a necessary spot on my committee. Her pragmatic approach and thinking reinforced my belief that something directly applicable to the public school leadership must come out of my study.

Several friends have served as guideposts: Dr. Marvin Berkowitz, I express gratitude and affection for being a role-model of outstanding character, academic excellence, and fortitude which has gotten me through some tough times as a public school leader. Dr. Travis Hux, I appreciate the constant reminder to simply, "Get it done!" from a friend with no stake in the final outcome and who more than once chided me, "Your problem is that you want to change the world" which ensured me I was on the right track. And to Dr. Wayne Goddard who beat me to the finish line but caused me to run much, much faster.

To the Missouri principals in outstanding Missouri schools with a significant population of high-poverty students who agreed to help me with this study, I express profound gratitude for their investment of time and effort. This was not always an easy project to fit in their already demanding schedules. These principals oversee high-performing schools that are faced with a state accountability test that is consistently ranked one of the most rigorous in the nation.

To the University of Missouri and the Department of Educational Leadership and Policy Analysis, I express appreciation for pushing me well beyond what I believed were my personal limits with an academically punishing program. I will never forget Dr. Cockrell telling our class when we were complaining about the level of work interfering with our jobs and families, "Not everyone deserves a doctorate and we are trying to weed you out." Thanks to everyone for helping me not become a weed.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

NO SILVER BULLET: A DELPHI STUDY OF EMERGENT LEADERSHIP IN MISSOURI HIGH-PERFORMING, HIGH-POVERTY SCHOOLS

Kevin T. Goddard

Dr. Peggy Placier, Dissertation Supervisor

ABSTRACT

This dissertation studied how principals allow leadership to emerge in high performing, high poverty schools (HP2S) in Missouri. Complexity science, self-organization, and emergence are keys to understanding how leadership can impact student performance in low-performing schools. A Trend Model Delphi implementing lead-user strategy yielded mixed data revealing the leadership practices of 6 expert principals in Missouri HP2S. Results indicated the Domains and Stages of Emergence can be a useful framework for categorizing interactions in HP2S. The domains of Identity(D1), Information(D2), and Relationships(D3) overlap to open a novel space for stages to function and allow punctuated renewal. The stages of Networking(S1), Commitment to a Community of Practice(S2), and Strengthening and Diversifying Connections(S3) help explain the emergence of a complex system capable of multi-dimensional learning (MDL) across multiple dimensions of time and in an infinite number of spaces including the space for novelty for the emergence of leadership and innovative practice. Further results indicated D3 is the largest, most important domain to which a principal must attend. S2 is clearly the largest stage of emergence rated as the most important in HP2S. Out of 9 intersections of domain and stage, 3 produce emergent properties: 3rd order change, Critical Praxis, High-capacity building. Of 9, 4 are clearly more significant than the others: *Commitment of the community of practice to the identity of the organization*; *Strengthening and diversifying connections within relationships in the network of a community of practice;*

Continual evaluation of information within the diverse network of a community of practice; Commitment to others in a community of practice. In short, leadership is something that is shared with and emerges from many diverse agents interacting with the principal during processes designed to achieve HP2S. Findings present principals with order parameters they can feed into a low-performing school to facilitate transition to high performing. Other areas for further study include replication across geographically and demographically diverse areas of the state, nation, and globe to fully develop a model of emergent leadership as well as high-quality professional development opportunities.

.

CHAPTER ONE

Introduction

Background

After several years under NCLB, leaders in education have yet to see much evidence that the legislation will cause failing schools in marginalized school communities to turn their schools around (Brady, 2003; Schemo, 2007). Nonetheless, turning back to the way education used to occur in the U. S. before NCLB is not an option. In the mix, turbulence, and stress of change, emerging careers will definitely help formulate the new paradigm, and those who embrace the innovation and unpredictability in education today will lead with success and fulfillment (Fowler, 2004). Educational leaders need a paradigm of education that allows anxiety about change to be contained by directive leadership while moving an organization into the 'space for creativity' opened up by providing freedom of expression, encouraging risk, and controlling fear (Stacey, 1996).

The field of education sits among the middle of all other fields connected by a network of diverse interests. Boundary conversations between other fields as they struggle for resources and try to move their interests into dominant positions impact the field of education. Education also benefits from this impact as ideas and concepts cross the boundaries from other fields into education. Evolutionary biology and social science have provided intriguing concepts of complexity and sociocultural capital that have crossed during my pursuit of literature related to the notion of capital in successful schools (Lareau, 2003; Levin, 2002; Swartz, 1997).

"The theoretical lens of capital is useful in understanding how communal practices become both resources for student participation in…activities and a means for accessing additional resources that afford…learning" (Seiler & Elmesky, 2007, p. 404) while the science of complexity highlights the multidimensional nature of complex adaptive systems, such as schools, coexisting in biological and ecological systems while interacting, coadapting, and coevolving with myriad other complex adaptive systems such as social classes, businesses, communities, cities, etc. (Stacey, 1996). "Leadership and educational researchers equally argue there is tremendous potential for the metaphorical significance of complexity science in organizational dynamics" (Gilstrap, 2005, p. 56).

As education searches for a new paradigm, educators would be well-served to remember that a paradigm is a *socially* shared set of beliefs which both informs and constrains educational practice (Church, 2005; Fincher & Tenenberg, 2006). Developing new theory will more than likely only be a futile search to find a system that gives us a tool to accurately predict behavior that will turn around a failing school. Compiling lists of principles and practices will only give us unsustainable, general rules without any power to predict how they will manifest in unsuccessful schools (Marzano, Waters, & McNulty, 2005). The science of complexity highlights the ideal that "prediction isn't the essence of science. The essence is comprehension and explanation" (Waldrop, 1992, p. 255). Further, theories such as critical theories, including feminism and postmodernism, address cultural reproduction and biases that marginalize certain groups but do not allow enough for local contexts and the overall complexity of education to be important factors beyond the general characteristics of marginalized groups. A social constructivist view of

education sees educators co-constructing their identity in education and their understanding of the identity of others in the school community in an iterative process with others in the school community co-constructing their identity and the identity of the educators in the same fashion (Nasir & Hand, 2006; Stacey, 1996).

In complex adaptive systems such as education, the organism or entity continually evolves becoming increasingly more complex, or "ratcheting up" its complexity based on previous states in which it has existed to make successive generations a better fit with the environment (Heylighen, 2002; Stacey, 1996; Waldrop, 1992). In *Policy Studies for Educational Leaders* (2004), Fowler outlines major periods of educational policy in the United States. The public became dissatisfied with public education, crystallized around "A Nation at Risk" in 1983. Other countries were narrowing the economic gap with the U. S. A global market was surfacing and the world seemed to be "shrinking." The emergence of these issues that threatened U.S. domination were blamed on the failure of U. S. public schools.

From this uncertainty and dissatisfaction, three reforms are currently taking place. The first type of reform is to complete, restore, or update the Common School through curriculum alignment, inclusion, increased graduation requirements, longer school day/year, new technology, school finance reform, state/national standards and tests, and systemic reform. The second type of reform is to professionalize teaching through authentic assessment, differentiated staffing, increased teacher salaries, new teacher induction programs, peer evaluation, site-based decision making, teacher mentoring, teacher teams, and an emphasis on elimination of the factory model of teaching which does not allow for children to become critical, creative thinkers. The third type of reforms

is to privatize/marketize education with charter schools, open enrollment, magnet schools, merit pay, privatization, and vouchers.

Currently, legislators are borrowing from all three reform efforts, sometimes selecting concepts and practices that contradict each other. The new paradigm that is forming is also being influenced by reform in other countries as well. Reform is going to transition over several decades, more than any of our careers, and we will grapple with continuous change. Teaching will not be fully professionalized because of the general public belief to know as much as educational experts. The new paradigm will have facets of the Common School and marketization including mandatory testing, vouchers or open enrollment, etc. (Fowler, 2004). This conglomeration of contradictory policy and politicking fomented in 2002 when No Child Left Behind (NCLB) set goals for universal proficiency for all students. NCLB pushed anxiety levels past urgency to panic resulting in no emergent creativity. Instead, a scramble occurred in education for cookie-cutter recipes, and cheating and other unethical behaviors were used by educators to avoid federal and state consequences for not meeting proficiency goals (Barr & Parrett, 2007).

Schools throughout time and in the U. S. "were established as much for moral and social reasons as for academic instruction" (Noddings, 2006, p. 3) with the belief that "a thorough and efficient education would enable all students to fulfill their role as a citizen; to participate fully in society and in the life of their community; and to appreciate art, music, and literature" (Verstegen, 2006, p. 63). U. S. schools began to move away from preparing responsible citizenry during the 1900's when "access for all" occurred simultaneous to administrative progressivism that saw education as a means to reproduce the division of labor for social efficiency (Rury, 2005; U. S. Department of Education,

1998). Now, with the focus on "proficiency for all" under the guise of social justice, the education system continues to serve three primary functions reinforced by NCLB's limited definition of "proficiency" to minimal standards in reading and math: conservation of the American cultural heritage, socialization into a cultural tradition, and cultural reproduction of existing socioeconomic classes (Swartz, 1997).

Educators used to be viewed as the "experts" in regards to how schools were run. Now the public, policymakers, and courts are active in educational reform efforts. The result so far has been the setting of the achievement bar by courts and legislation at "minimally adequate" while forcing accountability by displaying "dismal records publicly" (Walk, 1998, p. 2; Henig, Hula, Orr, & Pedescleaux, 1999; Verstegen, 2006). Proponents claim NCLB "has suddenly focused the spotlight on the effectiveness of America's schools in teaching the children of poverty" (Barr & Parrett, 2007, p. 10). In the end, NCLB simply focuses on the consequences of failure instead of offering meaningful, sustainable reform that requires change in state and national political jurisdictions, social policy, and economic opportunity for marginalized populations including those in poverty (Henig, Hula, Orr, & Pedescleaux, 1999; Machtinger, 2007).

While "setting high standards for performance is a first step" (U. S. Department of Education, 1998, p. 5), NCLB jumped straight to accountability and left standards up to individual states with each state defining "proficient" differently. NCLB further required schools to describe how they will build capacity (Abrego, Rubin, & Sutterby, 2006). Brown (2007) describes the shortsightedness of this approach:

> From a capacity standpoint, simply implementing standards will not address key pedagogical and structural issues…the influence of non-academic factors such as socio-economic status on student performance raise concerns as to whether articulating content and performance standards is the best approach to improve

> student performance…As more policy-makers structure the entire education system as a basic service, the goals of such a system become simply providing students with a limited set of skills for the job market…Anything beyond that is the responsibility of the consumer. (p. 639, 640, 659)

The lack of complexity in approaching education as "a basic service…providing students with a limited set of skills" is particularly limiting to low socioeconomic (SES)/ marginalized groups who have less capital to invest in realizing success and learning beyond the basic skills prescribed by the legislation of NCLB (Brown, 2007).

Other simplistic notions of NCLB fly in the face of how complex a task education has become. NCLB touts school choice as a tenet that will "save" education. Choice presumes "the creation and realignment of schools based on a market economy approach is the silver bullet which inequality in education can ultimately be reduced" (Portes, 2005, p. 174). Proponents of choice sing its praises without describing how competition will help schools find additional resources to provide a more rigorous curriculum or locate a new pool of high-quality teachers and administrators from which districts can recruit. At the same time, these efforts threaten to drain away higher SES students who will be able to take advantage of choice options while further damaging the school's chances of making "Adequate Yearly Progress" (AYP) toward proficiency standards (Portes, 2005).

"Reform efforts largely fail to acknowledge the relationship between the social, cultural, economic, and historical positions of the students, and how these factors influence classroom interactions and access to learning inside the school" (Seiler & Elmesky, 2007, p. 392). Nesbit (2006) warns,

> Any pedagogy that ignores learners' experiences and culture is a form of ideological imposition that reflects a particular balance of political and social power…a class perspective on teaching regards learners' knowledge and

> experiences and their development of critical awareness as key parts of the curriculum itself. (p. 180)

Teaching should promote praxis, as students consider cultural and social practices and values, as well as a sense of agency in students as being actors within their school community, nation, and world who can make a difference in their own lives as well as the lives of other marginalized populations. AYP under NCLB places such high-stakes demands on ensuring every student is proficient in literacy and numeracy that schools are afraid to dedicate resources to the development of social and cultural capital and building capacity within the school community. Schools are worried that for want of a nail, the kingdom will be lost, but they may very well be shoeing the wrong horse. Lambert (2007) pleads, "Don't limit the process of school improvement to focus on NCLB-type testing and assessment. That's so crippling to everyone involved" (p. 2).

Indeed, schools which do not see a way out of the intense scrutiny generated by NCLB seem to abandon the efforts of past decades of educators and ignore the desire of democratic society to instill citizenship and democracy, good character and social conscience, critical thinking, commitment, and global awareness through a well-rounded American school experience. Schools have taken drastic measures to meet "minimum standards" of accountability by eliminating pull-out programs, lengthening the school day, etc., but at what cost to children (Barr & Parrett, 2007; Noddings, 2006; Schutz, 2006)? Student achievement is more than minimum standards; achievement is the dynamical interaction of "multiple measures of development and performance," including "academic performance, resiliency, and equitable outcomes for all students" (Lambert, 2003, pp. 6-7). Dagget (2005) believes reform initiatives in successful schools encompass so much more than proficiency in math and reading. Such initiatives include a culture of

efficacy, the use of data, relevance, a framework to organize curriculum, multiple pathways based on agency, high expectations with accountability for continuous improvement, professional development, parent and community involvement, safe and orderly schools, and leadership development.

Simplification of understanding leads to rules that turn into large-scale simplicities "mistaken as the way things really are" (Davis, Phelps, & Wells, 2004, p. 4). NCLB has simplified the definition of successful reform ultimately redesigning education to fail every school by 2014. Attempts to bring a market-competition model through inequitable funding levels, unequally distributed quality teachers, unfunded federal mandates of NCLB, and a "gauntlet" of technicalities while settling for minimum standards suggest failure may be the result open-market proponents are hoping for to give big business a slice of the "education pie" while keeping the marginalized populations of America in their place (Barr & Parrett, 2007; Church, 2005). Others believe "we cannot accomplish our academic goals without a purposeful and thoughtful focus on social development" (San Antonio, 2006, p. 39).

"Our public school systems were not designed to focus on struggling students—they were designed to serve those prepared and supported externally to achieve" (Barr & Parrett, 2007, p. 72). The history of American public education is very important because a look back lets us see a pattern of emergence over time. Now that educators are aware of it and can see the benefit emergence has had thus far in moving schools toward social justice, education needs to embrace emergence and let equity unfold. Further development of this new paradigm requires a closer look at sociocultural capital, capacity

building, and the successful practices occurring in high-performing, high-poverty schools (HP2S) today.

Statement of the Problem

Increasing demands of accountability from non-educators such as legislators, advocacy groups, parent organizations, and the courts has put pressure on all schools to produce acceptable academic performance from the entire student population across all demographics. High poverty schools are ill-equipped to meet these demands with each school facing problems unique, regardless of similarity, to their specific sociocultural context. Educational leaders, principals in particular, are desperate for solutions to meeting these overwhelming demands and challenges while dealing with marginalized student populations whose cultural predispositions are a poor fit with the expectations of the predominantly middle-class educational machine (Barr & Parrett, 2007; Chenoweth, 2007; Lambert, 2006; Lareau, 2000; Lareau, 2003).

A blend of complexity science and sociocultural capital offers a chance for principals to meet the specific needs of local school communities. An archetype, or metaparadigm, of educational leadership in schools as complex adaptive systems could provide the cognitive framework for principals to negotiate resources into their school site. This negotiation helps the organization sustain the phase transition between order and chaos where agents can create periods of punctuated renewal. The continuous pursuit and evaluation of progress towards higher fitness peaks should result in a more socially just environment for all learners. The results of this study can be used as a metaparadigm of educational leadership around which principals can organize their personal leadership platform (Bloch, 2008; Brady, 2003; Cohen & Ball, 1999; Daresh, 1985; Darling-

Hammond, 2006; Fullan, 2006; Goldstein, 2001; Goldstein, 2005; Heylighen, 2002; Lambert, 2003; Lattuca, 2002; Levin, 2002; Mulford & Moreno, 2006; Nasir & Hand, 2006; Plsek, Lindberg, & Zimmerman, 1997; Rury, 2005; Schaughency & Ervin, 2006; Semetsky, 2005; Stacey, 1996; Stinson, 2006; Swartz, 1997; Waldrop, 1992; Wheatley, 2006a).

Purpose of the Study

With such an apparent break from past thought and practice occurring in the current education scene, how do education leaders begin to form a mental construct, a new paradigm, an archetype of where education is headed? What lens would begin to allow people working in or concerned with the field of education to "see" the DNA behind HP2S (Fowler, 2004; Stacey, 1996; Waldrop, 1992; Wheatley, 2006a)? *The purpose of this study is to explore the cognitive framework for a new metaparadigm of emergent leadership as suggested by the literature and analyzed through the perspective of acting principals in Missouri high-performing, high-poverty schools.* The macroscopic trends evident when viewing processes in HP2S through the combined lenses of complexity and capital promise exciting new possibilities of ensuring social justice for diverse agents involved in the education process. An understanding of how to keep schools from reproducing cultural capital could release the current hold on the marginalized population from its non-dominant position. Principals facing increasing demands for accountability can utilize a metaparadigm of emergent leadership while exploring their individual leadership styles in unique educational contexts.

Research Questions

To meet the research objective, the following research questions were explored:

Does complexity science contribute to an understanding of how leadership in high-performing, high-poverty (HP2) schools emerges?

In what ways do principals in HP2S allow capacity for high student performance to emerge from the current school context to sustain successful school reform? A Delphi technique was used to establish consensus among a panel of Missouri principals in high performing, high poverty schools. These principals had a minimum of six years experience as a principal.

Assumptions of the Study

In conducting this study, the following methodological assumptions were made:

1. The Delphi Method would produce emergent themes from "collective intelligence" more valid than decisions made by an individual (Turoff & Hiltz, 1996).
2. A Delphi panel could be convened representative of educational leaders who had served in HP2S through the process of reform that would be as valid an expert panel as in any other research method (Linstone & Turoff, 1975/2002).
3. The panel of experts would respond to the prompts and questions honestly (Wat-Aksorn, 1999).

Delimitations of the Study

The study was delimited in the following ways:

The Delphi technique was used to establish consensus among principals in Missouri HP2S. Therefore, the scope of the study was limited to pedagogical factors and considerations of emergent leadership of which principals in high poverty Missouri schools should be aware.

Definitions of Key Terms and Phrases

For a more complete Glossary of Key Terms and Phrases, see Appendix A.

Capacity

"Within the context of systemic reform, capacity is the ability of the education system to help all students meet more challenging standards" (O'Day, Goertz, & Floden, 1995). Fullan describes a system's capacity as partially dependent on its ability to gain material and conceptual resources (Marzano, Waters, & McNulty, 2005).

Complex Adaptive System

Complex adaptive systems have many parts cooperating and competing. All the systems and agents working together, coadapting and coevolving, actually account for what is happing on local and global scales (Stacey, 1996).

Emergence

Emergence can be understood as "building blocks at one level combining into new building blocks at a higher level….[where] the whole is greater than the sum of its parts" (Waldrop, 1992, pp. 169, 288).

Emergent Leadership

Emergent leadership is informal leadership within an organization created by the need to survive and grow in the face of change and distributed across social networks to capture diverse skill sets and knowledge (Watson & Scribner, 2005; Watson & Scribner, 2007; Wheatley, 2006a).

High-Performing, High-Poverty School(s) (HP2S)

Chenoweth (2007) identified HP2S with the following criteria: 1. A significant population of children living in poverty and/or a significant population of children of

color; 2. Either very high rates of achievement or a very rapid improvement trajectory; 3. Relatively small gaps in student achievement in comparison with achievement gaps statewide; 4. At least two years' worth of data; 5. In the case of high schools, high graduation rates and higher-than-state-average promoting power index; 6. Adequate Yearly Progress; 7. Open enrollment for neighborhood children—that is, no magnet schools, no exam schools, no charter schools.

Marginalized

Throughout U. S. history, poor and minority individuals have been pushed to the edges of mainstream society, or "marginalized" (Barr & Parrett, 2007).

Order Parameters

A concept introduced by German physicist Hermann Haken in 1981, order parameters govern the emergence of phenomenon at the global level from complex systems (Goldstein, 1999). Order parameters are variables introduced as energy into the system causing bifurcations, or changes in the self-ordering process. As more are introduced, the number of possible configurations the system could move towards increases distancing the system further from equilibrium and opening the system up to positive feedback. Order parameters have also been more commonly called "control parameters", but for the purposes of this study "order" seems more accurate to the notions of agency and social justice than the word "control" (Heylighen, 2002; Waldrop, 1992).

Punctuated Renewal

Equilibrium has to be redefined for complex adaptive systems to mean a state of tension as opposed to a state of rest (Waldrop, 1992). The science of complexity looks at systems as moving through phases of equilibrium, and renewal, as punctuated equilibrium.

However, since existing in the phase transition where renewal occurs is more desirable to a complex adaptive system to ensure maximal growth and survivability, successful schools seemingly experiencing punctuated renewal (Brady, 2003).

Sociocultural Capital

Cultural meanings "carried across generations…and created and recreated in local contexts" to mediate "human activity and thought" (Nasir & Hand, 2006, p. 458).

Importance of the Study

HP2S highlight the need for a new paradigm based on the science of complexity. Organizations have been described as complex, living systems of interacting human agents coadapting and coevolving in multidimensional fashion across time and space to create, evaluate, and store organizational knowledge and learning (Stacey, 1996). Born of the great minds surrounding the development of the atomic bomb, the revolution of computer science, and divergent economic theories, the science of complexity has found a home in the hard sciences such as biology, chemistry, physics, and mathematics while the softer science of education has only in the last decade begun to notice complexity as a potential source for attempting to understand the nature of the human systems that make up a school community (Berliner, 2002; Waldrop, 1992). The basic premise that a complex, adaptive system cannot make predictions about outcomes longer than very short term flies in the face of the current educational practice of long-term strategic plans, comprehensive school improvement plans, and goal setting with detailed action steps (DuFour & Eaker, 1998; Wheatley, 2006). If complex systems are truly only knowable in the very short term, how can leadership take advantage of the lessons the science of complexity has to offer? Understanding the nature of complex systems and how those

systems hold the ability to continually renew themselves offers building level leadership the exciting possibility of imagining ways to push those complex systems to the razor's edge of order and chaos. Exotic evolutionary notions of order, chaos, phase transition, order parameters, self-organization, fitness, creativity, and emergence define a complex system's constraints for learning and renewal giving school communities the capacity for agency and social justice within and across boundaries defined by their sociocultural capital (Heylighen, 2002; Nasir & Hand, 2006). In other words, we may be able to conceptualize a new, encompassing cognitive archetype, or metaparadigm, of emergent leadership where capacity building in the complex school environment is driven by a principal's ability to focus the collective school community network's continual efforts for self-improvement on the sociocultural capital at hand in any given educational setting (Lambert, 2006).

Summary

Chapter One has stated and described the need to view leadership patterns in high performing, high poverty Missouri schools to inform a metaparadigm of emergent leadership that could lead to higher student performance in other Missouri high poverty schools. The purpose and importance of the study has been discussed with research questions presented. Assumptions, delimitations, and key terms the reader will encounter were discussed.

Organization of the Study

This study will consist of five chapters, a reference list, and appendices. Chapter One introduces the problem giving a background and describing the importance and purpose of the study. Chapter Two reviews a broad scope of related literature and

references the appendices which include more extensive background of key concepts that were too lengthy to include in the body of the study. Chapter Three covers the related literature significant to the research method and then describes the procedures used to complete this particular Delphi study. Chapter Four presents verbal description, tables, and figures depicting the analysis of results from the study. Finally, Chapter Five summarizes the study with findings, conclusions, implications, and recommendations for future research.

CHAPTER TWO

Review of Related Literature

Introduction

"Much of what we can discover has not been there from the beginning but is yet to happen" (Stacey, 1996, p. 70).

Current education paradigms do little to embrace the highly complex, relational nature the totality of the interaction between leadership, organization, historical context, sociocultural capital, and social justice demands. As education leaders act, internal and external agents and groups react, fads come and go, family and community demographics and values evolve, school capacity ebbs and flows, society moves towards a more global boundary awareness. As time simply passes, education cannot continue to rely on reductionistic explanations of cause and effect when so many variables are obviously interacting to produce a very complex whole that requires holistic treatment (Noddings, 2006). Embracing all of life from single cells to humans, from ant colonies to organizations to societies, complexity science seeks to understand how learning systems self-organize, sustain, and co-adapt to and within their environment (Bloch, 2005; Davis & Simmt, 2006; Levin, 2002).

Our first research question asks, "Does complexity science contribute to an understanding of how leadership in high-performing, high-poverty (HP2) schools emerges?" "An increasing number of educational researchers and practitioners are becoming aware of the potential of complexity in stimulating new insights and understandings about learning and teaching" (Davis, Phelps, & Wells, 2004, p. 3). Educational leaders, foremost concerned with the success of their school, can approach

local, context-specific reform by examining effective schools research through a lens of complexity. “These steps will not change the world, but…can start changing a school” (Chu Clewell & Campbell, 2007, p. 175).

The Lens of Complexity

Complexity science seeks to understand how nonlinear learning systems self-organize, sustain, and co-adapt to and within their environment (Bloch, 2005; Davis & Simmt, 2006; Levin, 2002). Complex adaptive systems have many parts cooperating and competing (Table 1). All the systems and agents working together, coadapting and coevolving, actually account for what is happing on local and global scales (Stacey, 1996). Structure cannot be permanent because agents reorganize themselves in response to internal and external stimuli so that renewal is continual (Fels, 2004). Complex adaptive systems are defined by a critical point between high and low order parameters where strange attractors emerge that are paradoxically stable and unstable at the same time (Heylighen, 2002; Stacey, 1996). Complex adaptive systems contain both order and disorder resulting in energy crossing boundaries with the external environment where negotiation can cause a split, a bifurcation point, making renewal or emergence to a more complex level possible. In other words, complex systems hold the potential for transformation (Gilstrap, 2005). In complex adaptive systems such as education, the organism or entity continually evolves becoming increasingly more complex, or “ratcheting up” its complexity based on previous states in which it has existed to make successive generations a better fit with the environment. Complex adaptive systems involve so many interacting entities prediction is rendered impossible in the long-term (Goldstein, 2005; Waldrop, 1992).

Current researchers in the field of education continue to reiterate a basic premise similar to the science of complexity's theorizing that complex adaptive systems involve so many interacting entities prediction is rendered impossible in the long-term. For example, Kuh and colleagues (2007) state, "No single view is comprehensive enough to account for the complicated set of factors that interact to influence students and institutional performance" (p. 13). Contrast this idea with traditional aspects of school culture that seem to run counter to notions of complexity: low connection density, no attractors such as a shared vision and mission, reductionist in nature, change is chaotic, and a belief that agents cannot improve teaching practice because good teachers are born not made (Dean, Galvin, & Parsley, 2005).

Table 1: Key Points of Complex Adaptive Systems

Key points of Complex Adaptive Systems
• Individual agents
• Interpretation and action is based on mental models
• Agents can have their own shared mental models
• Mental models can change; learning, adaptation, and co-evolution is possible
• Interconnections among agents, and systems embedded within systems
• System behavior emerges from the interactions among agents
• Action by one agent changes the context for others
• The system can exhibit novel behavior
• The system is non-linear; small inputs can lead to major outcome swings
• System behavior is fundamentally unpredictable at the detail level
• Broad-brush prediction of system behavior is sometimes possible
• Order is an inherent property of the system, it need not be imposed
• Creative emergence has its best chance to appear when there is a little (but not too much) disagreement and uncertainty

I propose that a new paradigm rooted in complexity has been emerging from recent literature and research although such a paradigm has yet to be recognized on a widespread scale due to the specialized language of complexity science. Stinson (2006) wonders how schools are supposed to facilitate development of HP2 characteristics. Kayti Haycock writes, "Real improvement never follows from just one new program…the educators in [HP2] schools think differently about almost everything"

(Barr & Parrett, 2007, p. xx). The U. S. Department of Education (1998) recognizes, "There are many ways to improve low-performing schools but not simple solutions" (p. 49). Lareau (2000) admonishes, "Just as there is no one best way to teach, nor one best way to learn, there is no one best way for parents to be involved in schooling and to promote children's success" (p. 192). Chu Clewell and Campbell (2007) have reminded us that effective schools research is not intended as sets of instructions to follow, but resources for improvement flexibly applied within context. Brady's report for the Fordham Foundation (2003) declares, "The specific strategy [to intervene in a failing school] is not important. What's important is having the right mix of people, energy, timing, and other elements—particularly school leadership—that together contribute to success" (p. 2 of Conclusions) in a specific situation and context.

The "right mix" needs to be dynamic, synergistic, increasingly powerful agents in the right combination. Change and connection are bridged when teachers work collectively and collaboratively forming relationships with and between students to meet common goals while having compassion for each other without sacrificing assessment and learning (Bloch, 2004; DuFour & Eaker, 1998). Leithwood, Seashore Louis, Anderson, and Wahlstrom (2004) feel education needs "to be developing leaders with large repertoires of practices and capacity to choose from that repertoire as needed, not leaders trained in the delivery of one 'ideal' set of practices" (p. 10). HP2 components "occur in no common sequence, yet they consistently appear in successful schools…What works in your school or district will be as unique as the population you serve" (Barr & Parrett, 2007, p. 58). Complexity seems to be catching on. Education is

beginning to see a new paradigm, an archetype for emergence and renewal instead of merely recipes that are not sustainable in the end.

The Science of Complexity

While a comprehensive review of complexity science would not be practical, much academic literature exists which contains further discussion on complexity science and theory as applied to complex adaptive systems and organizational learning. This literature review will focus on the major concepts within the science of complexity including self-organization and adaptability as well as systemic features (Heylighen, 2002; Levin, 2002; Waldrop, 1992).

Self-organizing systems have seven "signatures" that are common across all such systems (Figure 1) (Heylighen, 2002). The first signature of self-organization is global order emerging from local interactions within a system. The system continually responds to changes in the environment and external and internal influence by reorganizing at a higher-level of order in order to maintain its identity and structure without external or centralized control (De Wolf & Holvoet, 2005; Heylighen, 2002; Wheatley, 2006a; Wheatley, 2007; Waldrop, 1992). Because these self-organizing processes happen within the second signature, distributed control, "without conscious rational direction, planning, or control" (Wheatley, 2007, p. 1), system structure remains fluid and behavior unpredictable while "getting a better insight into the relevant sources of variation, selection and intrinsic attractor structures will help us to know which behaviors are likely, and which are impossible" (Heylighen, 2002, p. 23). An example of distributed control is the neural network within the brain. No one neuron is in control, but collectively, the network organizes itself and upholds the functioning of the brain (Morgan, 1997).

The distributed control allows the system to resist external or internal disturbances while having a capacity to restore itself (Heylighen, 2002). This third signature, robust and resilient, leads to the fourth signature, non-linearity and feedback loops. Self-organizing systems are non-linear in that cause is disproportional to effect. Because of the circular cause and effect relation between local system components and the global order, a sensitive dependence exists within the system that can lead to small changes being amplified into large outcomes while large events may have little to no effect (Anderson, Crabtree, Steele, & McDaniel, 2005; Bloch, 2008; Davis & Sumara, 2001; De Wolf & Holvoet, 2005; Plsek, Lindberg, & Zimmerman, 1997). Heylighen (2002) explains:

> Feedback is said to be positive if the recurrent influence reinforces or amplifies the initial change. In other words, if a change takes place in a particular direction, the reaction being fed back takes place in that same direction. Feedback is negative if the reaction is opposite to the initial reaction, that is, if change is suppressed or counteracted, rather than reinforced. Negative feedback stabilizes the system, by bringing deviations back to their original state. Positive feedback, on the other hand, makes deviations grow in a runaway, explosive manner. It leads to accelerated development, resulting in a radically different configuration. (p. 10)

As the system self-organizes into higher and higher order, it becomes self-sustaining and resistant to environmental fluctuations. As several systems interact and order themselves to produce combined effects in order to fulfill a self-sustaining function, they become a coherent, organizational whole that is irreducible to its parts. This property is the fifth signature of self-organization: emergence (Corning, 2002; Heylighen, 1989; Heylighen, 2002; Waldrop, 1992).

Due to the non-linear quality of self-organizing systems, the sixth signature is unpredictability. Every small influence can have an impact on the system which means

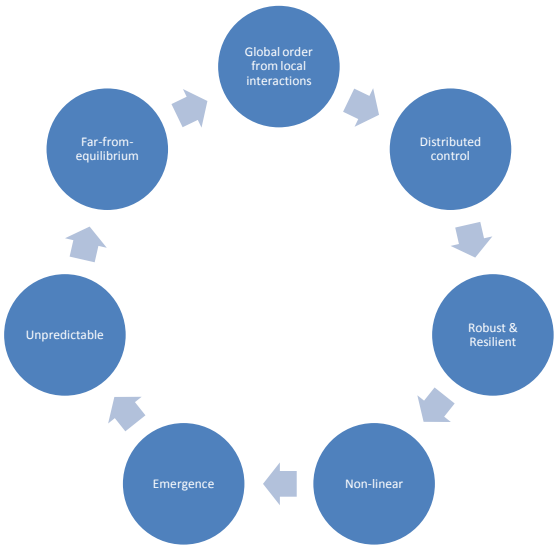
that the outcome cannot be predicted at the onset of system behavior; however, in general, as a self-organizing system moves from disordered to ordered, it is influenced by the external environment at its boundaries. Certain variables introduced as energy into the system cause bifurcations, or changes in self-ordering processes. These variables are called order parameters and as more are introduced the number of possible configurations the system could move toward increases distancing the system further from equilibrium and opening the system up to positive feedback (Heylighen, 2002; Heylighen, 1989; Rowland, 2007a; Rowland, 2007b).

The constant flow of variables as energy across conditions at the boundaries to which the system adapts marks the seventh signature of self-organizing systems as being far-from-equilibrium. "A system in equilibrium has settled in a minimum of its potential energy function" (Heylighen, 2002, p. 14). In contrast, a self-organizing system does not react to an increase in order parameters using negative feedback loops to move toward equilibrium; rather, the system reacts by "producing a much greater variety of regulatory actions, leading to multiple stable configurations" (p. 14-15). The system is then faced with the dilemma of following the series of processes that allow it to maintain its identity while adapting to the changing conditions at its boundaries.

"Systems may be called adaptive if they can adjust to [environmental] changes while keeping their organizations as much as possible intact" (Heylighen, 2002, p. 15). These self-organizing systems have a higher complexity earning the name "adaptive systems" which also have signatures that help explain system behavior (Figure 2). The first signature of adaptation is fit. "Self-organisation needs to find a balance between no order and too much order" (De Wolf & Holvoet, 2005, p. 8). If a system does not find the

right configuration or fit between disorder and order in the environment given certain changing boundary conditions, the system will be unable to maintain its identity and will disintegrate.

Figure 1: 7 Signatures of Self-organization

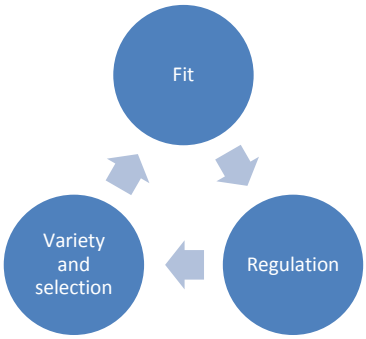


In order to be adaptive, the self-organizing system needs to regulate systemic reactions to disruptions at its boundaries. This second signature is regulation. First, the system must have a requisite variety of actions to deal with external inputs; then, the system must choose the most appropriate response. The challenge for complex, adaptive systems is to maintain enough, but not too many, stable variations that allow it to maintain its identity. Having too many choices or choosing from an inappropriate action can cause the system to dissolve into disorder. This phenomenon of needing to be positioned at the right juncture between order and disorder in order to maintain identity and/or grow has been described as living at the edge of chaos (Heylighen, 2002; Waldrop, 1992).

The third signature of adaptation is variation and selection. Akin to the Darwinian idea of natural selection, a system that adapts through requisite variety and selection will

increase production of components that have successful fit with the environment while unsuccessful actions and components will be decreased or abandoned altogether. The reaction to external stimuli will trigger waves of internal adaptation until the system reaches a stable state that still retains its identity within that specific environment (Heylighen, 2002).

Figure 2: Signatures of Adaptation in Self-Organizing Systems



Models of self-organizing, adaptive systems can have infinite variety and complexity, but five general, common features highlight self-organizing systems (Figure 3). Variables whose values can change over time are called degrees of freedom. "All the values for the different variables we consider together determine the states of the system…The set of all possible states of a system is called its state space", the first feature of self-organizing systems (Heylighen, 2002, p. 17). A complex adaptive system has a large number of variables giving it an astronomically large state space. Knowing the state of the system at any given moment is impossible although the probability of a particular state can be determined through the observation of a limited number of properties present in the system.

The second feature of self-organizing systems is uncertainty and entropy. The degree of uncertainty/disorder, or entropy, can be reduced by "gaining information, or putting a constraint on the system, so as to restrict its freedom of choosing a state"

(Heylighen, 2002, p. 19). As the system self-organizes local interactions through connections and relationships, its global order imposes restrictions on those local components so that most states in the system's state space are no longer available.

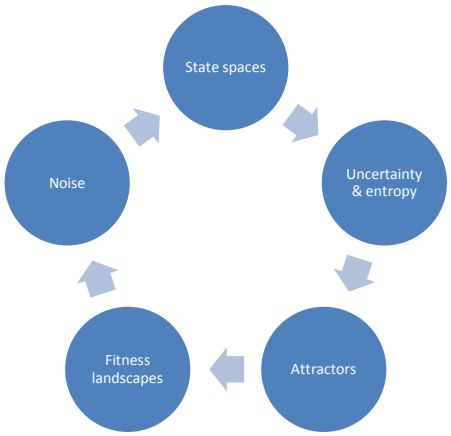
As degrees of freedom are removed through the process of self-organization, the system exhibits the third feature: attractors. An attractor is a state space the system moves into but cannot leave (Heylighen, 2002). De Wolf and Holvoet (2005) explain:

> Organisation [is] the arrangement of selected parts so as to promote a specific function. This restricts the behavior of the system in such a way as to confine it to smaller volume of its state space. This smaller region of state space is called an attractor. In essence, organisation can be looked at as an increase in the order of the system behavior which enables the system to acquire a spatial, temporal, or functional structure. (p. 7)

The fourth feature of self-organizing systems is the fitness landscape. The fitness landscape is, in essence, a map where higher points on the map represent the potential, or lack of fit, a system has within its environment. The lower points on the map signal attractors, or states the system could be in that have better fit and less disorder or potential within the environment. A system is naturally attracted from higher points of more potential into lower points of better fit from which it cannot leave (Heylighen, 2002).

The fifth feature of self-organizing systems called noise comes from the tendency for such a system to drop into the closest, deepest attractor on a local scale (or as my father says, "In a rut"), but which may not be the attractor with the least potential and best fit on a global scale. In order to get a system to "deviate from its preferred trajectory" of steepest decent into a local attractor, noise is introduced into the system as random perturbations to "push the system upwards, toward a higher potential" so it can find a more fit attractor state into which it can descend (Heylighen, 2002, p. 22).

Figure 3:Five Features of Self-organizing Systems



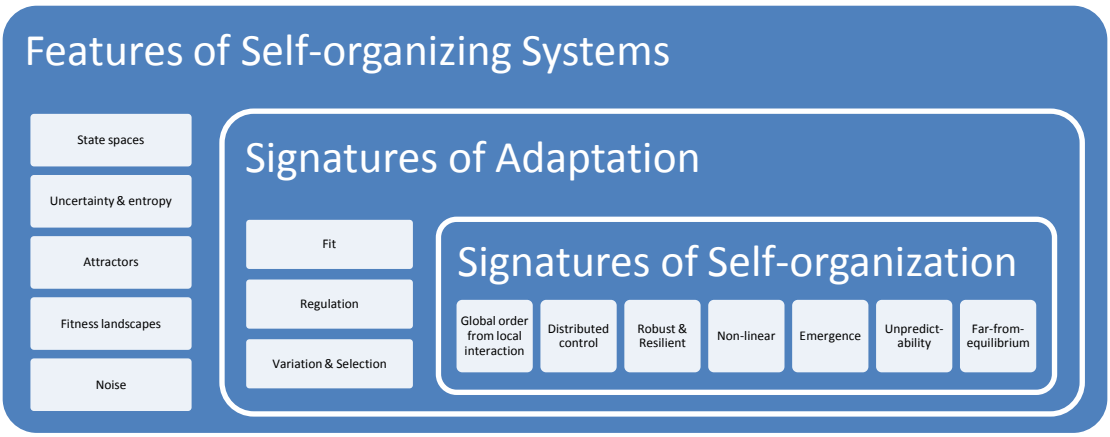
Because "dynamic systems exist only as part of nested inseparability or connectedness," we will find it useful to consider how these signatures and features are related to one another within a single complex system and across multiple systems (Figure 4) (Bloch, 2008, p. 550). As described through the signatures and features of self-organization and adaptability, the world of complexity

> is a world of interconnected networks, where slight disturbances in one part of the system create major impacts far from where they originate…but it is also a world that seeks order. When chaos erupts, it not only disintegrates the current structure, it also creates the conditions for new order to emerge. (Wheatley, 2006b, p. 4).

This space that is created at the point of tension between order and disorder at the edge of chaos, called the space for novelty, when the system enters a phase transition where new functions, new possibilities, and new order can emerge occurs because "just right" amounts of disagreement and uncertainty exist in the system. The sheer number of variables and entities in the system, due to its complex nature, necessitates a system where global structure and behavior emerge as the system self-organizes and adapts to a best fit with the environment. A pre-existing or externally imposed structure would not contain enough capacity or flexibility for the system to survive (De Wolf & Holvoet, 2005; Goldstein, 2005; Plsek, Lindberg, & Zimmerman, 1997; Waldrop, 1992). Further

research into emergence and emergent cognition "may shed light on which conditions foster more constructive and less destructive outcomes from creative and emergent processes" (Goldstein, 2005, p. 9).

Figure 4: The Relationship Across Signatures and Features of Self-organizing Systems



Emergence

More than an attempt at new theory, "complexity, in other words, was really a science of emergence" (Waldrop, 1992, p. 88). However, to "search for 'laws of emergence…is destined to fall short…because there is no conceivable way that a set of simple laws…could encompass this multi-layered 'holarchy' and its inescapably historical aspect" (Corning, 2002, p. 16). But as Goldstein (2005) speculated, understanding the conditions of and for emergence may be helpful in "fostering more constructive and less destructive outcomes" (p. 9). In the late 1800's, G. H. Lewes coined the term "emergent" because he believed "certain phenomena in nature produce what he called 'qualitative novelty'—material changes that cannot be expressed in simple quantitative terms; they are emergents rather than resultants" (Corning, 2002, p. 2). Even as far back as the time of the ancient Greek philosophers, Aristotle felt, "The whole is something over and above its parts, and not just the sum of them all" (p. 3).

Emergence can be understood as "building blocks at one level combining into new building blocks at a higher level….[where] the whole is greater than the sum of its parts" (Waldrop, 1992, pp. 169, 288). The appearance of global properties from new complex patterns and structures without top-down, centralized control is irreducible to subsystems or individual, local agents acting within the system. Because of the properties of decentralized control and irreducibility, the emergent, global system is robust and resilient in the face of disturbances at its boundaries with the environment (De Wolf & Holvoet, 2005; Goldstein, 2005; Heylighen, 1989; Rowland, 2007b; Stacey, 1996).

Further, complexity clarifies "how conditions might be established within which spontaneous self-organization might occur to produce emergent outcomes" (Stacey, 1996, p. 264). The interaction and self-organization of large numbers of agents and variables produces emergence, or overall system behavior, manifest in patterns, structures, and properties at the macro- or global level known as emergent phenomenon (Goldstein, 1999; Lissack, 1999). As discussed earlier, variables called order parameters introduced as energy into self-ordering processes increase the possible configurations within a system. These order parameters, a concept introduced by German physicist Hermann Haken in 1981, govern the emergence of phenomena at the global level from complex systems (Goldstein, 1999).

"Emergence is…different than ordinary change in a system, it needs to involve radically novel outcomes" (Goldstein, 2005, p. 3). Emergence also requires nonlinearity, self-organization, far-from-equilibrium conditions, and the presence of new attractors. These conditions allow a system to re-organize existing and past practices, structures, and processes (Goldstein, 2001). "New attractors show themselves when a dynamical system

bifurcates…signifying both a quantitative and qualitative metamorphosis. These new attractors then dominate the system and thereby allow for the emergence of something radically novel in respect to what came before" (Goldstein, 1999, p. 52).

According to Goldstein (1999; 2001), the resultants of emergence, emergent phenomena, share common properties as well. Emergent phenomena are: (1) radically novel in that they are "neither predictable nor deducible from antecedent conditions"; (2) dynamical as they "arise over time"; (3) coherent because they "exhibit relatively enduring integration; and (4) ostensive since they "only show themselves as the system evolves" (p. 2). Wheatley and Frieze (2007) summarize the importance of emergent phenomena in complex systems: An emergent phenomenon's "power and influence far exceed the sum of its parts. It displays skills and capacities that were not present in the local efforts. And its appearance always surprises us" (p. 2). Further, local, disconnected changes that are planned and incremental have little power or influence even though system-wide change begins with work at the local level (Wheatley & Frieze, 2006b; Wheatley & Frieze, 2006a). If these local level changes "connect, exchanging information and learning from each other, their separate efforts converge and can suddenly emerge as change powerful enough to influence a large system" (Wheatley & Frieze, 2007, p. 2).

Since complex systems self-organize or adapt to "actively try to turn whatever happens to their advantage" (Waldrop, 1992, p. 11), and "in the study of emergence, complexity science and organization converge" (Lissack, 1999, p. 111), we find it helpful in answering our research questions to examine complexity and emergence in current educational praxis. Through emergence, "When separate, local efforts connect with each

other as networks, then strengthen as communities of practice, suddenly and surprisingly a new system emerges at a greater level of scale" (Wheatley & Frieze, 2006b, p. 1).

Complexity and emergence in current educational praxis

Educational research from a complexity perspective should look for global regularities across all public schools and subsystem or local level regularities within specific types of public schools as well as patterns of relationships and behaviors common across varying levels of the system. While letting a system run and studying interdependencies and interactions may reveal general principles within specific types of schools, researchers should remember that schools as complex organizations remain unpredictable entities. Additionally, research in complex organizations should be open to multiple patterns of success emerging from public schools since there are many processes, structures, and configurations at work within them. (Anderson, Crabtree, Steele, & McDaniel, 2005; Plsek, Lindberg, & Zimmerman, 1997).

> The application of these concepts from complexity science to human affairs is primarily metaphorical, and thus there is much potential for misapplication, on the one hand, and the need for evidence and the development of language specific to human activity systems, on the other. (Rowland, 2007b, p. 14)

So research in educational organizations should look for global regularities, local regularities, be open to multiple forms of success, avoid prediction, and begin to develop a specialized language of complexity in education.

Through Margaret Wheatley's (2006a) study of complexity in human organizations, she has found, "Scientists now describe how order and form are created not by complex controls, but by the presence of a few guiding formulas or principles repeating back on themselves through the exercise of individual freedom" (p. 13). In an earlier work, Wheatley and a colleague believed, "If complex systems emerge from

simple initial conditions, then human organizations similarly can be rooted in simplicity" (Wheatley & Kellner-Rogers, 1996, p. 4). The two went on to explain the three primary domains of these simple initial conditions were identity, information, and relationships. The three domains of identity, information, and relationships were also identified by Michael Fullan (2006) as conditions for sense-making in complex organizations in his work on leadership occurring in "turnaround" schools that were becoming successful.

Unfortunately, human organizations, while generally regarded as "living systems, possessing the same capacity to adapt and grow that is common to all life" (Wheatley, 2006a, p. 15), have been mechanized to achieve equilibrium by hierarchy, standardized operating procedures, instructions, and rigid parameters in the face of crisis and chaos while ignoring possibility, novelty, opportunity, and surprise as desirable states (Corning, 2002; Davis & Sumara, 2001; Goldstein, 2001; Wheatley, 2006b). Schools are not static machines, but complex learning systems capable of adaptation and self-renewal (Davis & Sumara, 2001; Wheatley, 2006a). Wheatley (2006a) warns, "The search for organizational equilibrium [is] a sure path to institutional death, a road to zero trafficked by fearful people" (p. 76).

The first domain recognized by Wheatley and Kellner-Rogers (1996) and Fullan (2006) is "Identity" and is essential to complex organizations. Part of this identity is the processes occurring within self-organization combined with the "purposeful activity" of the organization (Corning, 2002, p. 14). This identity is also dependent on the activities, adaptation, and position of neighboring organizations and populations within the environment. The more complex the organization, the more likely it will survive and thrive when competing with those entities (Rowland, 2007b). The stronger and more

stable the identity of the organization, the more readily the organization knows how to respond to disturbance and/or information flowing across its boundaries from the environment so that it can re-organize at a higher level of complexity (Wheatley, 2006a; Wheatley & Kellner-Rogers, 1996). The formal and informal structures of the organization are important to its identity since informal structures are emergent from self-organizing processes within (Anderson, Crabtree, Steele, & McDaniel, 2005). The organizational boundaries such as departments and divisions as well as physical plants are part of the identity of the organization and must be considered in light of formal and informal structures, guidelines, and processes (Goldstein, 2001).

As the identity of the complex organization stabilizes and strengthens, the system focuses on a desirable state or attractor. The organization's purposeful activity begins to align with that mission and vision diminishing unrelated noise and utilizing resources more effectively and efficiently. As agents within the system abandon practices outside the function of the organization to increase the time spent on processes relating to identity, the system becomes robust within its attractor (Heylighen, 2002). "There is an essential role for organizational intent and identity. Without a clear sense of who they are, and what they are trying to accomplish, organizations get tossed and turned by shifts in their environment" (Wheatley, 2006a, p. 39).

The next domain, "Information", gives complex systems and their agents the resources, order parameters, and the far-from-equilibrium conditions necessary to catalyze adaptation and self-organization to respond to environmental change in order to maintain organizational identity (Heylighen, 2002; Plsek, Lindberg, & Zimmerman, 1997; Rowland, 2007a). Complexity involves evolving individual and shared paradigms,

with the complex adaptive system comprised of agents coevolving, to change individual and system behavior to generate organizational learning. The environment the collectively coevolving systems learn in is a "coevolving suprasystem that…creates and learns its way into the future" (Stacey, 1996, p. 10). Systems and subsystems can be creative and innovative, but their success at improving the overall system is dependent on cooperation and competition with adjacent systems in the environment. Continuous coadaptation and coevolution give learning communities the flexibility to rethink, regroup, self-organize, and emerge in response to unexpected environmental or system events to expand its own boundaries through conversations to make meaning and increase knowledge (Church, 2005; Semetsky, 2005; Waldrop, 1992). Diverse school, community, district, and state partnerships with "permeable connectivity" become necessary to effective schooling and system improvement (Fullan, 2006; Marzano, Waters, & McNulty, 2005).

The final domain, "Relationships", is the essence of complexity. The nature of self-organization in living systems is within emergent networks of interdependent relationships at the local level. System-wide change begins at the local level as common-interest and passion fuel organizational identity, and agents self-organize to fulfill that identity (Goldstein, 1999; Wheatley & Frieze, 2007; Wheatley, 2006b).

More than evolution, school systems undergo "coevolution" with the other complex social systems and agents, internal and external, in the environment or schools face extinction. Vitality, life, self-organization in the light of immediate context is driven by the rich, robust nature of connections and relationships as opposed to detail (Cohen & Ball, 1999; Waldrop, 1992).

Viewing through a lens of complexity would allow educational leadership to understand the coadaptive dynamic that occurs as systems compete and cooperate over time and space (Guard, 2005). Emergent phenomena in complex organizations are culture, values, norms, expectations, beliefs, and assumptions as identity emerges, information is processed, and relationships connect (Wheatley & Frieze, 2006a; Wheatley, 2006a). Leadership which has a grasp of the concepts of complexity is able to shift its perception of how organizations function (Table 2) (Bloch, 2008).

Table 2: Six Changes in Leadership Perception in Emergent Organizations

Ordered, hierarchical, compartmentalized organizations	Community or team-based functioning
Stability	Change as constant
Elaborate change models	Potential impact of small changes
Assembly line	Valuing of diversity
Controlled, periodic information delivery	Shared, immediate information flow
Singular world view	Awareness of complimentarity
Operation under unexamined rules	Values-based policies and practices

Change is a complex and multifaceted combination of elements enacted on individuals and the organization as a whole over time through realization, implementation, and actualization as well as internal factors of the individual actors in the organization (Brighton, 2003). This multiplicity, a Deleuzian concept characterized by the complex network of connections redundant in nature, becomes irreducible without changing the nature of the system. New knowledge, concepts, and meaning elevate a system through “lines of flight” or “ratcheting up” to new levels of complexity. Lines of flight provide escape routes from old boundaries and frames of reference. The more

complexity the more chance for border conversations, learning, and innovation to lead to emergence or "becoming" (Semetsky, 2005).

The notion of ratcheting up complexity from previous forms gives leadership the opportunity to construct radically novel new outcomes by transforming pre-existing order in the system. Goldstein (2005) calls the emergence of new order "self-transcending" from several sources of pre-existing order: (1) "The way it is functioning right now"; (2) Multifarious constraints currently in place"; (3) "Operations of recombining and manipulating the above"; (4) "Changing the rules" (p. 3). This sort of approach could be essential to education or any other system that has a long, strong history of hierarchical structure and participation. And while constructional processes do not guarantee predictability, constructional processes involve "the building up of…a special type of constructions, ones that involve the passing from one construction to another before the former is complete" (p. 7). This self-transcendence is done through an enabling, creative process of "following" established rules and then "negating" them by violating them purposefully to create radically novel new constructs. These types of emergents are not random. "Pre-existing patterns are taken into consideration and the negation part of logic guarantees novelty by changing these pre-existing patterns" (p. 8).

How does leadership reconcile building on pre-existing order when many schools are underperforming or discriminate against marginalized students? The school community is a field, or arena of struggle, for scarce resources where reproduction occurs as opposed to social transformation (Swartz, 1997). Parents learn about informal opportunities to intervene in their child's schooling through networks and "the density of connections between parents and schools differs by social class" (Lareau, 2000, p. 169).

Lower class individuals' social networks move among other lower class individuals or organizations with limited resources (Noguera, 2004). In fact, "social group membership structures life opportunities" (Lareau, 2003, p. 256). The individual and the group work relationally as two facets of the same social reality. To reconstruct social reality, at least two social classes would have to work together altruistically to create a new reality which seems nearly impossible. More realistically, an educational leader would acknowledge his or her interests as would the local social reality and both would agree to use a reconstructed social reality to each other's benefit (Swartz, 1997).

Leadership.

With a basic understanding of complexity, we can assume "predicting when and where the next [massive change] will come is futile, learning to be flexible and adaptable is the only sustainable leadership strategy" (Plsek, Lindberg, & Zimmerman, 1997, p. 9). Because internal processes and behaviors of complex adaptive systems are unpredictable, external control will not probably be effective in guiding a system through uncertainty although internal leadership may allow innovation and capacity to emerge in order for the organization to sustain its identity during periods of rapid change (Rowland, 2007a; Wheatley, 2002a). Recent examinations of leadership in complex systems find that certain leadership behaviors are emergent and irreducible to the local processes of the organization: vision, culture, values, and ethics (Wheatley, 2006a). Other characteristics common among leadership are high expectations, boundary awareness, collective efficacy, capacity building, outcome and performance orientation, data driven decision-making, critical praxis, improvement at the individual agent level, professional development, and cooperation and collaboration (Huber, Moorman, & Pont, 2007).

What complex organizations do not need are "bosses," but organizations do need leadership that fosters a strong identity and supports participation. Control within an organization does not equal order that helps that organization maintain its identity. Connecting networks of agents to a strong organizational identity will create the motivation and capacity for leadership to emerge among many diverse participants giving the organization sufficient complexity for innovate responses in the face of change (Goldstein, 2001; Wheatley, 2006a).

In systemic school improvement,

> the school leaders take responsibility for contributing to the success of other schools as well as to their own school or on partnerships or collaborations of schools with other organizations in which the organization and management arrangements distribute leadership across a combination of individuals, organizations and groups. (Huber, Moorman, & Pont, 2007, p. 4)

While these "socially distributed forms of leadership" emerge during processes of self-organization, general patterns of collaboration and social interaction can be deduced. "They are in fact the most common forms of leadership that are at work in organizational settings that involve a significant amount of interaction" (Watson & Scribner, 2007, p. 465). As a property of self-organizing systems, control is "distributed over the whole of the system" making leadership an emergent property of self-organization (Heylighen, 2002, p. 8).

As schools function as complex learning systems, schools will naturally move toward the more fit local attractor but may not be moving toward the most fit global attractor. Leadership emerging from the self-organizing process should take advantage of introducing noise and known order parameters into the system to keep it moving past those local attractors toward the global attractor and then slowly reduce those conditions

to allow the organization to settle into an attractor pattern (Heylighen, 2002). "Although the dynamics of emergence can seem distressingly complex, there is a simple change theory embedded here that provides hope, opportunity and a clear map of what we need to do as leaders" (Wheatley & Frieze, 2006a, p. 5). Emergent leadership may simply be those leaders who recognize the power of the new scientific principles as applied to complex learning systems. This awareness of small changes and sameness underscores the issues with cultural reproduction, planned enculturation, and diversity that plague high poverty schools. Emergent leadership, within complexity, naturally follows negation, or shifting position to something different than what is already in use (Bloch, 2008; Goldstein, 2005). Organizational science has focused on control while complexity science looks at how to ride waves of uncertainty (Lissack, 1999).

Ultimately, if schools are complex adaptive systems that self-organize, self-organization is "the appearance of structure or pattern without an external agent imposing it" (Heylighen, 2002, p. 2). Schools existing as complex adaptive systems changes the understanding of leadership as a position to that of an emergent function whose purpose is to meet organizational goals (Watson & Scribner, 2007; Wheatley, 2006a; Wheatley, 2007). Wheatley & Frieze (2007) describe the new function of leadership as "weaving a stronger, more diverse web, making and strengthening connections" (p. 4). In order to accomplish this, leadership will:

- "Focus institutional resources in support of those efforts that develop more connections;
- Bring staff together more frequently to think together and to discern what they're learning;
- Seek difference—both people and ideas that offer new perspectives;
- Keep expanding the web, including new and different people in all activities;
- Support more local efforts and innovations, then insist staff and faculty take them out into the world and connect with others; and

- Offer financial support for practitioner gatherings that provide opportunities for real exchanges" (p. 4).

Summary

Returning to our first research question, "Does complexity science contribute to an understanding of how leadership in high-performing, high-poverty (HP2) schools emerges?", we have found: The lens of complexity has provided a new view of leadership as an emergent function of a complex adaptive system versus a position of command and control (Watson & Scribner, 2007; Wheatley, 2006a; Wheatley, 2007). Some key features of emergent leadership seem to revolve around the domains of identity, information, and relationships (Fullan, 2006; Wheatley & Kellner-Rogers, 1996). Internal diversity strengthens the complex organization, and when leadership is distributed across the social landscape it holds the most capacity for innovation (Huber, Moorman, & Pont, 2007; Watson & Scribner, 2007). The system faces change in the environment at its boundaries with an understanding that prediction is unlikely to impossible, but potential and higher forms of order that will sustain and strengthen organizational identity are possible outcomes (Stacey, 1996; Waldrop, 1992; Wheatley, 2006a). Our second research question seeks to clarify the first: "In what ways do principals in HP2S allow capacity for high student performance to emerge from the current school context to sustain successful school reform?"

High Performing, High Poverty Schools

Public schools are complex and unpredictable, requiring principals to analyze the type and context of the school and to strategically plan, adapt, and change school behavior in response (Bensimon, Neumann, & Birnbaum, 1989; Davis J. R., 2003; Leithwood, Jantzi, & Steinbach, 2000b; Ouston, 1999; Thomas B. Fordham Foundation,

2003; Yukl, 2002). The true struggle of public education becomes clear when the challenges of high poverty schools are placed on the scales of success against the known elements of transformation: sustained time, effort, support, assistance, and resources from all members of the school-community (Church, 2005; Walk, 1998). School change is usually a response to a perceived failure or problem; thus underperforming, high poverty schools are constantly in some state of change, but reactive change that is defensive, guarded, and focused on a quick response time (Wheatley, 2006a); however, high performing, high poverty schools (HP2S) have demonstrated, both before and after the inception of NCLB, that marginalized students, often characterized as hard or impossible to teach, can achieve at high levels (Chenoweth, 2007).

> Complexity theory…suggests that it may be fruitful to pay greater attention to outliers because they may be a source of new structural arrangements and patterns of behavior. Thus…it is often useful to look to extremes—comparing the very best with the very worst. (Anderson, Crabtree, Steele, & McDaniel, 2005, p. 6)

The search for patterns begins by comparing low performing schools with HP2S.

Characteristics of low performing schools

In developing an archetype of HP2S, principals should be aware of the characteristics prevalent in low performing schools. Low performing schools are often viewed simply as an "employment agency for adults" which may be true in low SES communities where education is seen as an opportunity for upward SES mobility (Walk, 1998). Some of the dominant characteristics of low performing schools are the incapacity to: (1) recognize and solve problems, (2) improve performance, (3) support high quality teaching and learning, (4) build and sustain relationships, (5) avoid being overwhelmed, and (6) guard against bureaucracy. To overcome incapacity requires human, sociocultural, and financial capital. The school community can work on relationship

building, cooperation and collaboration, motivation, and creating an internal locus of control. These efforts can improve teacher attitude, avoid stress and deficit-thinking, and draw out student strengths through agency (Cohen & Ball, 1999; Hoy, Tarter, & Woolfolk Hoy, 2006; Walk, 1998; Weiner, 2006; Public Agenda, 2007; U. S. Department of Education, 1998).

The list of characteristics of low performing schools (see

In one of the seminal accountability documents pre-NCLB, Samuel Casey Carter found seven common traits among twenty one HP2S. Principals were free from bureaucracy to run school. Principals used measurable goals to establish a culture of achievement. Master teachers brought out the best in faculty. Rigorous classroom formative assessment was focused on continuous student achievement. Achievement was key to discipline. Principals partnered with parents to make the home a center of learning, and the school community worked hard and stayed on task. Barr and Parrett's pro-NCLB work outlines similar HP2 findings: shared leadership, continuous improvement, ability to create and sustain initiatives, supportive workplace for staff, staff development, support for school sites through data and information, and community involvement.

) is dominated by processes directly related to the school as opposed to circumstances completely beyond the school's control. Failing schools are disorderly with too much energy leaving the system to fuel processes not related to student success. Marginalized communities often have less effective teaching staff. Teachers are not adequately prepared, have a deficit view of students, and leave the school or the profession at high rates. Ineffective practices by unprepared teachers called "pedagogy of poverty" include rote methodology and routines including teacher-controlled discussion, decision-making, lecture, drill, practice techniques, and worksheets. These teachers hold different values

than the student population, do not push students for deeper understanding, and are unresponsive to unique learner needs (Barr & Parrett, 2007; Darling-Hammond, 2006). Further, high poverty schools have difficulty recruiting good teachers, and students have more immediate emotional and health needs which schools are accountable for recognizing (and often treating) than attending to preparations for NCLB mandated testing (Cohen & Ball, 1999; Schechter & Tischler, 2007).

The body of research on marginalized populations reveals that low-performing schools retain, track, misdiagnose, over-medicate, pullout, suspend, expel, and neglect marginalized students. Leadership lacks vision, mission, values, goals, and optimism. Buildings are large and mismanaged; resources are wasted; and the educational experience is impersonal. Parent involvement is absent. Students are absent, drop out, and are delinquent. The curriculum lacks rigor and high expectations. Teachers do not receive necessary professional development. The dominant and marginalized populations within the school community are polarized (Barr & Parrett, 2007; Carter, 2000; Cooter, 2003; Darling-Hammond, 2006; Lambert, 2006; Stinson, 2006; Walk, 1998; U. S. Department of Education, 1998). Reform efforts of underperforming schools often involve blanket adoption of programs and practices. Regardless of what ineffective practices are utilized by underperforming schools and poor teachers, "to make blanket assertions about what works for all students would be misguided and shortsighted" (Ivey & Fisher, 2006, p. 7).

Leadership bears the burden of educational reform in the middle of the debate about what strategies are best for achieving reform. Blame for failure rests with political leadership for not catalyzing political and social resources and educational leadership at all levels, including higher education, for avoiding true instructional leadership and

capacity building. Educational leaders who are effectively renewing schools will be hard pressed to keep up the relentless, punishing schedules necessary to drive reform (Henig, Hula, Orr, & Pedescleaux, 1999; Walk, 1998; Public Agenda, 2007). Principals in high poverty schools cannot succumb to the temptation to focus on students close to cutoff scores resulting in the neglect of "hopeless" students or gifted and high-achieving students far from cutoffs. In contrast, HP2S do not focus on a narrow curriculum, but instead teach art, music, PE, science, history, have field trips, and conduct other myriad activities beyond teaching to the test. Principals have had to begin to look beyond SES for school-level characteristics that affect achievement (Hoy, Tarter, & Woolfolk Hoy, 2006; Chenoweth, 2007; Reeves, 2007).

Practices and Characteristics of HP2S

Much research has been done on HP2S "thereby suggest[ing] models for what a turned-around formerly failing school would look like" (Brady, 2003, p. 1). Chu Clewell and Campbell (2007) note, "A recent trend in effective schools research focuses on *practices* rather than *characteristics* that differentiate effective from typical or ineffective schools" (p. 7). Many characteristics and descriptors of HP2S have emerged from the research in American education going back to the 1970's. Strong leadership in the form of a principal is essential along with clear goals, high expectations, parental and community involvement, and collaboration. Improvement comes from basic skills, collective efficacy, responsibility and accountability, and a sense of urgency. Multiple authors and researchers cite additional school factors associated with achievement. These factors include guaranteed and viable curriculum delivered via quality instruction, effective feedback, a safe and orderly environment, and relationships such as collegiality

and professionalism defined by learning, belonging, and efficacy (Brady, 2003; Chu Clewell & Campbell, 2007; Church, 2005; Darling-Hammond, 2006; Dean, Galvin, & Parsley, 2005; DuFour & Eaker, 1998; Hoy, Tarter, & Woolfolk Hoy, 2006; Johnson, Livingston, Schwartz, & Slate, 2000).

In one of the seminal accountability documents pre-NCLB, Samuel Casey Carter (2000) found seven common traits among twenty one HP2S. Principals were free from bureaucracy to run school. Principals used measurable goals to establish a culture of achievement. Master teachers brought out the best in faculty. Rigorous classroom formative assessment was focused on continuous student achievement. Achievement was key to discipline. Principals partnered with parents to make the home a center of learning, and the school community worked hard and stayed on task. Barr and Parrett's (2007) pro-NCLB work outlines similar HP2 findings: shared leadership, continuous improvement, ability to create and sustain initiatives, supportive workplace for staff, staff development, support for school sites through data and information, and community involvement.

Table 3: Characteristics of High Poverty Schools

Level	Low Performing	High Performing	References
Parents	Not involved	Involved and home is center of learning Satisfied with school Partnered with principal	Barr & Parrett, 2007; Brady, 2003; Carter, 2000; Chu Clewell & Campbell, 2007; Daggett, 2005; Dean, Galvin, & Parsley, 2005; DuFour & Eaker, 1998; Fullan, 2006; Henig, Hula, Orr, & Pedescleaux, 1999; Hoy, Tarter, & Woolfolk Hoy, 2006; Johnson, Livingston, Schwartz, & Slate, 2000; Kuh, Kinzie, Buckley, Bridges, & Hayek, 2007; Lee & Bowen, 2006; Marzano, Waters, & McNulty, 2005; U. S. Department of Education, 1998; Walk, 1998
Students	Immediate emotional and health needs Absent Drop out Delinquent	Empowered through agency Engaged High expectations resulting in increased achievement Social and personal development Decreased drop-out rates College attendance	Barkley, Bottoms, Feagin, & Clark, 2001; Barr & Parrett, 2007; Chu Clewell & Campbell, 2007; Cohen & Ball, 1999; Daggett, 2005; DuFour & Eaker, 1998; Fullan, 2006; Kuh, Kinzie, Buckley, Bridges, & Hayek, 2007; Lambert, 2006; Marzano, Waters, & McNulty, 2005; Mulford & Moreno, 2006; Reeves, 2007; Stinson, 2006; U. S. Department of Education, 1998; Walk, 1998
Teachers	Ineffective Unprepared; no Professional Development Deficit view of students; low	High quality Use of Master Teachers Professional development Buy-in to continuous	Barr & Parrett, 2007; Brady, 2003; Carter, 2000; Chenoweth, 2007; Chu Clewell & Campbell, 2007; Church, 2005; Cohen & Ball, 1999; Cooter, 2003; Copland, 2003;

	expectations Discriminatory Isolated Leave profession Instructional practices: rote methodology; lecture; drill; worksheets; teacher-controlled discussion, decision-making, & practice techniques Incongruent values with students/community Unresponsive to unique student needs	improvement Positive attitude Self- and collective efficacy Non-deficit thinking High expectations Quality instruction Effective feedback	Daggett, 2005; Darling-Hammond, 2006; Dean, Galvin, & Parsley, 2005; DuFour & Eaker, 1998; Fullan, 2006; Gehrke, 2005; Henig, Hula, Orr, & Pedescleaux, 1999; Hoy, Tarter, & Woolfolk Hoy, 2006; Huber, Moorman, & Pont, 2007; Johnson, Livingston, Schwartz, & Slate, 2000; Kuh, Kinzie, Buckley, Bridges, & Hayek, 2007; Lambert, 2006; Lee & Bowen, 2006; Marzano, Waters, & McNulty, 2005; Mulford & Moreno, 2006; Nesbit, 2006; Reeves, 2007; Schechter & Tischler, 2007; Stinson, 2006; U. S. Department of Education, 1998; Walk, 1998; Weiner, 2006
Principal	No vision, mission, values, or goals Not optimistic Makes staff feel unworthy	Clear, measurable goals Establish culture of high performance High, optimistic expectations Holds staff accountable Free from bureaucracy Shares leadership/builds leadership capacity in community Collective efficacy	Barr & Parrett, 2007; Brady, 2003; Carter, 2000; Chenoweth, 2007; Chu Clewell & Campbell, 2007; Church, 2005; Copland, 2003; DuFour & Eaker, 1998; Fullan, 2006; Henig, Hula, Orr, & Pedescleaux, 1999; Hoy, Tarter, & Woolfolk Hoy, 2006; Huber, Moorman, & Pont, 2007; Johnson, Livingston, Schwartz, & Slate, 2000; Lambert, 2006; Marzano, Waters, & McNulty, 2005; Mulford & Moreno, 2006; Public Agenda, 2007; Schechter & Tischler, 2007; Stinson, 2006; U. S. Department of Education, 1998; Walk, 1998
School	Employment agency for adults Incapacity to: recognize and solve problems; improve performance; support high quality teaching and learning; build and sustain relationships; avoid being overwhelmed; guard against bureaucracy Unsafe to take risks Disorderly Unfocused Large Mismanaged Wasteful Impersonal Retain, track, misdiagnose, over-medicate, pullout, suspend, expel, and neglect marginalized students	Socially just Positive climate Clearly defined goals Focus on learning and continuous improvement Safe to take risks/trust Collaboration Sense of responsibility and accountability Sense of urgency Sense of belonging and commitment Sense of professionalism and collegiality Sense of collective efficacy Safe and orderly Hard working and on-task Capacity to create and sustain initiatives Data-driven Reward success	Barkley, Bottoms, Feagin, & Clark, 2001; Barr & Parrett, 2007; Brady, 2003; Carter, 2000; Chenoweth, 2007; Chu Clewell & Campbell, 2007; Church, 2005; Cohen & Ball, 1999; Daggett, 2005; Darling-Hammond, 2006; DuFour & Eaker, 1998; Fullan, 2006; Henig, Hula, Orr, & Pedescleaux, 1999; Hoy, Tarter, & Woolfolk Hoy, 2006; Huber, Moorman, & Pont, 2007; Johnson, Livingston, Schwartz, & Slate, 2000; Lambert, 2006; Marzano, Waters, & McNulty, 2005; Mulford & Moreno, 2006; Reeves, 2007; Schechter & Tischler, 2007; U. S. Department of Education, 1998; Walk, 1998
Community	Polarized populations	Common mission Involved through individual and collective agency Human, sociocultural, and financial capital Relationship building, cooperation, and collaboration Motivated Internal locus of control Collective efficacy and internal capacity	Barkley, Bottoms, Feagin, & Clark, 2001; Barr & Parrett, 2007; Chenoweth, 2007; Chu Clewell & Campbell, 2007; Cohen & Ball, 1999; Daggett, 2005 Dean, Galvin, & Parsley, 2005; DuFour & Eaker, 1998; Fullan, 2006; Henig, Hula, Orr, & Pedescleaux, 1999; Hoy, Tarter, & Woolfolk Hoy, 2006; Huber, Moorman, & Pont, 2007; Johnson, Livingston, Schwartz, & Slate, 2000; Kuh, Kinzie, Buckley, Bridges, & Hayek, 2007; Lambert, 2006; Lee & Bowen, 2006; Marzano, Waters, & McNulty, 2005; Mulford & Moreno, 2006; Schechter & Tischler, 2007; Stinson, 2006; U. S. Department of Education, 1998; Walk, 1998
Curriculum	Narrow/Shallow Lacks rigor with low expectations Teach to the test	Broad/Deep Rigorous with high expectations Relevant, guaranteed, and viable High performance in basic	Barkley, Bottoms, Feagin, & Clark, 2001; Barr & Parrett, 2007; Brady, 2003; Carter, 2000; Chenoweth, 2007; Chu Clewell & Campbell, 2007; Daggett, 2005; Darling-Hammond, 2006; Dean, Galvin, & Parsley, 2005; Kuh, Kinzie, Buckley, Bridges, &

		skills/core areas on state and national tests Multi-disciplinary/Diverse Use of formative data	Hayek, 2007; Marzano, Waters, & McNulty, 2005; Reeves, 2007; Stinson, 2006; U. S. Department of Education, 1998

Effective schools research from Texas in 1998 found similar results of high expectations, no excuses for poor performance, risk-taking, parent and community involvement, the importance of relationships and collaboration, continuous improvement, and professional growth (U. S. Department of Education, 1998). Another study that compared two effective districts at opposite ends of the sociocultural spectrum found five common factors: principal leadership, high teacher quality, high parent involvement and satisfaction, good student discipline and school climate, and high expectations for students (Chu Clewell & Campbell, 2007). In 2005, Daggett presented similar findings from consultations with many national organizations about highly successful schools criteria and narrowed the criteria down to four general characteristics: high academic performance in core areas as measured on state and national tests, programs that stretch students well beyond core areas, community involvement, and social and personal development (Daggett, 2005). In an OECD study in England, high performing learning communities exhibited key features including efficacy, challenging performance targets, autonomous and self-managed staff, urgency, flexibility, formal and informal roles and responsibilities, risk-taking, leadership capacity, and collaboration (Huber, Moorman, & Pont, 2007).

In 1998, the U. S. Department of Education released "Turning Around Low-Performing Schools" which set the stage for NCLB. The report outlined similar processes and characteristics in four general categories: setting high standards, focus on learning, building school capacity, and intervening in chronically low-performing schools (U. S.

Department of Education, 1998). Cohen & Ball (1999) agree with the government's assessment: "Successful school improvement in high-poverty requires external interventions that are capable both of making large and lasting changes in instructional capacity, and doing so under conditions that rarely support and often impede such work" (p. 1). From the field of complexity science, Heylighen (2002) states, "The evolution from disordered to ordered configuration is usually triggered by a change in the external situation, the boundary conditions of the system" (p. 13); however, Wheatley and Frieze (2007) argue, "For any problem, the solutions we need are already here. If you want to solve a problem, look inside the organization or system and you'll find someone who's already worked out a solution or created the needed process" (p. 3). Despite arguments for and against external interference, *Turning Around Low Performing Schools* made one point that is perfectly clear: "In *every* case of a turnaround school, the transformation required leadership, trust, teacher buy-in, and a sense of common mission among stakeholders" (U. S. Department of Education, 1998, p. 25). Other authors agree that successful reform depends on a school's ability to clearly define goals; garner and maintain commitment, support, and focus; monitor progress; reward success; and build leadership capacity (Henig, Hula, Orr, & Pedescleaux, 1999; Johnson, Livingston, Schwartz, & Slate, 2000; Reeves, 2007).

Additional observations made of HP2S include the ability of those schools to emulate successful practices of other schools (Hoy, Tarter, & Woolfolk Hoy, 2006). Others argue, "No two systems are identical, and no one system can be successful simply by adopting another school's successful practices. Successful practices must be adapted in and to the receiving context" (Huber, Moorman, & Pont, 2007, p. 30). Karen

Chenoweth (2007) attributes HP2S with using "sheer effort of will" as opposed to simply copying the practice of other schools. The body of literature emerging from the interest in what HP2S are doing right highlights the relentless nature of efforts within the school community in the face of complex tasks. Schools begin with and build on their understanding of sociocultural strengths and meeting the needs of marginalized students to continually adapt through agency and relevance to increase student engagement; relationships including parent involvement; high, optimistic expectations; and the continual collection and analysis of student data (Gehrke, 2005; Kuh, Kinzie, Buckley, Bridges, & Hayek, 2007; Lambert, 2006; Lee & Bowen, 2006; Public Agenda, 2007).

Increased achievement, decreased drop-out rates, and college attendance for marginalized populations signal a school in transition. Contributing factors seem to depend on a collaborative school-community environment, relationships between agents, high-expectations, attention to school structures and sociocultural capital, and efforts to build capacity within the school community including leadership capacity (Darling-Hammond, 2006; Fullan, 2006; Mulford & Moreno, 2006; Stinson, 2006). While the principal is the key leadership position in HP2S, the principal enacts leadership through building leadership capacity in all members of the school community. Flattening hierarchies to decentralize power while empowering others to share leadership are characteristics of HP2 school leadership. The principal also keeps a focus on instruction with high expectations and holds employees accountable for results (Barkley, Bottoms, Feagin, & Clark, 2001; Chu Clewell & Campbell, 2007; Copland, 2003; DuFour & Eaker, 1998; Johnson, Livingston, Schwartz, & Slate, 2000; U. S. Department of Education, 1998). Leaders with "moral purpose" foster a culture of caring, respect, and

"mutual expectations to contribute to the betterment of school; in contrast, teachers in ineffective schools are made by leadership to feel unworthy and are more likely to reproduce discriminatory conditions" (Fullan, 2006, p. 51).

The research and literature on HP2S point unwaveringly to school leadership, in particular the principal, being essential to successful reform efforts (Brady, 2003; Marzano, Waters, & McNulty, 2005). Beyond the principal, leadership should be distributed "across the community through individual and collective agency" and "the development of collective internal capacity" (Mulford & Moreno, 2006, p. 208). At the very best, without increasing internal capacity, high poverty schools are limited to merely becoming adequate. Another good reason for capacity-building is the increase in the perception of collective-efficacy by teachers and principals. Lower-capacity is accompanied by less risk-taking and more isolation on the part of teachers. The capacity for social justice and hope in HP2S can be enhanced by learning about the successful or contributory actions of other marginalized individuals or communities (Nesbit, 2006). Through a lens of complexity, HP2S have many variables and possible states that allow them to adapt to a changing, global environment (Heylighen, 2002).

The culture of poverty

Research into the culture of poverty reveals that expecting a change in behavior or in expectations of low SES populations is unrealistic (Payne, 2001). Organizations can stay the same despite significant cultural change, and reform strategies are not filtering into classroom practice (Fullan, 2006; Stacey, 1996). Outright change may not work in marginalized populations, but the emergence of sociocultural capital, collective capacity, and leadership from collaborative relationships may be the worldview that sustains

renewal in high-poverty schools. “Learning involves changes in social roles and relationships [and] involves shifts in individual conceptions of who a person is and how he or she fits into the social world” (Nasir & Hand, 2006, p. 463). Keeping in mind that the study of complexity has demonstrated that emergent behaviors at the global level influence downward into lower levels of the system and cannot be understood by examining subsystems or interactions at the local, micro-level refocuses hope for reform on understanding higher levels of interaction (Heylighen, 2002).

Sociocultural theories view learning as social processes mediated by cultural tools within shifting relationships across communities of practice. The knowledge in an organization emerges dynamically through the social distribution of cognition and reciprocal interactions within the system but is suboptimal when collaborations involve privileged populations dominating the marginalized (Lattuca, 2002; Nasir & Hand, 2006; Schutz, 2006). Complexity, capacity building, and sociocultural capital are tied together with relationships and boundary conversations solidifying and internalizing expectations and ownership for teaching and learning with all agents in a school system. Improving schools as learning systems is done collectively at the school level with a shift in culture and behavior when behavior and schema co-adapt. At the heart of complex organizational learning, creativity renders old practices and paradigms obsolete, replaces them, or rearranges them with new internal structure instead of merely recycling components into new linear combinations (Bower, 2006; Copland, 2003; Fullan, 2006; Parents Reaching Out, 2006; Semetsky, 2005; Stacey, 1996).

Sociocultural capital and social interaction catalyzes cognition and learning in schools. Learning is irrelevant unless it contributes to the complexity of a human system

(Lattuca, 2002; Semetsky, 2005). Human systems emerge as learning systems when knowledge and components interact and self-organize, adapting and evolving the organizational whole with increasing complexity. As the organization and the environment continuously co-adapt, becoming increasingly more complex, learning perpetuates as each individual negotiates an understanding of his or her relationship within the organization and the environment. New learning occurs at the edge of chaos and order in complex systems (Davis, Phelps, & Wells, 2004; Fels, 2004; Nasir & Hand, 2006).

Capacity is the storehouse of knowledge and resources for instruction. Capacity is also the ability to learn from practice to construct new knowledge and skills for instruction to meet the particular needs of students within unique social and cultural contexts. Capacity building should be used to meet student needs based on the mission and vision of the local context inherent in the community's sociocultural capital while keeping in mind physical, academic, and socio-emotional needs (Cohen & Ball, 1999; Schaughency & Ervin, 2006).Capacity building is collaboration between "individual, site-based, and cross-site approaches to building individual and collective knowledge" (O'Day, Goertz, & Floden, 1995, p. unknown).

Organizational capacity can be enhanced through shared purpose, collaboration, and collective responsibility resulting in increased student learning (DuFour & Eaker, 1998). Similarly, three conditions for sense-making in complex organizations are the organization's identity including mission and focus, information such as knowledge creation for organizational learning, and relationships (Fullan, 2006; Wheatley & Kellner-Rogers, 1996). Cohen and Ball (1999) argue that conditions of instruction less

under an intervener's control are "engaged learners, opportunities to learn, and support from other agents in the immediate environment" (p. 18); however, when teacher capacity aligns to student need and is used effectively, student learning is maximized. Unarguably, an alignment of students' needs, the curriculum, and instruction is necessary to maximize learning in high-poverty environments. Student realities, particularly sociocultural sources and the media, provide alignment opportunities for teachers as they try to find new ways to present information. Interventions should be chosen based on community values and local needs (Ivey & Fisher, 2006; Lopez, 2007; Schaughency & Ervin, 2006).

Fullan "identifies the development of systemic capacity as the cornerstone to an organization's ability to get and stay better" (Barr & Parrett, 2007, p. 72). Systemic capacity comes from moral purpose, lateral capacity-building through networks, vertical relationships encompassing capacity-building and accountability, and the dual commitment to short-term and long-term results. Through a lens of complexity, long-term results are the sustainability of short-term creativity and innovation. Fullan also believes that progress is cyclical, and, after growth, organizations will re-energize during these times to prepare for more growth. Systemic capacity is part of complexity as schema is reorganized, adapted, and internalized (Barr & Parrett, 2007; Stacey, 1996).

Summary

Clearly, educators cannot simply use low socio-economic status (SES) as an excuse for low academic performance and expectations. Advocates for reform cannot push sole responsibility for finding solutions onto legislators and educational leaders, nor have we seen reform come about by waiting for someone from the external, dominant

system, namely the political realm, come up with a solution (Machtinger, 2007; Walk, 1998). Indeed, many components, forces, and local efforts converged in NCLB to create the system of influence known as the "Culture of High-Stakes Testing" driven by an American "culture that wants easy answers, quick fixes, and silver bullets" (Wheatley & Frieze, 2006a; Wheatley & Frieze, 2007). In fact, ignoring complexity can do harm within complex systems such as schools even to the point that simplistic thinking results in children being blamed for high poverty schools' shortcomings (Rowland, 2007b; Wheatley & Crinean, 2004).

Experts in educational leadership and educational reform increasingly recognize the complexity of education and how the field of education has outgrown the conventional tools educators refuse to give up. These same experts offer a steady diet of fad reform efforts. Education, as a complex adaptive system, paradoxically seeks adaptation to its environment while safeguarding against change resulting in quick, grab-bag simple solutions that cycle through unfinished and impotent to the purpose of true reform (Fels, 2004; Henig, Hula, Orr, & Pedescleaux, 1999; Marzano, Waters, & McNulty, 2005). Relying on experts is limited if the system does not have the capacity to learn as the environment and other agents and systems continue to change. A defining characteristic of complex adaptive systems that are able to self-organize, live, renew, and grow is the paradox of competition and cooperation (Stacey, 1996).

Besides checklists of characteristics and observations of processes in HP2S, certain conditions and factors are associated with change in complex organizations which will further the cognitive development of an archetype of HP2S to which principals can aspire highlighting the need for a new paradigm of leadership through a lens of

complexity. However, within the sociocultural context of a specific school community, actualization of processes found within HP2S transplanted into another failing school is unpredictable:

> We might experience more success in predicting the behavior of organizations if we focus on what kinds of archetypal behavior tend to be produced by a general kind of schema, rather than trying to forecast the specific outcomes of specific actions. (Stacey, 1996, p. 216)

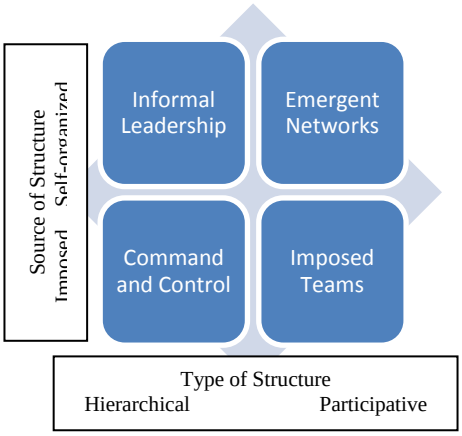
Emergent Leadership

"The treatment of roles within our discussions of leadership…has become a point of bifurcation between (1) scholars and practitioners who focus on leaders and positions and (2) those who focus on leadership and collaborative relationships" (Watson & Scribner, 2007, p. 455). So, does complexity science contribute to an understanding of how leadership in HP2S emerges? Emergent leadership, as described in the discussion of leadership in complex organizations, is the path toward viewing leadership as a process or a function of the complex learning system versus a position to be held by one or a few people (Davis & Sumara, 2001; Wheatley, 2002b). A self-organized, hierarchical structure comes from "informal leadership" or "emergent leadership" as opposed to imposed hierarchy which is command and control leadership. On the participative end of emergence and organizational dynamics reside imposed teams and self-organized, emergent networks (Figure 5). "The study of emergent leadership phenomena is ripe for further exploration using the insights of complexity theory on emergence in general" (Goldstein, 1999, p. 65).

Concepts such as distributed, shared, collaborative, democratic, and participative leadership are simply becoming slogans. Using these concepts should be within the local

context and sparing until further research bears out their effectiveness in education (Leithwood, Seashore-Louis, Anderson, & Wahlstrom, 2004). Emergent leadership is a blend of these many leadership practices enacted in the local context. Dependent on the network of relationships in a system, reform efforts require the confidence and trust of agents. Leadership keeps a focus on short-term victories and builds coalitions with community groups and individuals viewed as reliable and loyal (Henig, Hula, Orr, & Pedescleaux, 1999).

Figure 5: Emergence and Organizational Dynamics (adapted from Goldstein, 1999)



Wheatley and Kellner-Rogers (1996) said, "Self-organizing systems have what all leaders crave: the capacity to respond continuously to change" (p. 2). While linear systems have one "right" configuration, non-linear systems have a range of possible configurations around which said systems may unpredictably organize, arbitrarily and without objectivity, due to the amplification of small fluctuations by positive feedback. Our degree of uncertainty about the state space of a system gives the system freedom to pursue a possibly more fit state. A leader can feed information into the system reducing the uncertainty in the system and serving as a constraint that reduces the system's freedom to choose a potential state. Allowing self-organization around that information reduces uncertainty and freedom to choose a potential state of the system by connecting

subsystems and local agents into a global, dependent network resulting in very few potential state spaces the organization can move toward (Heylighen, 2002). These emergent concepts and processes begin to answer our second research question, "In what ways do principals in HP2S allow capacity for high student performance to emerge from the current school context to sustain successful school reform?"

At the micro-level of the system, the emergent system is complicated and disorderly and by nature reduces complexity. At the macro-level of emergence, emergent properties such as behavior and structure through self-organization come from the need for an increase in order and increasing complexity. An increase in order can only occur at this global level. So leadership can only influence the global level of emergence by increasing order and changing the shape of self-organization which at some critical point will affect the micro-level dynamics. This emergence could be done by networking similar micro-level dynamics which can only be accomplished at the global level anyway. So "emergent leadership" is a macro-level property and/or behavior resulting from micro-level interactions (De Wolf & Holvoet, 2005; Goldstein, 2001; Heylighen, 2002; Wheatley & Frieze, 2006a). Without emergence and emergent properties of self-organization in complex learning systems, leadership has not taken place. Emergents such as structures and behaviors are evidence that leadership, good or bad, has taken place (Watson & Scribner, 2005).

"A living system produces itself; it will change in order to preserve that self. Change is prompted only when an organism decides that changing is the only way to maintain itself" (Wheatley, 2006a, p. 20). Further, when an organization's identity is threatened, the organization references that identity for meaning and purpose. Meaning,

related to an organizations identity, serves as a strange attractor—"a coherent force that holds seemingly random behaviors within a boundary. What emerges is coordinated behaviors without control, and leaderless organizations that are far more effective in accomplishing their goals" (p. 183). Principals serving in organizations possessing emergent leadership use the school's sense of identity and the constant threats at its borders to become "equilibrium busters…stir[ing] things up…until finally things become so confusing that the system must reorganize itself into new forms and new behaviors" (p. 109) In other words, the school has to change—learning, adapting, and reorganizing to maintain an identity to which its agents are committed.

Goldstein (2005) described a constructional process where an agent such as a leader helps create conditions or opportunities (a space for novelty) for emergents to occur, by intentionally combining "unrelated frames of reference" (p. 4) and asking participants to make connections or find meaning in the construction that transcends the previous conditions of the organization. The leader's focus on collaboration helps maintain boundaries in an emergent structure as opposed to a pre-established "vision."

> The success of emergent leadership then is neither forcefulness of a 'vision', the eloquence of its articulation, nor the charismatic way in which it is imparted. Rather, it rests in a leader working with a group and working with what emerges, although acting as a guide and channel. (Goldstein, 2001, p. 11)

The role of leadership shifts from an authority with action plans to a function with intent and the belief that the organization has the capacity to self-organize and adapt to fulfill this function (Plsek, Lindberg, & Zimmerman, 1997; Wheatley & Kellner-Rogers, 1996).

Emergent leadership is produced as teachers take on responsibility (Huber, Moorman, & Pont, 2007). Leadership emerges from schools as administration helps isolated agents communicate about organizational meaning, connecting to each other

through the identity of the school as embodied in rituals and symbols, experimenting within the local context to help the organization adapt and evolve in the face of the unknown (Wheatley & Frieze, 2007; Wheatley, 2002b). Emergent leadership is informal leadership within an organization created by the need to survive and grow in the face of change and distributed across social networks to capture diverse skill sets and knowledge (Watson & Scribner, 2005; Watson & Scribner, 2007; Wheatley, 2006a).

Margaret Wheatley (2006a) began exploring how self-organization, emergence, and complex systems could be applied to leadership in 1990. Wheatley contends "the path of self-organization can never be known ahead of time. There are no prescribed stages or models" (Wheatley & Kellner-Rogers, 1996, p. 8); however, Wheatley describes three domains of self-organization and emergence as having a lifecycle. These domains, as discussed earlier, were also identified by Fullan (2006). Wheatley and Kellner-Rogers (1996) explain,

> The domains of identity, information, and relationships operate in a dynamic cycle so intertwined that it becomes difficult to distinguish among the three elements…As the organization responds to new information and new relationships, its identity becomes clearer at the same time it changes. (p. 7)

Wheatley and Frieze (2006a) describe emergence where

> living systems begin as networks of self-interested individuals for their own benefit…shift[ing] to intentional, self –organized communities of practice to share work and knowledge for mutual benefit for a field of practice [which then] evolve into sudden, powerful systems capable of global influence. (p. 2, 5-6)

When the three domains of self-organization are superimposed onto the lifecycle of emergence, despite Wheatley's objections, we may get a glimpse of a mental model of what emergent leadership and innovative practice, as has been described, may look like. An organization that begins as a mixture of agents acting as individuals but suddenly

shifts to a network of people being connected is reliant on the interaction of relationships and information. As the information flows between relationships and the identity of the organization becomes clearer, the connections between individuals and to the organization become stronger and more diverse. Finally, the identity of the organization and the relationships within and to it foster a commitment to the community of practice. The space for novelty, or the phase transition, that is created among the interactions of all of these elements allows for the emergence of leadership and innovative practice where the capacity for learning and renewal can sustain the organization (Figure 6) (Wheatley & Frieze, 2006b; Wheatley & Frieze, 2006a; Wheatley, 2006a; Wheatley & Kellner-Rogers, 1996).

We will begin with the first stage of the lifecycle of emergence which is networking and move through the mental model in sequence which will seemingly put the domains out of order. Keep in mind that this model is merely a mental model which represents the potential emergent organizational structure and processes, so each domain and cycle is an irreducible property of local, micro interactions which cannot definitively be sequenced. However, an understanding of these global emergents and how they are interdependent may help inform agents working in organizations so they may have the capacity to face an unpredictable future (Wheatley & Frieze, 2006b; Wheatley & Frieze, 2006a; Wheatley, 2006a; Wheatley & Kellner-Rogers, 1996).

Stage One: Networking

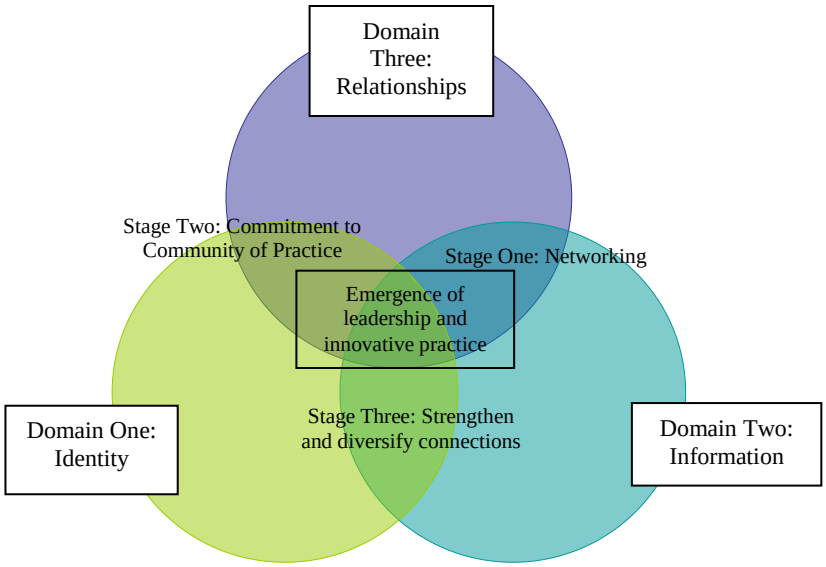
Even within networking, we begin to see overlap into other stages and the domains of emergence and self-organization. Wheatley and Frieze (2007) articulated,

> Emergence has a life cycle…It begins with networking…people recognize they can benefit by working together. Relationships shift from casual exchanges to a

> commitment to work together. Personal needs expand to include a desire to support others and improve professional practices. (p. 3)

In her academic writings over the last two decades, Wheatley proselytizes the new science of self-organization and emergence within networks as "the only form of organization used by living systems" (Wheatley, 2006b, p. 6). Further, she explains that networks encompass connections between processes as well as agents and are "fueled by passion and meaning, not by traditional commanding leadership" (Wheatley & Frieze, 2007, p. 2). These connections between processes create interdependence within the network (Wheatley, 2006a).

Figure 6: Mental Model of Emergent Leadership



Understanding the network of connections between processes and individual agents informs us of the differences between the formal structures and roles of the

organization and the informal, but real, practices within the organization. Emergent leadership is too complex to simply be a role. Emergent leadership encompasses the collective effort, collaboration, and action of the network of relationships within the organization to face challenges head-on (Scribner, Sawyer, Watson, & Myers, 2007; Watson & Scribner, 2005; Wheatley, 2006a).

Beyond the network within the organization lies the challenge of understanding the interdependencies that exist between the organization and other systems within the local and global environment. Knowing where the boundaries of the organization are allows an administrator in a school to watch the informal exchanges that are occurring at those boundaries to better understand organizational dynamics. Narratives, stories, language, sociocultural capital, agency, and the exchange and relationships of power within informal, social networks are what drive "negotiation of meaning and coordination of behavior" (Rowland, 2007b, p. 11; Anderson, Crabtree, Steele, & McDaniel, 2005).

In complex learning systems such as a school, self-organization through collaboration allows leadership to emerge within the system rendering external and/or hierarchical control unnecessary and potentially harmful. Control of the organization is an emergent property disbursed across the social networks and processes and takes on a more evolutionary tone responsive to environmental demands versus complying with command and order (Bloch, 2008; Plsek, Lindberg, & Zimmerman, 1997; Rowland, 2007a; Watson & Scribner, 2005). Those individuals holding leadership positions within the structure of the organization who understand how leadership emerges from these networks gear their actions toward

> helping to hold anxiety at a moderate level and to live with tension and paradox; opening communication…creating conditions that increase the chances of

> emergence of novelty, rather than trying to grasp the big picture in order to direct and coordinate actions; focusing attention on the present; empowering and strengthening communities of practice; contributing to ethical judgments in setting boundaries; opening to critique; and being mindful of the interplay between formal structures and informal networks. (Rowland, 2007a, p. 16)

Assuming that leadership is emerging in teams within these networks, Rowland (2007a) created a list of implications for high performing teams from the current literature "If complexity were assumed then…"

- Rather than reducing to a few key factors and isolating and manipulating a few variables, seek views of the whole, particularly of interrelationships (Prusak, 2002).
- Rather than using principles to match the present to the past in order to prescribe the future, focus on interactions and judgments in the present (Stacey, 2001).
- Rather than seeking to classify situations and apply general rules, in a sense following a diagnosis and treatment model, seek out the uniqueness of the situation and stay mindful of possibilities (Weick & Sutcliffe, 2001).
- Rather than impose accepted practice, norms, and standard operating procedures, participate in the emergence of what makes best sense to members in situations in the moment (i.e. design with rather than for) (Banathy, 1996).
- Rather than reducing or controlling these interactions with formal policies and procedures (e.g., to gain efficiency), remove obstacles to movement and informal communication and participate creatively (Axelrod & Cohen, 2000; Streatfield, 2001).
- Rather than focusing on general coordination and fitting actions to plans, focus on local interactions in the present (Stacey, 2001).
- Rather than, or in addition to, aligning decisions with strategies and goals, align them with processes, with the ordinary everyday processes of relating, an approach that is likely closer to expected behavior (Stacey, 2001).
- Rather than assess with respect to a vision, help guide evolution (Banathy, 2000). (p. 13-15)

Rowland's list highlights interrelationships, interactions, communication, and processes of relating.

Again, Wheatley and Frieze's (2007) words of wisdom are applicable,

> The world…changes as networks of relationships form among people who share a common cause and vision of what's possible. This is good news for those of us who want to change public education. We don't need to convince large numbers of individuals to change. Rather, we need to connect with kindred spirits. (p. 1)

Communities of practice, professional learning communities, school context, "school", and other terms used to describe the immediate daily context of the learning unit have the greatest influence on shaping teacher practice and capacity because of the network of relationships with other colleagues and leadership. Formal and informal networks are interdependent (O'Day, Goertz, & Floden, 1995). Effective curriculum development and learning within a complex system should emerge from the coevolution of the teachers and students interacting in a specific context and environment with carefully selected materials and resources. "If we understand our lived experiences as unfolding possible worlds in which learning emerges, we must then pay attention to how we engage in pedagogical encounters, and how we choose to interact with our students within what becomes a co-evolving curriculum of possibility" (Fels, 2004, p. 78; Kieren, 2005).

Domain Three: Relationships

Wheatley (2006a) believes, "Self-organizing systems demonstrate the ability of all life to organize into systems of relationships to increase capacity…Power in organizations is the capacity generated by relationships…It is an energy that comes into existence through relationships" (p. xiii, 39-40). In order to have the capacity to survive, adapt, grow, and successfully fulfill their function, organizations need the power generated in the process of the formation of relationships within networks. This power is from emergent leadership as opposed to a positional power within a role. The relationships that form increase the complexity of the organization and make predictability impossible, but these relationships open the door for potential emergence (Wheatley, 2002b; Wheatley, 2006a).

Through interdependence of agents in the organization, strengthening relationships strengthens the system (Watson & Scribner, 2007; Wheatley, 2006a). Relationships become a medium in which knowledge and learning reside within the organization (Rowland, 2007a; Rowland, 2007b). And finally, leadership itself is a social construction within relationships across networks forming in the organization and can be better understood "by examining the multidirectional social influences occurring between teachers, administrators, parents, students, and other stakeholders" (Scribner, Sawyer, Watson, & Myers, 2007, p. 69; Watson & Scribner, 2007).

Because of the interdependence of relationships and networks within self-organization in living systems, relationships can be seen as one of the "basic building blocks" of life (Wheatley, 2006a; Wheatley, 2006b). An understanding of relationships at the micro-level helps inform how the global system emerges. The process of relationships forming within networks generates knowledge, practice, and commitment that allow large scale change to emerge. The organization enters a positive feedback loop where local efforts interact, bond, and become interdependent until the self-organized, social network becomes a sustainable, influential, cultural force that influences the entire system back down to local behaviors and practices (Anderson, Crabtree, Steele, & McDaniel, 2005; Corning, 2002; Heylighen, 2002; Plsek, Lindberg, & Zimmerman, 1997; Wheatley & Frieze, 2006a; Wheatley & Frieze, 2007).

Stage Two: Commitment to a community of practice

Wheatley (2006) discusses vision as more than a destination or a place the organization wants to be; vision serves as a powerful influence driving self-organization and improvement in the system. As individuals and groups commit to an emergent,

common vision and communicate, clarify, refine, and model that commitment, a community of practice begins to develop. The community of practice becomes a node of interaction among agents where learning, leadership, and culture emerge (Davis & Sumara, 2001; Rowland, 2007a; Wheatley & Frieze, 2007). Ownership of improvement efforts contributes to resiliency and sustainability emerging from communication, feedback, rich relationships, shared leadership, collective efficacy, agency, internal locus of control, a focus on principles, and critical thinking skills (Bower, 2006; DuFour & Eaker, 1998; Lambert, 2003).

"Self-similarity is achieved not through compliance to an exhausting set of standards and rules, but from a few simple principles that everyone is accountable for, operating in a condition of individual freedom" (Wheatley, 2006a). Individuals have that freedom and do not need controls because of their commitment to the community of practice that has emerged around a shared meaning and cause. This commitment is deepened as the network gains clarity in its sense of purpose, informal norms, and values (Wheatley, 2006b; Wheatley & Kellner-Rogers, 1996).

The structure of the school contributes to learning when the staff is allowed to participate in leadership and decision-making (Hallinger & Heck, 1999; Leithwood, Jantzi, & Steinbach, 1998; Preskill & Torres, 1999). Collaboration emerges through trust and a common vision (Huber, Moorman, & Pont, 2007). This social interaction is an important concept within emergent leadership as it

> hinges upon the morality of organizational actors much more than the positions they happen to hold…leadership becomes connected to personal agency more than it does to formal hierarchies…moral agency becomes the source of the distribution of leadership through the processes of cooperation. (Watson & Scribner, 2005, p. 14)

The formal structure of the organization is emergent of the interrelationship of member agency and the distribution of leadership (Watson & Scribner, 2007).

Because of the reciprocal influence between agents and the organization, the two co-evolve. External attempts at control cannot succeed given the lack of meaning such decisions will have for agency within the organization. Environmental influences and constraints placed on the system may help focus efforts within the system while creating a certain risk for lost potential and creativity (Plsek, Lindberg, & Zimmerman, 1997; Rowland, 2007b; Scribner, Sawyer, Watson, & Myers, 2007). Administrators can stimulate learning intentionally by hiring good teachers and attending to goals, strategy, and vision (McCombs & Whistler, 1997; Nonaka & Takeuchi, 1995). Principals facilitate reaculturation, learning, and positive attitudes around the core intentions of school while teachers help students negotiate the boundaries between knowledge communities. Building the school into a community of learners provides synergistic decision-making from students and teachers as schools renegotiate the boundaries between the school and the public to ensure work going on at the center of the school is still positioned in respect to boundary conversations (Bruffee, 1999; Flannery & Vanterpool, 1990; Leithwood & Duke, 1999; Leithwood, Jantzi, & Steinbach, 1998; Placier, Hall, Benson-McKendall, & Cockrell, 2000; Sergiovanni, 2000).

Domain One: Identity

Watson and Scribner (2007) discuss how collaboration, collective agency, and the distribution of leadership interact with organizational structure in a reciprocal relationship to produce socially just action. Every agent in the system gains from the sharing of meaning and benefits from the emergents that are produced during processes and

interactions (Watson & Scribner, 2007; Wheatley, 2006b). Obviously, every agent has freedom to operate in his or her own best interest according to his or her own sociocultural capital. Such unpredictable behavior still has an impact on the other agents and the overall organizational context (Plsek, Lindberg, & Zimmerman, 1997). As the actions of the multitude of individual agents acting independently are collectively constrained by "purpose, autonomy, time, accountability, and governance", the resulting collective agency has the influence to change organizational structure through the socially just empowerment and collective efficacy of all agents in the system (Watson & Scribner, 2007).

Because of the dynamics of power and the distribution of leadership, power relationships could be an important mechanism for the presence or absence of complexity (Walk, 1998). Primary social groups depend on resources and power while marginalized people find strength collectively. This dependency suggests a framework of complexity attentive to relationships, open exchange, boundary conversations, and other facets of complex systems could have huge implications for educational complexity where social justice connects marginalized groups to dominant groups and allows access for marginalized groups to opportunity, information, and resources (Schutz, 2006; Zacharakis & Flora, 2005).

Similar to the underpinnings of complexity science, Bourdieu sees unity in the fundamental aspects of the practical activity of social life. Culture, ideology, religion, and politics can shape class relations. Religion and culture are relatively autonomous from politics and economics (Swartz, 1997). Sociocultural attentiveness could help the school's social structure value all actors and groups for their potential contribution to the

capital available within a school-community system. This complex, synergistic stance echoes Bourdieu's sociology as the unity of social life. All agents are necessary to modern social life even if some are marginalized; however, this very thought can give birth to ideology that all necessary agents have worth to society. This sense of belonging creates a starting point from which schools can build capacity. Educational empowerment for marginalized groups is futile without building capital in them. The intersection of habitus with certain types and amounts of capital within a certain field results in practice making educational practice specific to the time and place such practice is enacted. Further, "habits, traditions, customs, beliefs—the cultural and social legacy of the past—filter and shape individual and collective responses to the present and future. They *mediate* the effects of external structures to produce action" (p. 69). Public exposure of embedded interests of unequal power arrangements with dominant groups in exercise of power opens up the possibility for marginalized groups to become empowered and change the existing social structure (Swartz, 1997).

A school's capacity as a professional learning community can be shaped by developing its culture. A productive school culture includes understanding the predispositions toward students, improvement, efficacy, collaboration, as well as possessing a strong knowledge base, goals, and focus. Attention has to be paid to both local classroom dynamics as well as broader sociocultural issues. While SES may divide classes, race also matters to school capacity and overall civic capacity (DuFour & Eaker, 1998; Henig, Hula, Orr, & Pedescleaux, 1999; Nasir & Hand, 2006). "There is a path through change that leads to greater independence and resiliency. We dance along this

path by maintaining a coherent identity and by honoring everybody's need for self-determination" (Wheatley, 2006a, p. 89).

Stage Three: Strengthen and diversify connections

The identity and survival of the organization is dependent on its internal diversity; however, the complexity of the system depends on the ability of the diversity within local components and interactions to self-organize around that identity. The reciprocal dependence of agents allows the system the robustness to cope with the change at its boundaries to maintain the identity of the organization (Davis & Sumara, 2001; Wheatley, 2002b). Marginalized populations working within these social networks increase the diversity of sociocultural capital and gender increasing the potential for emergence and innovation (Goldstein, 2001). Wheatley emphasizes in numerous writings that "It's not critical mass we have to achieve, it's critical connections" (Wheatley & Frieze, 2006a, p. 8; Wheatley & Frieze, 2007, p. 3; Wheatley, 2006a, p. 45).

The concept of open exchange explains that life is sustained on the parts of both the internal system and external environment through the flow and exchange of components, information, and energy across boundaries (Bloch, 2004). In school teams, boundary conversations allow individuals to process pluralistic views, develop individual schema, embrace and connect to system and group schema, and contribute to cross-fertilization and the recursive process of emergence (Gilstrap, 2005; Stacey, 1996; Waldrop, 1992). Student relationships with staff contribute to collective efficacy, agency, and belonging (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2007). A collaborative school culture contributes to learning fostered through a sense of community, collective

responsibility, and the design of teams within a district and with interactions with other schools (Bruffee, 1999; Leithwood, Jantzi, & Steinbach, 1998).

> Through relationships, information is created and transformed, the organization's identity expands to include more stakeholders, and the enterprise becomes wiser. The more access people have to one another, the more possibilities there are. Without connections, nothing happens. (Wheatley & Kellner-Rogers, 1996, p. 6)

Domain Two: Information

The final domain deals with information: "Networks begin with the circulation of information. This is how members find each other, learn from each other and develop strategies and actions…But once the network has momentum, it is passion and individual creativity that propel it forward" (Wheatley, 2006b, p. 9). Nevertheless, information is critical to the strength and diversity of connections, the identity of the organization, agents' commitment to a community of practice, and the building of relationships. And, as just stated, information is critical to the formation of networks. As the system grows robust and resilient, it relies less on external information and disturbances and more on internal information and self-reference. When a system has no memory or identity, it is in chaos; when a system generates new information but maintains its identity, it is on the edge of chaos; when a system cannot generate new information, it has created too much internal order and dissipates (Wheatley & Kellner-Rogers, 1996).

Analysis of complex organizations flows across the boundaries of the system and its environment in the form of conversations, information exchange, and sociocultural capital (Semetsky, 2005; Wheatley, 2006a). Systems need rich enough, or diverse enough, internal and external connections to ratchet up complexity to a point that satisfies

power laws in the form of supercritical mass and causes patterns of collapse in the system as new schema develop and replace existing schema. However, ecological systems are highly heterogeneous with the fitness of individuals "contingent on the composition of the population" and developing "patterns of modularity" that help contain disturbances, all of which "complicate the picture" (Levin, 2002, p. 12). Too many connections weaken a system and lead to chaotic behavior (Waldrop, 1992).

Social, informal, and formal learning take place at the boundaries of cliques of students and various interest groups negotiating and interacting to create knowledge. Knowledge is created and expanded through social interaction driven by individual and team interpretation of knowledge negotiated within a community of knowledgeable peers, at the boundaries of knowledge communities, or between knowledge communities and transition communities who want to join them (Bruffee, 1999; Lencioni, 2002; Nonaka & Takeuchi, 1995). These communities should be as diverse and complex as the school environment with flat, flexible organizational structure to promote collaboration, interdependence, and overlap (Bruffee, 1999; McCombs & Whistler, 1997; Nonaka & Takeuchi, 1995). Work being done at the center of the school should reflect the learning going on at boundaries between the district, legislation, and stakeholders. If the work does not change as boundaries move, the school is in jeopardy of being marginalized or failing (Bruffee, 1999).

Acting as "living systems," schools serve the function of learning for the student, teacher, administrator, and parent communities nested inside of and beside each other (Bruffee, 1999; McCombs & Whistler, 1997). More than the sum of individual efforts, the team works collaboratively through open-ended discussion and problem-solving to

discuss, decide, and negotiate boundaries between knowledge communities (Bruffee, 1999; Katzenbach & Smith, 1993; Katzenbach & Smith, 2003).

Different levels of learning exist for individuals and organizations. Learning can simply be an incremental updating of knowledge necessary to carry out or upgrade processes and procedures. Learning can also involve knowledge creation intended to ensure the survival of the school in an ever-changing environment by mobilizing and converting tacit knowledge of members to explicit knowledge the school can use (Hanson, 2001; Nonaka & Takeuchi, 1995). Through teaching and professional development, students and school members generate innovation by transferring one individual's tacit knowledge to another individual's tacit knowledge through cooperative learning, modeling, and mentoring; bringing tacit knowledge to the explicit level through collaboration and dialogue; combining explicit knowledge with explicit knowledge during lecture; and internalizing explicit knowledge back into the tacit level of school members through practice and developing products. Conversations permeate these processes to help members interdependently construct knowledge (Bruffee, 1999; Nonaka & Takeuchi, 1995).

Emergent leadership emerges from the processes that create and distribute information in complex organizations. Formal leaders cannot hold back social networks that have formed around the organizational identity and committed to the community of practice without doing harm to the system or to the individuals. These administrators can watch for indicators that leadership is emerging from social interaction and information exchange in order to be ready to encourage processes, interactions, responsibility, risk-taking, and collective agency (Watson & Scribner, 2007; Wheatley, 2005).

Summary

For the emergence of innovative practice within an organization such as a school, the school system itself has to utilize opportunities that come within range of the boundaries of the school. The processes within the school need to be geared toward taking advantage of these opportunities and generating innovative responses and possible state spaces that will preserve organizational identity (Goldstein, 2001; Wheatley, 2007). "In a CAS, creativity and innovation have the best chance to emerge precisely at the point of greatest tension and apparent irreconcilable differences" (Plsek, Lindberg, & Zimmerman, 1997, p. 15). Leaders in high poverty schools are faced with these large amounts of tension and conflict giving them opportunity to allow innovative practice to emerge from within the organization (Barr & Parrett, 2007; Chenoweth, 2007; Church, 2005; Chu Clewell & Campbell, 2007; Fullan, 2006; Lareau, 2000; Lareau, 2003).

In order to increase achievement, leaders need to capture learners and members of the community at the margins (Watkins & Tisdell, 2006). Leadership is not a position held by a person of power with certain characteristics or practices but emerges from the interactive relationships within and across organizational boundaries as networks of accountability and responsibility develop. Emergent leaders act as catalysts to change, self-organize, and promote emergence in the organization by modeling socially just behavior. When the principal acts as a catalyst to hook other agents together, boundary conversations begin to occur (Church, 2005).

Powerful partnerships with rich and robust connections attract agents, teams, and systems to the same emergent vision. An emergent vision does not contribute to a leader's power to carry out specific actions but leads to dynamic, reciprocal, purposeful

learning empowering agency within the school community to enact meaningful change (Barr & Parrett, 2007; Gilstrap, 2005; Lambert, 2003; Schechter & Tischler, 2007). School improvement attentive to the sociocultural capital of the school community should have a moral purpose, a transparent and permeable practice, and share leadership with agents ready for systemic improvement. These systems thinkers need to be aware their actions will result in a changing community context (Fullan, 2006). Parent leadership will move beyond token participation to meaningful roles when the parents are included in the complex learning of the system (Parents Reaching Out, 2006). The quality of leadership and exercise of power can increase the capacity for urgency through facilitative, participatory, fluid, and emergent leadership acting as a catalyst linking people and ideas in the phase transition for sustainable renewal (Stacey, 1996).

Multi-Dimensional Learning (MDL)

"In addition to studying…social, or relational, distribution, it is important to grasp the situational distribution of leadership practice…how, when, and where we work together has a powerful shaping influence on the outcomes of that work" (Watson & Scribner, 2007, p. 454). Unlike single and double loop learning, MDL is not just about information, knowledge creation, reactive change, or even adaptation. MDL encompasses meaning-making and identity; as an organization self-organizes, the process of MDL begins with self-reference. "The self the organization references includes its vision, mission, and values…current interpretations of its history, present decisions and activities, and its sense of its future" (Wheatley & Kellner-Rogers, 1996, p. 5). At the juncture of the dimensions of time and sociocultural capital, an organization deepens its understanding of itself allowing the system to strengthening decision-making in the face

of a changing environment. Along with self-reference, the system resists fluctuations to protect its identity. "As a system inquires into these three domains of identity, information, and relationships, it becomes more self-aware…These new connections develop greater capacity; the system becomes healthier" (Wheatley, 2006a, p. 146).

MDL shakes off command and control leadership in the face of uncertainty by harnessing the collective agency and efficacy within the network of the organization. Because each individual agent has a unique, fleeting perception of reality, the collective emergence of leadership allows for a diverse, socially just response in the face of change. This MDL can only occur collectively within the emergence of leadership and innovation (Rowland, 2007a; Wheatley, 2005; Wheatley, 2006a; Wheatley, 2007).

System adaptation relies on variety and selectivity. The organization needs to be robust enough to generate a sufficient number of actions to respond to possible environmental disturbances without taking an action that would dissolve the system's identity. Single or double loop learning models are not sufficient for keeping a system in the transition between order and chaos. Single loop learning measures against preset parameters; double loop learning questions if the parameters are sufficient. MDL internally models actions virtually and reflects on the fitness of the possible outcome with the environment increasing reliability and efficiency of action. A formal leader in a system sensitive to emergent leadership finds everything important but understands the need to help the system focus on responsive behaviors aligned with the function and identity of the organization (De Wolf & Holvoet, 2005; Heylighen, 2002).

The only way a system can continually renew in the face of a changing environment is to escape a current alignment created through positive feedback by

employing negative feedback. These interlocking loops help the system control amplification and suppression of behaviors within the system. Positive feedback loops, dissimilar to single and double loop learning, acts as a monitor as opposed to a regulator of new information signaling the need for change. Negative feedback loops, such as single and double loop learning, keep a system moving toward a more fit state once the system recognizes such a state exists. Interlocking loops within MDL push the system to new levels of complexity (De Wolf & Holvoet, 2005; Heylighen, 2002; Wheatley, 2006a).

A starting point to understanding schools as complex would be understanding the schema used within MDL to adapt and renew as opposed to single or double loop learning. MDL occurs across

> diverse scales of space, time, and organizational complexity [with] an understanding of the interrelationships between microscopic processes and macroscopic patterns [as] cooperation, coalitions and networks of interaction emerge from individual behaviors and feed back to influence those behaviors. (Levin, 2002, p. 3)

Non-linearity is a key component of complex MDL in organizations. No "mechanically direct causal connection between [an organization's] many components" exists allowing one cause to produce multiple effects while multiple causes may all produce the same effect (Semetsky, 2005, p. 21).

Moral and social aims of education stewing in and emerging from complex social network interactions within multiple social systems that form the school community determine school effectiveness and influence student achievement. These aims build instructional and leadership capacity when leadership uses MDL to analyze why certain components of education are in place (Chu Clewell & Campbell, 2007; Noddings, 2006).

MDL can keep increasing returns/positive feedback from eliminating the necessity or ability to consider complex issues essential to a thorough and efficient education (Noddings, 2006; Waldrop, 1992). Historically, positive feedback has amplified obsolete educational practices such as grade leveling, letter grading, a nine month school year, achievement testing, etc. to the point that these practices actually hinder effective educational practice, especially for marginalized students. Allowing schools to norm approaches to education will lower the cognitive level of practice, the complexity, and decrease the capacity of the system (Brady, 2003). "To assume that one approach is 'it', is dishonoring the wholeness, the complexity, the richness of being" (Kenny, 1998, p. 216).

School learning takes place when a problem emerges and school memory does not provide a ready solution. Administration then facilitates member-sharing of tacit knowledge, creating and justifying concepts, building an archetype through combination, and cross leveling knowledge to new ontological levels of knowledge creation (Hanson, 2001; Nonaka & Takeuchi, 1995). In order to avoid repeating mistakes, educators engage problem-solving and decision-making through various forms of knowledge acquisition including educational research through a multi-paradigmatic, collaborative culture and multiple perspectives. The policies and resources of a school influence school learning strongest through individual and collective learning promoted through professional development, resources, flexibility, and access to expertise (Hanson, 2001; Leithwood, Jantzi, & Steinbach, 1998; Paul & Marfo, 2001).

School learning influenced by culture, structure, and leadership becomes school knowledge disseminated throughout the school's beliefs and participatory decision-

making embodied in products, systems, and services. Evaluating, analyzing, and reconstructing precise, specific, and measurable goals as well as perspectives, frameworks, and premises avoids confusion and mediocrity to improve school learning. School learning leads to continuous improvement, innovation, and ultimately higher learning outcomes (Hanson, 2001; Katzenbach & Smith, 2003; Leithwood, Jantzi, & Steinbach, 1998; Nonaka & Takeuchi, 1995).

High-performing schools have moved from simply single or double loop learning to MDL where students inquire into why learning is important and how learning occurs. As students study the underlying reasons for learning, the students develop the language of life-long learning and adulthood where individuals take risks, learn from mistakes, and reach consensus with other adults. Internalized learning becomes the basis for sense-making in an ambiguous, anxious world where personal talents and resources aid in reflection, honest dialogue, and clarifying values, beliefs, assumptions, and knowledge (Bruffee, 1999; Cook & Yanow, 1993; Hanson, 2001; Lipman-Blumen, 2001; Morgan, 1997; Ouston, 1999; Peterson & Smith, 2000; Preskill & Torres, 1999; Scribner & Donaldson, 2001; Skrla, 2003). School learning has traditionally been more about day to day group interactions to acquire know how to maintain homeostasis during negative feedback than individual cognitive processes (Barnett, Caffarela, Daresh, King, Nicholson, & Whitaker, 1992; Cook & Yanow, 1993; Donaldson J. F., 1998). School learning is affected most by school culture as principals manage assumptions, symbols, and values of participants through joint discussion and interpretation of events (Bensimon, Neumann, & Birnbaum, 1989; Bolman & Deal, 1997; Cook & Yanow, 1993;

Leithwood, Jantzi, & Steinbach, 1998; McCombs & Whistler, 1997; Ogawa & Bossert, 1995; Preskill & Torres, 1999).

Principals bridge leadership, teaching, and learning with capacity building and collective efficacy (Bonner, 2006; Mulford & Moreno, 2006). Educational leaders cannot rely on sustained, complex learning to come about through day-to-day first order change, situational second-order change, single or double loop learning, or revisions in the dominant schema based on past organizational memory (Barr & Parrett, 2007; Marzano, Waters, & McNulty, 2005; Stacey, 1996). A new paradigm would break down boundaries separating high-poverty schools from the environment allowing students to experience the world fully (Cohen & Ball, 1999; Morgan, 1997). With old theories of educational leadership, organizational analysis, and learning no longer sufficiently complex to adequately frame the new educational context, educational leaders should explore emerging practices from high-performing, high poverty schools, ratchet up the complexity of second-order change and double loop learning as multidimensional learning, and analyze whether these successful practices would be of benefit in their school's particular context.

Change, within school processes such as professional development or student-level interventions, needs to keep multiple levels of results in mind in order to affect the entire system (Schaughency & Ervin, 2006). MDL is an adaptive tool in social systems where schema in two or more of an agent's attractors is questioned and modified iteratively as an agent moves along the edge of chaos. Complex learning occurs when an agent brings this schema to the explicit level to question, revise, and modify behavior. At every stage, schema is co-evolved in response to cooperating and competing agent

schema and behavior (Levin, 2002). The term Multidimensional Learning encompasses the complex notion of paradigmatic co-evolution of reflective practice and metacognition intersecting horizontal and vertical learning of the individual within the network of agents acting within a specific school community and context (Lambert, 2003; Lattuca, 2002).

MDL increases the capacity for urgency through self-reflection to keep the organization in a phase transition longer. By necessity, capacity is multidimensional or it would not be able to hold much. Capacity is created as individual agents migrate to MDL creating the supercritical connections needed to shift the organization as a whole into MDL. A principal's actions creating a sense of urgency are amplified as more agents begin MDL spreading instability throughout the system giving it increasing capacity for organizational adaptation to the present environment (Barr & Parrett, 2007; Stacey, 1996).

High capacity building.

Organizations, as do all living systems, have the capacity for self-organization in order to maintain an identity, become more complex, and increase internal order (Wheatley & Kellner-Rogers, 1996).

> What must be moved from one place to another, from the more to the less successful sites, is capacity and not products or particular innovations. Capacity means understanding the objectives, values, and principles of effective practice, of relevant knowledge, skills and dispositions, and of distributed work within a learning community, all supported by resources to help the system through the adaptive process. (Huber, Moorman, & Pont, 2007, p. 34)

This capacity allows an organization to prepare for an unpredictable future (Wheatley, 2002b). HP2S, as emergent structures, have taken a "radical" departure from the state space occupied by other high poverty schools and use emergent innovations to become

more robust, more resilient, with the capacity to maintain their identity in the face of disturbances (Goldstein, 2001; Heylighen, 2002; Wheatley, 1998).

Because capacity is distributed across the system during self-organization, a complex learning system is robust and resilient. Distribution occurs through local interactions resulting in redundant control and sustainability. As a complex learning system situates itself between too much order and chaos, the organization relies on agents with particular expertise to continually step up and help guide the system to more fit states with small, local actions (Heylighen, 2002; Rowland, 2007a).

> If [small, local actions] become connected, exchanging information and learning, their separate efforts can suddenly emerge as very powerful changes, able to influence a large system. This sudden appearance, known as an emergent phenomenon, always brings new levels of capacity. Three things are guaranteed with emergent phenomena. Their power and influence will far exceed any sum of the separate efforts. They will exhibit skills and capacities that were not present in the local efforts. And their appearance always surprises us. (Wheatley & Frieze, 2006a, p. 3)

The only way the complexity of educational praxis can be managed is through the capacity of the school community to negotiate the interaction of local and global contexts in order to meet the unique needs of marginalized students to receive a thorough and efficient education. Principals build capacity for complexity through fostering a critical sociocultural pedagogy within the school community (Noddings, 2006). High leadership capacity schools are unified, inclusive, data-driven, structured, professional, and relationship-focused with the ability and sustainability to lead themselves (Lambert, 2003; Lambert, 2006). Principals let go of authority, leading teachers to build capacity and emerge as leaders themselves. Principals in high leadership capacity schools

> are characterized by: a clarity of self and values; strong beliefs in democracy; strategic thinking about the evolution of school improvement; a deliberate and vulnerable persona; knowledge of the work of teaching and learning; and an

> ability for developing capacity in others and in the organization. (Lambert, 2006, pp. 243-244)

In order to help schools realize high leadership capacity, principals attend to creating collaborative structures and processes. As capacity builds, the schema of the principal and teachers and the capital they value and attend to intersect strengthening the boundary crossing relationships in the system.

High leadership capacity is characterized by collaborative dialogue intended to stimulate MDL in self and others. Boundary spanning activities such as dialogue and visiting successful schools helps mobilize resources and empower emergent leadership in the school. Teachers value and trust such supportive leadership practices that build relationships. Mixing agents of diverse ability and capital, especially low and high SES parents, within the school community helps a principal foster capacity building between sociocultural groups (Church, 2005; Sparks, 2003; Stacey, 1996).

Emergent leadership is not constructed as much as adapted and evolved continually from a leadership participant's capacity for values-led reflection on experiences in and across all systems to which the agent is connected.

> Within successful school communities, the capacity to lead is not principal-centric by necessity, but rather embedded in various organizational contexts… collaboration…respect…[and] leadership…was not superhuman; rather, it grew from a strong and simple commitment to making the school work for their students, and to building teachers' commitment and capacity to pursue this collective goal. Perhaps most importantly, the responsibility for sustaining school improvement was shared among a much broader group of school community members, rather than owned primarily by formal leaders at the top of the organizational chart. (Copland, 2003, p. 379)

Drawing on multiple forms of capital through networking, utilizing status and position, and connecting to market concerns, capacity and agency can be increased. Informed by sociocultural capital research, these communal, social bonds and

responsibilities raise achievement as opposed to competition and individualism. Transmitted via generational relationships, adults pass cultural capital on to children. The internalization of behaviors and values by children leads to the capacity to act. Instructional capacity's attention to sociocultural capital would be enhanced by a non-deficit viewpoint of marginalized populations, a sense of agency, and the relationships both present and potential within the school community (Cohen & Ball, 1999; Renzulli, Koehler, & Fogarty, 2006; Rury, 2005; Seiler & Elmesky, 2007; Watkins & Tisdell, 2006). Sociocultural capital is important to the "particulars" of education: "a particular context, a particular group of children, and a particular way of educating…The concrete situation has the power to change our general theoretical understanding" (Phelan, 2004, p. 15). Emergence through agency has the power to create capacity.

"Individuals and groups protect or advance their positions within the social hierarchy by preserving, reinforcing, or transforming their stock of capital" (Swartz, 1997, p. 210). With more capital, agents are able to mobilize their resources more efficiently. In part, knowledge as a resource explains why professional development for educators is called capacity building. Marginalized populations are limited in their ability to mobilize resources to negotiate boundaries between their schema and that of the dominant population. Capacity building then becomes the potential to mobilize resources within an arena of struggle, or an environment with ever-shifting fitness peaks. Resources might be available to all agents and groups in some form, but dominant populations have better capacity through networks and relationships to activate or mobilize capital and other resources converting them into other usable forms of capital (Lareau, 2000).

De-privileging marginalized populations through curricular, pedagogical, and policy choices decreases the available capacity within school communities while reinforcing dominant ideology (Nesbit, 2006). "When prevailing power mechanisms are exposed, they will lose their efficacy to the benefit of those subordinate individuals and groups who have access to and are able to use this knowledge" (Swartz, 1997, p. 261). Developing sociocultural capital and strengthening school community capacity can combat the lack of control and resources marginalized communities have in monitoring the quality of education their children are receiving (Noguera, 2004; Schutz, 2006).

Social connectedness through communalism is not collaboration to complete a task but an urgent form of the enactment of the marginalized culture from the community brought into the classroom. Many marginalized students will not leave the communities that are looked down on by dominant society. Capacity building means valuing the community as a worthwhile place to live and providing opportunities for children to develop the capital necessary for survival and success within that community (Schutz, 2006; Seiler & Elmesky, 2007). Students from affluent backgrounds have an alarming "lack of social perspective…especially because students from privileged backgrounds are more likely to hold positions of leadership, authority, and power in the future" (San Antonio, 2006, p. 39). Schools should take advantage of cultural variations to build capacity within the school community and create ties across boundaries with marginalized groups. Social class kinship ties and networks should help determine how to build parent involvement programs (Lareau, 2000; Lee & Bowen, 2006; Noguera, 2004; Payne, 2001). Professional development within marginalized communities needs to be

specific to the sociocultural capital available within a school and be specific to building capacity (Brownstein, 2001).

Attention to capacity through sociocultural capital allows a principal to tap into local support because of attention to local values making capacity building synergistic. Capacity cannot be built without holistic attention to the needs of marginalized students. Cultural practices are possible only after primary needs are satisfied making capacity building dependent on meeting the needs of all stakeholders (Noddings, 2006; Swartz, 1997). In capacity building initiatives, leadership reaches across boundaries to keep existing sociocultural capital structures from being reproduced. Capacity building should recruit emerging leadership—individuals with potential—and develop their skills while helping them act as agents within the school community (Zacharakis & Flora, 2005). Effective leaders dealing in sociocultural capital have membership in several communities building capacity in local and broader educational settings making connections across boundaries adding to the synergistic and negative-entropy effect within the multiple communities of membership (Fincher & Tenenberg, 2006). Schools who build capacity may have negative entropy, but as school community members and effects disperse from their permanent location of the school site, the "school" becomes a "source" of capacity building within the profession of education, community, and global society.

Principals can help shape the capacity of schools systems for continuous improvement through focusing on sustainable leadership including depth, length, breadth, justice, diversity, resourcefulness, and conservation (Fullan, 2006). Patterns in education are driven by the positive feedback of the recessive system and the negative feedback of

the legitimate system creating organizational structure that is in tension between order and chaos allowing for emergent creativity. The redundancy, or fractals/patterns, created produce stability, sustainability, and minute differences in process application allowing a system to judge differences against relevant schema to adapt to more effective strategies for survival (Waldrop, 1992). "The dynamics of teaching and learning are complex with many intervening variables that impact success" (Coleman, 2003, p. 22). Flexibility gives the school the ability to sustain learning by meeting the needs of diverse agents.

Emergence may be unpredictable, but leadership can influence the direction of emergence by acting ethically and in a socially just manner just as they could influence emergence by planning the enculturation of students by valuing only the sociocultural capital of the dominant class. Two parts of a metaparadigm of leadership are to sustain hope and bring values and ethics to the center. A principal can sustain hope by avoiding negativity, developing a network of relationships, focusing on meta-attractors within a school community, engaging in MDL, and building collective efficacy. The principal can bring values and ethics to the center by valuation conducted through dialogue. HP2S do not delay action in order to search for a perfect solution to low achievement (Barr & Parrett, 2007; Church, 2005). HP2S allow results to unfold.

Finally, sustainability relies on a system's ability to renew leadership from within the school system by looking to teachers and administrators who share schema and attractors already emerging (Public Agenda, 2007).

> Leaders developing other leaders is at the heart of sustainability…the main mark of a principal at the end of his or her tenure is not just the impact on the bottom line of student achievement but equally how many good leaders the principal leaves behind who can go even further. (Fullan, 2006, p. 62)

District, state, and federal efforts cannot simply send in a short-term group of experts to tell schools what to do to improve because "there is no sustainability there"… Transformation has to be "a much different conversation, among more people…because there truly is no silver bullet" (Gewertz, 2007, pp. 1, 16).

The more comprehensive, complete, and sustained capacity building efforts are, the more likely those efforts create true change in teaching and learning. Sustainability of reform efforts depends on a supercritical mass of individuals having the capacity to collectively learn emergently into the future (Cohen & Ball, 1999; DuFour & Eaker, 1998; Fullan, 2006). The sustainability of leadership capacity depends on a sustained sense of purpose maintained by keeping a complex system far from equilibrium. The complex system also emerges through succession planning and selection. Agents within the system receive planned enculturation during periods far from equilibrium as the learning cycle moves knowledge from tacit to explicit and back again. Leadership establishes a rhythm of development feeding order parameters into the system to hold it at the edge of chaos where the practices of the informal network are converted into policy overpowering dominant schema as the system becomes more socially just (Lambert, 2003; Stacey, 1996).

Third order change.

Principals who practice emergent leadership and MDL share fluid leadership with agents in the system, allowing responsibility for the problem at hand to flow from person to person as reflection and self-organization within context demands particular expertise (Lambert, 2006). Single-loop learning, through the application of negative feedback, limits the school to routines that store dominant forms of previous learning resulting in

planned enculturation and positive feedback ensuring no change in those dominant forms of schema. Recessive schema buried in the sociocultural capital of marginalized agents allows for creative dialogue across boundaries, and the questioning of dominant practices opens up the possibility for double-loop learning. When the tacit, dominant schema are exposed long enough by creative, exploratory dialogue to effect change in organizational schema, defensive behaviors by the dominant class kick in. One defense is to block critical reflection and allow maladaptive learning to stabilize dominant schema keeping the school circling established attractors that do not allow the school to co-adapt and co-evolve within the present environmental landscape to ensure its continued improvement and survival (Stacey, 1996). "Hoy and Miskel (1987) suggested that organizational effectiveness is a multidimensional concept that reflects values and biases as well as multiple constituencies that define and evaluate school effectiveness with a variety of criteria" (Johnson, Livingston, Schwartz, & Slate, 2000, p. 5).

Similar to single and double-loop learning, first order and second order change share certain characteristics. These types of learning and change monitor effective versus ineffective change by seeking out best practices in curriculum, instruction, and assessment, and communicate strong ideals and beliefs with constant modeling of those beliefs. First order change allows for incremental, gradual change while second order change dramatically departs from standard problem-solving practices within the organization. Tension exists between the characteristics necessary for either first or second order change. "Leadership behaviors that focus on the long-term potential of an innovation…and adapting to a changing landscape…are probably not vital to the incremental, predictable alterations that characterize first-order change but might be

critical to large leaps that are not logical extensions of the past" (Marzano, Waters, & McNulty, 2005, p. 73). So, single-loop learning and first order change approach daily problems based on previous organizational learning. Double-loop learning and second order change come into play when an organization encounters a unique problem and is willing to look beyond current schema and known practices for solutions that can be integrated into organizational learning. Double-loop learning and second order change result in adapted paradigm and schema to be prepared for exact recurrences of a previously encountered problem. But recurrences are never exact recurrences even if organizations recognize them as such: each is unique. Conceptualizing a third order of change informed by complex organizational learning allows us to think of an organization reaching a critical capacity to balance the tension between first order and second order change to keep the organization at the edge of chaos for sustained periods of time. First order change occurs during the self-organization phase of an organization, then, during second order change, the organization moves into the phase transition where creativity is possible and schema are rewritten and, possibly, the recessive, marginalized system can overthrow the dominant system. When a system gains the ability to be prepared for unpredictability, the system has developed readiness for perpetual change with the critical amount of capacity keeping it at the edge of chaos balanced between the tension of first order and second order change for sustained periods of time. The system suddenly has the ability to break free from the pull of the attractor of a potential state and use good enough processes to move toward a more fit state. However, the system maintains the possibility that an even better state may reveal itself at some point in the future (Heylighen, 2002; Wheatley, 2007).

Critical praxis.

Low cognitive complexity creates conditions for one-dimensional thinking. A lack of complex cognition could have serious implications for closing the opportunity gap for marginalized groups. A high cognitive complexity, the sophistication of human thinking and problem solving, provides a vehicle for connections across the curriculum illuminating non-deficit thinking, highlighting the need for sensitivity to sociocultural capital, and could be a significant piece to capacity building. With schema predisposing agents to act in certain ways, praxis, the unity of reflection and action, should include metacognitive reflection as essential for leadership. Critical reflection allows for adaptation of interventions to the local need instead of strict adherence to policy and procedure within the system. Critical praxis becomes a component of MDL building the capacity for agency to meet local need, uninhibited by dominant schema, to recognize emergent phenomena and realize social justice for the marginalized community (Goldstein, 1999; Hill-Jackson, Sewell, & Waters, 2007; Schaughency & Ervin, 2006).

Schools need to be willing to take on the responsibility of becoming "active participants in effecting change" through ongoing assessment and evaluation to reach the level of complexity required as part of MDL (Church, 2005, p. 85). The school collaboratively problem solves within the context of critical problems and communicating progress and challenges back to the school community. Faculty learning takes place within multiple sociocultural contexts ranging from the individual classroom through the school site across the entire academic discipline and occurring in specific moments of time. In MDL, critical praxis includes both the individual and shared schemas present in the system (Copland, 2003; Lattuca, 2002; Stacey, 1996).

Punctuated renewal

"Complex systems…continually regenerate themselves" (Bloch, 2008, p. 545). These systems seek renewal and in that quest gain energy. At equilibrium, a system's processes cease to function so a complex system keeps moving, seeking far-from-equilibrium, and exchanging information at its boundaries with the environment so the system can grow, change, and seek out more desirable states (Davis & Sumara, 2001; Heylighen, 2002; Rowland, 2007b; Wheatley, 2006a). Disequilibrium keeps order from freezing a complex system and rendering it unable to continually adapt and change for better fit with the environment (De Wolf & Holvoet, 2005; Rowland, 2007a). Punctuated renewal is the disruption of the patterned behavior of the organization around an attractor (Heylighen, 2002). Renewal is "punctuated" in the sense that the organization transcends from one state to another in such short intervals that the process of improvement is continuous (Goldstein, 2005; Wheatley, 2006a).

Stuart Kauffman talks about attractors as "a state that we collectively maintain ourselves in, an ever changing state where [technologies and pedagogies]…come into existence and replace others" (Waldrop, 1992, p. 322). Principals act as catalysts in a sort of doorway between the multiple dimensions of learning to drive a sense of urgency necessary for ideas and information to pass between intra- and inter-system boundaries. "Once you get beyond a certain threshold of complexity you can expect a kind of phase transition [where systems] undergo an explosive increase in growth and innovation" (p. 126). So, complexity itself emerges as multiple complex systems absorb each other into a supercritical complex system spanning the boundaries of the local school community, state, national, and global systems. Education needs to become supercritical by exploiting

the capacity of all its subsystems and partner systems. In supercritical systems, continually punctuated renewal would emerge as the system is allowed to self-organize by leadership. Principals act as a catalyst trying to drive a system to become supercritical by garnering support across boundaries for socially just programs and initiatives (Watkins & Tisdell, 2006).

Complex systems operate moving away from equilibrium which creates tension between boundaries and levels of complexity "enabling interaction as a mutual transformation of energy or information" (Semetsky, 2005, p. 26). Boundary conversations necessary to reform rely on renewal since "at equilibrium nothing happens…time and space do not matter" (Stacey, 1996, p. 61). Equilibrium has to be redefined for complex adaptive systems to mean a state of tension as opposed to a state of rest. As power fluctuations happen throughout adaptations and happenstance, ripples or avalanches cause changes in all other members of the environmental landscape until temporal equilibrium is reached and then another fluctuation occurs. This evolution of systems is infinite and essential to the continuance of life just as it is essential to the survival of a school community (Waldrop, 1992).

As I have discussed various components of schools as complex adaptive systems, I hope I have painted a convincing picture of high performing schools as continually renewing organizations with emergent leadership dependent on collective efficacy, orbiting worthwhile strange attractors, empowering agency in its participants, utilizing multidimensional learning, attentive to and valuing diverse sociocultural capital, fostering collaboration across system boundaries, committed to social justice, alert to shifts in the environmental landscape with the optimism to approach challenges head-on (DuFour &

Eaker, 1998). Leadership in a renewing organization has the responsibility of keeping the system open and vibrant through participation. In Marzano et al's (2005) meta-analysis of school leadership, Fullan is quoted,

> The more accustomed one becomes to dealing with the unknown, the more one understands that creative breakthroughs are always preceded by periods of cloudy thinking, confusion, exploration, trial and stress; followed by periods of excitement, and growing confidence as one pursues purposeful change, or copes with unwanted change. (p. 74)

The science of complexity looks at systems as moving through phases of equilibrium and renewal as punctuated equilibrium. But existing in the phase transition where renewal occurs is more desirable to a complex adaptive system to ensure maximal growth and survivability so I think of successful schools as experiencing punctuated renewal. A system requires short periods of equilibrium to gather itself, to move explicit learning to tacit understanding, and to ratchet up complexity to a new level; however, sitting too long at equilibrium weakens and might even kill an organization just as prolonged equilibrium would kill a biological organism. Any given model, solution, or practice will not work in every circumstance, so organizations continually seek new peaks in the environmental landscape (Brady, 2003).

> Creating a coherent plan for a school…is evolutionary and recursive, not linear…the plans themselves need to be written in pencil…Educators…need the flexibility to take advantage of unexpected opportunities…that advance the school community's shared vision for the school…to ensure that all initiatives contribute to enhancing student learning. (Church, 2005, p. 99)

We should begin to adopt the language of emergence when discussing underserved populations and enacting true reform in education that will benefit the entire school community as opposed to reproducing dominant sociocultural capital that ensures the continuation of the present social hierarchy. However, planned enculturation guarantees

the eventual death of the system when punctuated renewal is thwarted. “Becoming other” is the language of emergence (Lambert, 2003).

Summary

Attending to sociocultural capital within strategic plans is important to order parameters and capacity to keep organizations in the phase transition to allow creative emergence. Sociocultural theory, through a lens of complexity, highlights the importance of agency as individuals either reproduce or transform aspects of practice within global and local activities. So agency is an essential facet of MDL in HP2S. Instead of measuring against rules and policies, the agents and their sociocultural capital become the self-referential core against which they can gauge emergence (Nasir & Hand, 2006). MDL illuminates the possibility of the marginalized students in HP2S acting as agents utilizing their sociocultural capital to better the local school community. Increasing the complexity of their own personal schema to include new capital from the dominant schema gives these students the capacity to act globally into the future based on an understanding of the past (Seiler & Elmesky, 2007; Semetsky, 2005).

School leadership should be multidimensional in order to understand the complexity of learning that occurs during the interaction of sociocultural capital across dominant and marginalized boundaries within specific environmental contexts dependent on a broad historical past (Starratt, 2005). Status quo involvement can reproduce limited, exclusionary power within the school system keeping deep, meaningful school community engagement from happening. Schutz (2006) feels,

> If we as educators and education scholars truly wish to promote vibrant school-community relationships, then we must widen our understanding of the contexts that are part of the field of education. We must learn to engage schools from the outside, not just from the inside. (p. 726)

The contextual effect, the setting of the school, includes peer interactions, parental involvement, expectations of staff and parents, and disciplinary climate and is closely related to sociocultural capital (Fullan, 2006). "Effective measures are unique to each institution on the basis of its mission, relative to the needs of the constituency" (Johnson, Livingston, Schwartz, & Slate, 2000, p. 6). Schools are often focused on internal school environments when they should be attentive to the entire school community environment, how sociocultural capital of students should be drawn on, and when students must be protected from the external environment so learning can take place. Emergent leadership collectively realizes the capital potential in any given situation. Border conversations for schools, such as parental involvement efforts, allow agents to realize their capital potential, or capacity, within learning opportunities; otherwise, the school may be operating too far off the social center of the community where no congruence between the cultural and social capital of the school and the community exists (Swartz, 1997).

Learning is situational where the learner gives personal meaning to new ideas based on experience which creates an emotional, event-based definition of that idea. Agency plays into this personalization allowing learning to be activity and/or event based with an emotional, as well as efficacy-based, co-adaptive response between the marginalized learner and the environment to better the system for the learner and possibly the learner's local context (De Laat & Lally, 2003). Since actions cannot determine or be linked to outcomes within a complex environment, leadership must judge actions by other means such as "the action that is morally good in itself…that keeps options open…and not yield to competitors, [and] allows managers to detect their errors as soon as possible" (Stacey, 1996, p. 271). Emergent leadership requires agency in that each

agent has the responsibility to find the solution to the problem within the problem itself bound only by a socially just schema as opposed to bowing to the pressures of the dominant schema (Church, 2005, p. 84).

Through MDL and critical praxis, a principal can identify which order parameters produce specific, desirable attractors to create conditions for predicting short-term outcomes. "Morgan (1997) contends the primary responsibility of leaders is to create the environment where the elements of complexity science can emerge" (Gilstrap, 2005, p. 63). Within complexity theory, leadership can use "[order] parameters such as energy and information flows" (p. 61). If order parameters are too low and the complexity of relationships is too low, the system becomes subcritical. Principals increase order parameters and act as a catalyst to hook together rich, robust connections to move a system toward supercritical (Waldrop, 1992).

Within complexity, "natural selection provides a kind of upward ratchet" (Waldrop, 1992, p. 173). Natural section could be important to fads in education dying off or sticking around as they are assimilated into existing conditions, adapted, analyzed as data against existing schema, and assimilated into tacit practice. Principals provide the safe environment for innovation, reshuffle building blocks, and hook up relationships to bring together new combinations of practice to weed out weak and unpromising opportunities to encourage potential practices to emerge. A reproduction of sorts, complex practices make "sexual" exchanges between concepts to allow new, emergent schema that look similar to previous concepts and practice to renew the organization (Waldrop, 1992).

Converse to trait theories that favor the dominant class by describing the right to leadership by individuals with skills and abilities greater than those of their subordinates, environmental theories rooted in complexity view leadership as emerging "as a result of time, place, and circumstance" (Marzano, Waters, & McNulty, 2005, p. 5). Agents build their own package of emergent strategies "to form the response they feel most appropriate to their particular failing school" (Brady, 2003, pp. Conclusions, 2). Leadership encourages meaningful relationships around a shared attractor while promoting a sense of collective efficacy which can lead to emergent outcomes for the system. Resulting synergy from self-organization and daily, local interactions of agents around the mission, vision, values, and goals of the system drives emergent macroscopic patterns that can lead to sustainability of reform efforts. In traditional leadership models, actions upon a staff equal results. In self-organizing schools, leaders take actions to build leadership capacity in staff and then work with staff to take collective action to get sustainable results with feedback an ongoing dialogue during the process (Bower, 2006; Lambert, 2003; Levin, 2002).

"Order based on rules someone else has created does not allow us to respond to increased demands and complexity of local work" (Bower, 2006, p. 70). The structure of a socially just school is dependent on learning based on critical praxis resulting in organizational transformation and punctuated renewal as opposed to knowledge transfer. Leadership actions in a complex adapting school empower self, teachers, and students to learn forward toward high expectations (Barr & Parrett, 2007; Bonner, 2006; Copland, 2003; Fels, 2004).

A change in system behavior can only be called innovative or creative if the actions improve fitness with the environment for all agents. Creativity is a change in schema resulting in innovative behavior. Principals should desire creative and innovative changes in order to be effective (Stacey, 1996). Innovative, complex MDL "directly challenging learners' existing misconceptions has been shown to be one of the most effective strategies when attempting to enact conceptual change" (Brighton, 2003, p. 202). Self-awareness and self-reflection necessary for emergent leadership consists of the interaction of collective efficacy, MDL, and an explicit understanding of one's own sociocultural capital (Gehrke, 2005).

Based on a thorough review of the literature, complexity science seems to contribute to an understanding of how leadership in HP2S emerges. The literature begins to weave a pattern of how principals in HP2S can harness emergent leadership to allow capacity for high student performance to emerge from the current school context to sustain successful school reform. Emergent leadership as an archetype arising from a view of education through a lens of complexity values each person in the school community as part of the capacity for meaningful change throughout sustained periods of punctuated renewal, independent of dominant forms of planned enculturation, as an uncertain future unfolds during the process of multidimensional learning. This view is summarized nicely by Osberg (2005),

> With emergence, the 'function' of education is therefore *not* to ensure that a desired educational end is achieved, *nor* to socialize people into a common way of being. We can understand it rather, as a practice which always complicates the scene, unsettles the doings and understandings of others, in order to keep open a space of difference and otherness—a space of radical contingency—which is supportive of the emergence of each and every person as a unique and irreplaceable being." (p. 82-83)

CHAPTER THREE

Methodology

Introduction

The purpose of this study was to explore the cognitive framework for a new metaparadigm of emergent leadership as suggested by the literature and analyzed through the perspective of acting principals in HP2S. The literature helped answer the questions that were explored to address the research question: Does complexity science contribute to an understanding of how leadership in high-performing, high-poverty (HP2) schools emerges? And, in what ways do principals in HP2S allow capacity for high student performance to emerge from the current school context to sustain successful school reform? The Delphi method was used to explore the perspective of acting principals in Missouri HP2S. This chapter describes the methodology used to complete the study and includes a description of the Delphi research design, selection of experts, procedure, and data analysis.

Finding a qualitative methodology true to the phenomenon of emergence led me to the Delphi Method. Developed for the RAND Corporation for the purpose of "structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem" (Linstone & Turoff, 1975/2002, p. 5), the Delphi seemed a natural method for exploring emergent themes from principals serving in HP2S as viewed through the lens of complexity science. A panel of expert principals serving in HP2S, as identified by multiple criteria, was convened in a virtual space to protect anonymity and allow for ease of communication across time and space. I monitored, summarized, and clarified their reflections,

conversations, and negotiations around prompts from the literature and responses to a questionnaire into emergent themes which could serve as a metaparadigm for emergent leadership in Missouri high poverty schools.

Uses of the Delphi Technique

The Delphi is most commonly applied when "there is incomplete knowledge about a problem or phenomena" (Skulmoski, Hartman, & Krahn, 2007, p. 2). In education, the Delphi has been used to "generate ideas and forecast changes" for various purposes (Clayton, 1997, p. 377). Perhaps more accurately suited to this study is an understanding that "common surveys try to identify 'what is,' whereas the Delphi technique attempts to address 'what could/should be" (Hsu & Sandford, 2007, p. 1). In education, Delphi has been used quite extensively, but "the support underlies the fact that Delphi is a method of last resort in dealing with extremely complex problems for which there are no adequate models" (Yousuf, 2007b, p. 5).

Linstone and Turoff (1975/2002) described the following conditions, and they were emphasized by Yousuf (2007a; 2007b), as leading to the use of Delphi:

- The problem does not lend itself to precise analytical techniques but can benefit from subjective judgments on a collective basis;
- The individuals needed to contribute to the examination of a broad or complex problem have no history of adequate communication and may represent diverse backgrounds with respect to experience or expertise;
- More individuals are needed than can effectively interact in a face-to-face exchange;
- Time and cost make frequent group meetings unfeasible.

Further, the use of the Delphi process is particularly applicable in education when researchers are:

- Exploring urban and regional planning options;
- Planning curriculum development;
- Putting together an educational model;
- Delineating the pros and cons associated with potential policy options.

Many authors (Chou, 2002; Clayton, 1997; Franklin & Hart, 2007; Hsu & Sandford, 2007; Rowe & Wright, 1999; Skulmoski, Hartman, & Krahn, 2007; Wilhelm, 2001; Yousuf, 2007a) have explored the application of Delphi since its conception as a research tool, but most references rely on lists of applications first generated by Linstone and Turoff. Other applicable conditions for Delphi in education include:

- Efficiency of group communication process desirable and appropriate;
- Heterogeneity of panel must be preserved to avoid bandwagon effect;
- Developing causal relationships in complex economic or social phenomena;
- Exposing priorities of personal values, social goals. (Wilhelm, 2001, p. 4)

Wilhelm (2001) further described the foundations of the Delphi technique as trying to overcome the tendency for face to face meetings to be dominated by one or a few strong individuals; discussions fall into valleys or ruts for too long; group-think sets in or extreme pressure to conform occurs; too much secondary or irrelevant information appears in the way; and finally, in the absence of historical or quantitative data, "extrapolating on trends…can generate starting data for a scientific analysis, but opinion determines the extrapolation" (p. 7). In particular, Wilhelm believed Delphi should be used in education theory to determine skills and competencies of employees, to predict trends, to analyze policy, and to study characteristics of effective teachers and administrators. Wilhelm (2001) said:

> Many social problems are not amenable to solution by pure positivistic or scientific methods. Where there is insufficient data on the problem under investigation and incomplete theory on both its cause and effects…try to obtain the relevant intuitive insights of experts and to use informed judgment as systematically as possible. (p. 6)

In looking at HP2S and the leaders who helped bring them about, we should listen to Clayton (1997, p. 382), "If the objective is the identification of content based on expert consensus, then the Delphi technique is an appropriate choice as it may enhance the significant contributions of the panel." Yousuf (2007a, p. 80) also believed Delphi "has application whenever policies, plans, or ideas have to be based on informed judgment."

From a standpoint of qualitative research, "the Delphi method is well suited to rigorously capture qualitative data" (Skulmoski, Hartman, & Krahn, 2007, p. 9). Because of criticism and critique of the rigor of the method itself, Delphi research needs to be clearly defined in a study to be considered rigorous. Such a definition should include the type of feedback that is truly Delphi feedback, the criteria for recognizing convergence and consensus in the data, and the selection criteria of panel experts. While "the technique has shown no clear advantages over other structured procedures" (Rowe & Wright, 1999, p. 372), the complexity of my research topic seems to lend itself to the Delphi technique in using a research method whose characteristics resemble the properties of complexity science.

History of the Delphi Technique

The Delphi method was developed by Dalkey and Helmer at RAND in the 1950's and 1960's as a structured process for collecting and analyzing the collective opinions of experts through rounds of questionnaires with results deepened by researcher-controlled opinion feedback from the expert panel (Wilhelm, 2001).

> The Delphi method…is uniquely suited to studying topics with little historical evidence, related to rapidly changing events, and of great complexity…in collecting the judgments of experts on a particular topic to (a) document and assess those judgments, (b) capture the areas of collective knowledge held by professionals which is not often verbalized and explored, and (c) force new ideas to emerge about the topic. (Franklin & Hart, 2007, p. 238)

Able to handle unpredictable findings that emerge during exploration, Delphi approaches problems from multiple perspectives through group communication processes which allow holistic treatment of complex, interrelated issues (Goodwin, 2002; Turoff & Hiltz, 1996; Yousuf, 2007a). Goodwin (2002) commented on her Delphi study in looking at complexity science in educational leadership: "Given the theory which generated this study, it seemed more appropriate for the principals' interactions to emerge dynamically as a product of their discussion" (p. 182). These discussions allow practicing experts to realize a dynamic, iterative convergence of professional, proven experience and opinion on real-world educational issues in real-time (Hsu & Sandford, 2007). Skulmoski, Hartman, and Krahn (2007) described Delphi in emergent terms as "used to investigate what does not yet exist" (p. 2).

Delphi is primarily a qualitative methodology. Skulmoski and colleagues (2007) further explained:

> Qualitative research is interpretivist in the sense that the researcher is interested in how the social world is interpreted, understood and experienced; the researcher is flexible and sensitive to the social context within which the data was collected; and qualitative research is about producing holistic understandings of rich, contextual and detailed data. (p. 9)

The Delphi does not seek to quantify except to focus attention upon consensus of group communications being studied and to collect and synthesize such expert knowledge to contribute to the further evolution of the public education system (Turoff & Hiltz, 1996). The resulting model could provide a beneficial flow of information into the broader

educational system so the experts can concentrate on continual improvement of their own schools as well.

From a standpoint of complexity science and educational leadership theory, Wilhelm (2001) asked,

> "given the fact that the future is really unpredictable… should researchers allow perfect to become the enemy of good enough and stop the process of thinking about what might happen and the consequences of such events because they lack the perfect knowledge with which to make informed decisions?" (p. 8)

Delphi becomes the search for public wisdom and deliberative judgment by "draw[ing] on a wide reservoir of knowledge and expertise" (p. 10).

A research process that relies particularly on computer-based Delphi as a vehicle for continuous, iterative feedback retains the essence of complexity science. Giving the panel of participating experts the freedom to self-organize a collective response through asynchronous interaction, the entire panel interacts online across time and space on the issues to which they feel confident in making contributions (Turoff & Hiltz, 1996).

> Because of its emphasis on communication, Delphi can be in danger of dismissal as merely a form of data collection, when it is much more than that. Its iterative feedback method develops an insight, which in its totality, is more than the sum of the parts. (Yousuf, 2007b, p. 6)

The dynamic quality of Delphi also makes it sensitive to environmental changes that can ripple forward in time across a field of expertise capturing the changing and converging schema of a panel of experts as they reflect on their participation in group communication surrounding a real-world problem with other experts struggling within a similar arena of practice (Franklin & Hart, 2007; Turoff & Hiltz, 1996). While Franklin and Hart (2007) believed "it gives the data a level of authenticity not realized by other methods," they

clarified, “Delphi is best used as laying the groundwork for future studies using other methods” (p. 244).

Regardless, Turoff and Hiltz (1996), pioneers in computer based Delphi, believed this type of Delphi allows experts to “express a large set of independent relationships and judgments” interacting in their specific field during a group communication process in order to “produce a ‘whole’ model of the ‘system’ being described”, or in other words, “a collaborative model of a complex situation” (p. 14-15). From a complexity viewpoint, Delphi allows the emergence of a model to form during the dynamic, synergistic interaction of an expert panel. These experts self-organize around a specific issue or topic of complexity and ambiguity where traditional research methods may fail to produce relevant, usable results.

Characteristics of the Delphi Technique

There are four primary features of Delphi. Anonymity assures the merit of ideas carries weight in the group communication as opposed to individual panelist reputation. Iteration allows ideas to evolve and converge over the rounds as the group response progresses toward consensus. Controlled feedback revealed to the group from interaction stimulates panelists to clarify and revise their opinions. Statistical analysis and interpretation of the group opinion is averaged in the final response (Rowe & Wright, 1999; Skulmoski, Hartman, & Krahn, 2007; Wilhelm, 2001; Yousuf, 2007a).

Controlled feedback is the well-designed summation of a concluding iteration redistributed to panelists for the purpose of reflection, exploration, and clarification of information gleaned from the group communication. Through multiple rounds, the complexity of responses should increase as communication becomes more focused. A

key feature of Delphi, controlled feedback reduces "noise." Noise is bias based on group or personal interests that deflect focus away from the study (Hsu & Sandford, 2007).

The Delphi technique focuses attention on specific issues of interest to the researcher, in this case: HP2S. Delphi serves as a communication framework between geographically separated, diverse experts. The method minimizes pressures of conformity and other psychological and/or professional barriers. Panelists should feel they have equal opportunity for participation. The confidential nature of the research allows more open communication from panelists and helps prevent bandwagon and groupthink effects. The asynchronous process allows for flexible time frames across wide geographical areas. The research process produces precise documents of record for the facilitator (Wilhelm, 2001; Yousuf, 2007a).

Other advantages include the emergence of a representative opinion through statistical consensus. The method is relatively easy to use with no requisite advanced mathematical expertise. The Delphi technique has existed for a considerable length of time now with multiple researchers having shown the statistical tendency to converge in the direction of true values and produce "relatively reliable forecasts" giving Delphi a high degree of validity (Yousuf, 2007a, p. 87).

Assumptions and Appraisals of the Delphi Technique

In conducting this study, the following methodological assumptions were made:

1. The Delphi Method would produce emergent themes from "collective intelligence" more valid than decisions made by an individual (Turoff & Hiltz, 1996).

2. A Delphi panel could be convened representative of educational leaders who had served in HP2S through the process of reform that would be as valid an expert panel as in any other research method (Linstone & Turoff, 1975/2002).
3. The panel of experts would respond to the prompts and questions honestly (Wat-Aksorn, 1999).

The following limitations have been discussed in the literature in regards to Delphi and were relevant to this study:

1. The study focused on principal leadership in HP2S in Missouri and might not be generalizable outside of similar schools within the state of Missouri. Congruence with findings from the literature on HP2S would substantiate or question findings. Results generalizable within the state would still be useful to a significant number of school communities.
2. Using a Delphi Method is time consuming for participants. As principals are already extremely busy, the study lost the interest and participation of many potential panel members.
3. The Delphi Method has several common reasons for failure (Linstone & Turoff, 1975/2002). Three were pertinent to this study:
    a. "Imposing [researcher] views and preconceptions of a problem upon the respondent group by overspecifying the structure of the Delphi and not allowing for the contribution of other perspectives related to the problem;
    b. "Poor techniques of summarizing and presenting the group responses and ensuring common interpretations of the evaluation scales utilized in the exercise;
    c. "Ignoring and not exploring disagreements, so that discouraged dissenters drop out and artificial consensus is generated" (p. 6).

The first limitation was overcome by relying on the research questions that framed the purpose and scope of the study as informed by the literature on HP2S and complexity

science. The second and third limitations were controlled by including narrative responses to individual items verbatim during the following round.

Other limitations included the possibility that consensus would not be true consensus and that the method was not as straightforward and simple as a first time researcher would think. The researcher may have imposed his view and/or preconceptions of the problem or relied solely on the Delphi survey to communicate with panelists. The panel might not have accurately interpreted the evaluation scale used by the researcher. The researcher could have poorly summarized and presented the group response back to the panel or ignored dissent present in the response since Delphi forces convergence of opinion and can eliminate extremes (Turoff & Hiltz, 1996; Yousuf, 2007a).

Other criticisms of Delphi have included the argument that it is unscientific; it depends on select judges and has low reliability; it is sensitive to the quality of the questionnaire; and the degree of expertise in the data collected is uncertain (Yousuf, 2007b). Strongly opinionated and confident panelists may have been the ones who agreed to participate while milder experts might not have participated and results could be skewed. This skew was partially overcome by guaranteeing anonymity (Franklin & Hart, 2007). Further, the limitation of large blocks of time and investigator ability to shape the opinions of panelists through skewed feedback was controlled by the research questions, a short number of iterative rounds, and committee oversight (Hsu & Sandford, 2007; Skulmoski, Hartman, & Krahn, 2007). Finally, because Delphi is based on opinion, "findings…become person- and situation specific" (Wilhelm, 2001, p. 21). However, from a complexity science perspective, contextually specific findings are a natural and

expected outcome in a world where short term predictability is the best hoped-for outcome.

Types of the Delphi Technique

Many different types of Delphi have emerged since the first were conducted at the RAND corporation. Franklin and Hart (2007) discussed the classical Delphi which is a "forum for establishing facts about a specific situation or topic"; decision-making Delphi which is "used to encourage collaborative decision making"; and policy Delphi whose purpose is "idea generation about a topic" (p. 238). Wilhelm (2001) discussed conventional (or classic), policy, real-time, and adversarial Delphi types. Real-time is used at conferences or other professional gatherings, and adversary Delphi is used when decisions have to be made in adversarial conditions. Clayton (1997) also discussed conventional, real-time, and policy Delphi. Turoff and Hiltz (1996) discussed the Trend Model Delphi in a computer based process. "This Delphi involves first choosing a specific trend of concern to the group" (p. 10). In the case of HP2S in Missouri, choosing specific trends of concern in high poverty schools would be the processes a principal in a high poverty school has to attend to in order to influence the school to become a HP2S. Other general characteristics of the Trend model include "the ability of a group to contribute to building a specific list, to be able to apply specific voting capabilities, and to be able to score the list by voting results" (p. 11).

In classical Delphi, feedback consists of medians, distributions, and minority arguments (Rowe & Wright, 1999). A normative Delphi "focuses on establishing what is desirable in the forms of goals and priorities" (Yousuf, 2007a). Policy Delphi is used to get all the ideas about a topic out on a table for discussion of pros and cons, impact and

consequence, and acceptability. Policy Delphi is not to generate consensus or make decisions. Franklin & Hart (2007, p. 238) quoted Murray (1992): "the purpose of policy Delphi is to collect a 'rich, meaty, stimulating body of opinion' (p. 18) to inform sound decision-making."

Further recommendations by Franklin and Hart (2007) for policy Delphi included using email for anonymity, expedition, and primary raw data native in digital format. The definition of "expert" and how to recruit those experts should be formed early in the process, and the study initiated with the panelist work schedule considered. In the Policy Delphi process, the researcher develops a valid first round questionnaire that is informed by the most recent literature but seeks to uncover information newer than the most recent literature. Unlike other forms of Delphi, three rounds do not provide enough iteration because the first round is open-ended. The researcher uses member check from the previous round as the new round is sent out to panelists by including the comments from the previous round. Logistically, the researcher should also plan for data storage because of the large amount of data generated.

Skulmoski et al. (2007) pointed out the obvious but important realization "that there is no 'typical' Delphi; rather that the method is modified to suit the circumstances and research question" (p. 5). In order to keep the research method in line with the essence of complexity, "the merger of Delphi and Computer Mediated Communications potentially offers more than the sum of the two methods" (Turoff & Hiltz, 1996, p. 20). The electronic Delphi (e-Delphi) has facilitated the evolution and development of the Delphi in helping resolve problems of sloppy execution, long periods of time between iterations, lost questionnaires and/or attrition of panelists. Panelists in today's education

field may feel that e-Delphi makes participation and completion easier and less time-consuming by allowing them to type quickly and return responses immediately making reflection on open-ended questions less burdensome while giving the researcher the added benefit of raw data being in digital format. The internet and online surveys allow for flexible group interaction (Chou, 2002; Skulmoski, Hartman, & Krahn, 2007; Yousuf, 2007b). "In computer based Delphi, the structure is one that reflects continuous operation and contributions" (Turoff & Hiltz, 1996, p. 8).

This study of HP2S seemed to most closely fit the Trend Model Delphi of Turoff and Hiltz (1996) in a computer based process. In the case of HP2S in Missouri, choosing specific trends of concern in high poverty schools would be the processes a principal in a high poverty school has to attend to in order to influence the school to become a HP2S. The group of expert principals contributed to a list and voted using a specific format to rate the importance of the items on the list.

Procedural Steps in the Delphi Technique

Just as complexity science argues that traditional scientific inquiry erringly expects to break component parts of a problem down into pieces that add up to the whole, "the requirement of empirical social science research to use simplification and reductionism in order to study highly complex phenomena seems to be at the root of the problem…much of the Delphi research…would appear to have done so" (Rowe & Wright, 1999, p. 369). Many researchers using Delphi have chosen simplified, easily validated designs instead of taking difficult problems and applying a rigorous methodology to uncover deep, descriptive data. The biggest challenge may be finding a starting point from which to conduct the Delphi.

"Delphis intended to obtain descriptive data through empirical input should be tied to the research question. The theoretical propositions or working hypothesis of the study often serve as viable starting points for the inquiry" (Wilhelm, 2001, p. 13). Turoff and Hiltz (1996, pp. 3-4) outlined a typical group communication process:

- Recognition of the problem
- Defining the problem
- Changing the representation of the problem
- Developing the goals associated with solving the problem
- Determining the strategy for generating the possible solutions
- Choosing a strategy
- Generating the evaluation criteria to be applied to solutions
- Evaluating the solution criteria
- Generating the solutions
- Evaluating the solutions

This outline can provide a basis for organizing the methodology applied in exploring principal leadership in HP2S. The strategy was to conduct a blended Delphi using a series of iterative rounds, three rounds of questionnaires issued to a panel of experts who asynchronously conversed in a cyber environment while the facilitator aggregated and analyzed responses and iteratively distributed controlled feedback to panelists in an attempt to move the conversation toward convergence and consensus (Clayton, 1997; Hsu & Sandford, 2007; Skulmoski, Hartman, & Krahn, 2007; Wilhelm, 2001; Yousuf, 2007a).

Selection of Experts

In Delphi, the researcher uses considerable thought and purposive sampling to identify a group of experts who will grapple with the selected research topic in order to gain a unique, authentic perspective beyond available literature (Franklin & Hart, 2007; Yousuf, 2007a). Using recognized experts practicing in the field ensures varied information is shared and collected in the group communication process that is of value

beyond what might be collected in a statistical aggregation mode of the general populace of practitioners (Rowe & Wright, 1999). The selection of subjects "directly relates to quality of the results" (Hsu & Sandford, 2007, p. 3). Subjects 1) should have similar backgrounds, knowledge and experiences in the issue, 2) should be competent to provide input, and 3) should be open-minded to changing their viewpoint based on the points and issues generated during the iterative process. Subjects can be nominated from well-known and respected individuals from the pool of experts identified who have a primary interest in the study topic (Clayton, 1997; Hsu & Sandford, 2007; Wilhelm, 2001). Panelists can also be chosen using the lead-user methodology where lead-users are the reformers, the creative thinkers, or for the purposes of this study: HP2 principals (Wilhelm, 2001).

Panelists should be motivated by the value they will get from the outcome of the process; a well-designed Delphi can be a motivating and rewarding experience for them (Turoff & Hiltz, 1996; Yousuf, 2007a). While anonymity reduces the biases common to face-to-face interactions, panelists should understand they are collaborating with a group of peers. Turoff and Hiltz (1996, p. 6) go as far as to have recommended "It is usual to inform the participants about who is actually involved in the group of Delphi respondents." Once identified, panelists are invited to participate in the study by telephone. Verbal consent is given by providing an email address. The researcher sends an email letter explaining the project along with an informed consent form for the potential panelist to fax back (Goodwin, 2002).

Number of Panel Members

Again, disagreement exists in the literature as to panel size and characteristics relevant to a Delphi application. While the common recommended panel size for a homogeneous group is 10 to 15 experts, different authors considered school principals a homogenous group within the education field (Hsu & Sandford, 2007; Skulmoski, Hartman, & Krahn, 2007; Wilhelm, 2001). Others considered principals a heterogeneous population of different social/professional stratifications who can interact on a panel of 5 to 10 experts while homogenous populations require 15 to 30 experts (Clayton, 1997). For a blended Delphi model considering the probable limited availability of principals practicing in identified HP2S, a population of 10 to 15 experts should provide convergence and consensus with diverse viewpoints while a focused group of 5 to 10 might provide a richer, deeper communication process. As I disaggregated the MAP data for testing year 2008 and compared that with two years of previous data, I realized the population of schools housing grades three through eight and meeting proficiency standards would be very small. After narrowing the population size down to the 20 highest performing, highest poverty schools, I contacted individual principals. Initially, 13 principals agreed to participate, but after the study was fully explained and more material was sent to the principals, three principals failed to respond to any more communication. When I sent out the Round One scenario, three more principals dropped out of the study. After consulting with my research supervisor who discussed the situation with the dissertation committee, I proceeded with analysis with a panel of six expert principals.

The Rounds of Questions

In 1968, Pfeiffer outlined the basic Delphi steps (Yousuf, 2007a):

1. First Round: first questionnaire to panel of experts requesting expert opinion or judgment, predictions, and/or recommended activities
2. Second Round: collective list of findings sent to panel to rate by criteria of importance;
3. Third Round: questionnaire with previous round results asking for re-rating or reasons for not coming to consensus.

Before Round One begins, panelists can be assigned or can choose pen names in order to maintain anonymity, while allowing responses and commentary to be attributed to individuals in order for other panelists and the researcher to follow their line of reasoning and discussion threads (Turoff & Hiltz, 1996). Panelists will have to dedicate large blocks of time to a Delphi with the literature recommending 45 days minimum from start to finish with at least 2 weeks for each round to be completed (Hsu & Sandford, 2007). After the last round is complete, the researcher should send a demographic survey to the panelists to obtain information on their academic experience, school characteristics, and experience in reforming HP2S (Franklin & Hart, 2007). If the concepts presented within the Delphi need further clarification, defining, or discussion, the researcher can distribute an advanced organizer with examples (Wilhelm, 2001). Within the literature, a debate existed on whether experts should rate their own confidence in their judgments, but Rowe and Wright (1999, p. 372) contended, "We …have no consistent evidence that initial confidence explains judgment change over Delphi rounds." Due to the systematic identification of expertise, I agreed that initial

confidence would not glean additional benefits. Obviously, the questions to be researched must be pertinent to the expertise of the panel (Rowe & Wright, 1999).

The study should be clearly understood by the expert panel before they begin. In Round One, the first section of the initial questionnaire contains the purpose and rationale of the Delphi being conducted. The second section contains directions for accessing the survey if necessary. The third section contains the directions for completing the survey. A cover letter can be used to welcome the panel to the study and explain general procedures. Round one typically begins with an open-ended questionnaire or a brainstorming session to generate a list of goals, concerns, or issues about a topic relevant to the experiences of the expert panel "so as to widely cast the research net" (Skulmoski, Hartman, & Krahn, 2007, p. 10). Starting with a structured first round would simplify the research process, but robs panelists of the opportunity to bring issues from their own interests and experience to the forefront (Rowe & Wright, 1999; Wilhelm, 2001). The questions are developed by the researcher, and in the case of graduate research with the help of a supervisor, based on the researcher's own experience in the field of education. A review of the literature helps identify theoretical gaps in the research area. Examining HP2S through a lens of complexity is a blend of the application and theory relevant to public education leadership. The research should be designed to move from the macro to the micro perspective using a mixed methodology of quantitative and qualitative processes. As discussed prior, the research sample consists of experts who meet several predetermined requirements. At the end of the round, responses are collapsed into categories for use in round two if agreed upon by the researcher and the reviewing committee (Clayton, 1997; Franklin & Hart, 2007; Hsu & Sandford, 2007; Skulmoski,

Hartman, & Krahn, 2007; Yousuf, 2007a). The first round focuses the inquiry while engaging the panelists with the issues. The first round should identify points, counterpoints, connections, and relationships in data (Wilhelm, 2001). Franklin and Hart (2007, p. 243) believed, "The most challenging component in the process was analyzing the qualitative comments to glean key issues for new statements on the second and third questionnaire."

In Round Two, the researcher develops a questionnaire based on the emergent categories highlighted in the first round in order to begin to gain opinion and convergence or divergence on the points made by the expert panel. Statements longer than 20 to 25 words in the questionnaire can weaken results. The researcher's review committee can ensure the resulting questionnaire is not too big. Experts receive the statements and rate their importance on a four or five point Likert scale depending on whether the researcher wants to allow experts the option of neutrality on issues. The survey is sent out with the first section containing directions to complete the survey. The second section contains the set of opinions with each statement followed by the Likert scale that has been clearly explained in the directions. Section three can allow for commentary on items in section two. Response time allowed should be no more than five days to avoid excessive attrition. The researcher then analyzes responses using descriptive statistics. A liberal criterion for consensus will help eliminate researcher bias (Clayton, 1997; Goodwin, 2002; Hsu & Sandford, 2007; Skulmoski, Hartman, & Krahn, 2007; Wilhelm, 2001; Yousuf, 2007a).

In Round Three, the levels of consensus or divergence are synthesized into a third questionnaire and issued to the panel for re-rating or re-evaluation of the results.

"Reevaluation is based upon the views of the underlying evidence and the assessment of its relevance to each position taken" (Wilhelm, 2001, p. 20). If panelists remain outside consensus in light of the group response, then they should provide justification or reasoning for doing so. The researcher can include extreme positions from the previous round in order to gain additional insight on those issues. The primary difference from round two is the inclusion of the group response with each panelist's vote indicated next to the Likert scale so further convergence toward consensus can be achieved (Clayton, 1997; Hsu & Sandford, 2007; Skulmoski, Hartman, & Krahn, 2007; Wilhelm, 2001; Yousuf, 2007a).

While a fourth round is optional and was not necessary in this study, Round Four can be used if sufficient consensus has not been reached by the end of round three. Minority opinions are highlighted along with the final list of consensus items and a final opportunity for panelists to re-rate and provide reasoning if they do not come to consensus (Clayton, 1997; Hsu & Sandford, 2007; Yousuf, 2007a).

Throughout the process, the researcher is communicating with the panelists for clarification via email and telephone to keep panelists engaged. Following round one, "the subsequent iterations give the respondents an opportunity to reevaluate their original answers in the light of the comprehensive feedback from the whole group. In-depth conversation is, however, a big challenge in any form of communication" (Wilhelm, 2001, p. 18). The e-Delphi process can include a virtual space for a professional forum to be established that would allow this in-depth conversation to emerge from the questionnaires and iterations.

Consensus Determination

An unpublished dissertation exploring complexity science and educational leadership by Goodwin (2002, p. 101) used a typical process for data analysis where "Round one of the Delphi was analyzed using an emergent category analysis to establish the declarative statements presented in the later rounds. Subsequent rounds were analyzed using measure of central tendency to determine consensus and level of confidence". The majority of Delphis use measures of central tendency (mean, median, and mode) and the level of dispersion (standard deviation and inter-quartile range) (Hsu & Sandford, 2007). Wilhelm (2001, p. 20) explained, "Descriptive statistics usually involving measurements of central tendency offer the most elegant and parsimonious means of depicting the group's consensus on items." Wilhelm further explained consensus as a predetermined median response range with the degree of consensus measured by the spread of the interquartile range. Results of + or – 1 standard deviation from the mean are considered outliers and call for justification. Wat-Aksorn (1999) found that interquartile range was not useful in a small, focused panel of experts and abandoned analysis when it began to cause confusion with the panelists. Hsu and Sandford (2007) considered consensus achieved if 80% of the votes fall within two categories on a 7 point scale or 70% rate 3 or 4 on a 4 point Likert scale with a median score of 3.25 or higher. Strong value statements in the Likert scale such as "Very Important" and "Critically Important" can help panelists rate their own opinions more clearly facilitating the convergence of consensus (Wilhelm, 2001). The Likert scale can be explained to panelists as their expert confidence of an issue's significance such as (1) Critically Important—75-99% confidence of being important; (2) Important—50-74% confidence of being important; (3) Unimportant—25-

49% confidence of being important; (4) Highly Unimportant—0-24% confidence of being important. The respondents then have the opportunity to comment and clarify on these value statements and add to the discussion in the virtual space surrounding these issues (Goodwin, 2002).

The Delphi should be checked for validity at various phases. The first validation measure was to have the doctoral committee review and approve the format and directions of the Delphi. Second, the Delphi can be pretested with a small group of practicing educational leaders. Third, after each round, the researcher's conclusions could have been validated, but were not, by an expert group of doctoral level researchers who are or have been practicing principals. Finally, the panelists themselves served as a member check when the researcher sent out the comments from the previous round embedded in the questions of the following round in order to identify key issues that were missed or misrepresented (Franklin & Hart, 2007; Goodwin, 2002).

Skulmoski and colleagues (2007, p. 2) explained, "The process stops when the research question is answered: for example, when consensus is reached, theoretical saturation is achieved, or when sufficient information has been exchanged." At this point, the participants have worked hard and deserve feedback. The researcher summarizes the goals, processes, and results for the panelists (Wilhelm, 2001).

One of the purposes of Delphi is to move panelists toward consensus. Delphi allows judgment to change throughout the rounds, or emerge, and the research should also look at why judgment changed in panelists (Rowe & Wright, 1999). While movement toward consensus relies on descriptive statistics, analysis is largely qualitative, subjective, and relies on "knowledge, experiences, and perceptions of the

researchers…There certainly exists the potential for researcher bias" (Franklin & Hart, 2007, p. 243). "A Delphi coordinator should have no vested interest in the outcome and should be in a facilitation role" (Turoff & Hiltz, 1996, p. 6); pure objectivity sounds like a lofty goal, but if uncovering best practice or key issues for further theoretical exploration are primary outcomes a researcher hopes to accomplish, the direction of emergence and consensus should not affect the personal interests of the researcher. Researchers can use a journal to capture their "decision trail of all key theoretical, methodological and analytical decisions made in the research from beginning to end…to substantiate trustworthiness of the research" (Skulmoski, Hartman, & Krahn, 2007, p. 11).

Procedures in This Study

Due to the iterative and emergent nature of Delphi research, the Delphi method offered an appropriate approach to exploring the leadership styles of HP2 school principals through a lens of complexity. The Delphi allowed for emergent themes on real-world, real-time issues more current than the most recent literature dealing with issues of complexity and education. The blended Delphi method conducted in a virtual space allowed for ease and efficiency of research application, participation by a panel of practicing experts, and aggregation and analysis of both qualitative and quantitative data.

Creating a forum or community of practicing HP2 school principals to converse about the amalgam of effort in reforming their HP schools into HP2S allowed the interaction of dynamic components within Missouri school environments to be more richly explored. The interplay of individual, culture, and environment in HP2S made Delphi a particularly well-suited methodology for this study (De Laat & Lally, 2003).

The Delphi method allowed HP2 school principals to bring their reservoir of knowledge, perspective, learning, and activity from the tacit to the explicit level through consensus-seeking communication so that I could analyze their responses and begin to formulate a cognitive framework for emergent leadership that may help inform the reform efforts of other Missouri principals who work in high-poverty, low-performing schools.

Overview

The panel of experts who participated in this study consisted of HP2 principals in Missouri as identified by school performance on the Missouri Assessment Program (MAP) annual state assessment. This lead-user selection process included the requirement that nominees must work or have worked in a high poverty Missouri school with high performance and may have been recognized for excellence through state or national awards. The researcher attempted to identify a panel representative of diverse Missouri student populations including rural, urban, and suburban demographics spread across a broad geographical representation within the state.

Using MAP "Index" points, a state scoring system that uses a weighted scale giving more points for student responses scored as "Proficient" and "Advanced" over "Progressing" and "Basic", all individual school attendance centers (i.e. sites or buildings) in the state were sorted from high to low based on 2007-2008 results. The top 10% of schools did not yield a large enough sample of high poverty schools, so the sample was expanded to 20% resulting in 40 schools with over 50% of students receiving free and reduced lunch assistance.

Districts with less than five students accountable in a grade level were eliminated before sorting began. Two districts from non-traditional public schools classified by the state as "special school districts" were eliminated. Five more districts were eliminated because their principals had served for one year or less.

The buildings selected were based first on building MAP index average and then on the number of grades within the building that appeared in the top 20% of MAP for 2008. Other accolades were considered including Gold Star School status, state Distinction in Performance awards, and how many times the building had placed grade levels in the Top Ten categories each of the state testing years of 2007, 2006, and 2005. The next consideration was the level of students receiving free and reduced lunch (FRL). Of these schools, 11 schools resided in counties with more than a 24% incidence rate of children living in poverty. Building count was used to classify buildings as "Very Small" < 500 students, "Small" < 2000 students, "Medium" < 5000 students, "Large" <20,000 students, "Urban">20,000 students, and "Metro" was used to classify metropolitan areas of Kansas City or St. Louis. A balance of school size was selected with six very small schools, five small schools, three medium schools, four large schools, one urban school, and one metro school. The final sample included three very small schools, one small school, one medium school, and one urban school.

I also looked for a diverse selection of beginning to veteran principals with anywhere from two years of experience in the building up to thirty years. Finally, using the state's Regional Professional Development Center's geographical areas, I selected a range of schools from across the state with all nine areas having at least one school represented and one area having five. When a district had more than one school make the

list, I picked the school that increased the diversity of the overall final group in the areas analyzed.

Each of the twenty final nominees was contacted by email. A letter (Appendix B) was attached to the email indicating they had been selected due to making significant contributions in an HP2 school and therefore were considered experts in the principalship. Included in the letter was a summary of the proposed research study. I followed up the email with a phone call to each selected individual reemphasizing the importance of the study and the value of the data they will receive in return at the conclusion of the study. After reading about the purpose of the study and the commitment of time required, nominees were instructed to complete and return the demographic request and permission to use direct quotes from their responses via email as proof of their consent to participate.

Of the twenty individuals contacted, 13 nominees returned the consent form, 4 nominees were left messages and did not respond, 2 nominees verbally agreed and did not return the consent form, and 1 nominee declined to participate. When the first open-ended questionnaire was delivered via email to the participants, three participants dropped out of the study and three simply did not return results to the researcher. When the second round survey was compiled and sent to the panelists, one more participant simply quit responding to the researcher. The resulting pool of six expert panelists still fell within the acceptable guidelines of a heterogeneous pool of experts (Clayton, 1997).

Round One of the e-Delphi consisted of an open-ended scenario based on the research questions and review of literature on complexity science and HP2S to stimulate panelists to reflect and brainstorm. Responses from the open-ended questions were

collapsed into issue statements for the Round Two Questionnaire. For Round Two, panelists were given a 4-point rating scale of importance along with a space for commentary. Ratings, aggregate descriptive statistics using measures of central tendency, and strong or particularly salient commentary were iterated to panelists for re-rating in Round Three. Convergence toward consensus was strong within the Round Two response and consensus had occurred by the end of Round Three. A fourth round was not necessary.

The specific questionnaire, data collection, and data analysis are discussed for each round.

Questionnaire Validation

Exploration of various preexisting e-Delphi options pilot tested on my advisor and several peers revealed a lack of flexibility in gearing the Delphi toward a blended, qualitative method. Instead, the questionnaires were disseminated via email and a secure Blackboard site was set up for professional communication occurring between rounds. The initial questionnaire consisted of an open-ended scenario set within a fictional, high-poverty Missouri school and was validated by my advisor and several peer educational leaders. Several minor changes were made to the scenario, and it was disseminated. Despite step-by-step directions for the Blackboard site, no panelists took the time to login for further discussion beyond that afforded in the rounds of the survey.

Consensus Determination

Using a predetermined, clearly described, defined, and justified methodology increases the credibility of results presented by the researcher. Descriptive statistics and measures of central tendency including mean, median, mode, and interquartile range are

the most commonly used statistical aggregates within Delphi (Goodwin, 2002; Hsu & Sandford, 2007; Wilhelm, 2001). A Delphi can clearly define consensus and avoid researcher bias by predefining the levels of consensus that will be sought during the iterative rounds (Wat-Aksorn, 1999; Wilhelm, 2001).

A simple Delphi study conducted by Wat-Aksorn (1999) based on 1974 work by Rasp employed an effective, but uncomplicated method of analyzing the qualitative responses iterated within each round. Consensus in this study will be determined by calculating the percentage of panelists selecting an item on the rating scale provided for each item beginning in Round Two through the final round with the highest percentage of respondents in agreement (HPRA) serving as the measure for reaching consensus. The study will conclude when at least 75% of the Delphi items reach critical to high consensus. Besides HPRA, central tendency of mean and median will be used to analyze convergence of agreement and the perceived level of importance of individual items on the emergent questionnaires.

Three categories of consensus will be used (Wat-Aksorn, 1999):

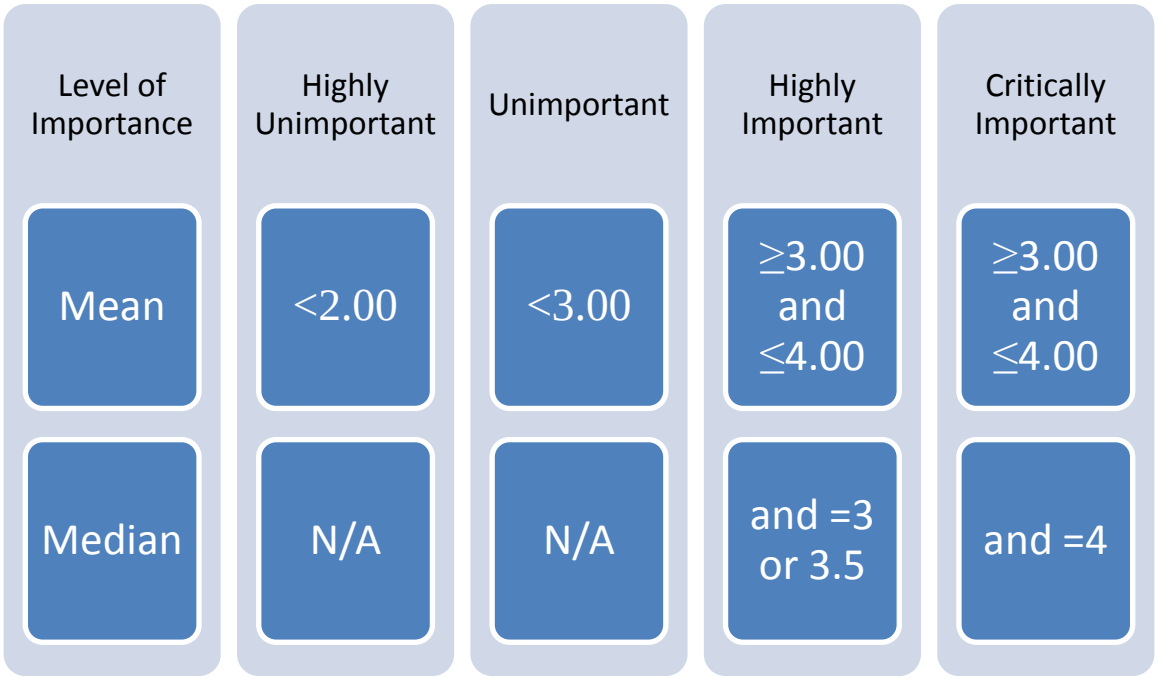
- HPRA≥.75=critical consensus of at least 75%
- .60≤HPRA<.75=high consensus of at least 60% but less than 75%
- HPRA<.60=no consensus of less than 60%

The average level of importance, based on a 4 point Likert scale, was calculated using the mean response of the panelists. The median response was used to indicate majority opinion. Four categories of importance were rated (Figure 7):

- 3.00≤Mean≤4.00 and Median=4 indicated as “Critically Important”
- 3.00≤Mean≤4.00 and Median=3 indicated as “Highly Important”

- 2.00≤Mean<3.00 indicated as "Unimportant"
- Mean≤2.00 indicated as "Highly Unimportant"

Figure 7: Levels of Importance for Delphi Items (adapted from Wat-Aksorn 1999)



Data Analysis

Round One

Round One consisted of a Word Document sent with an open-ended scenario and guiding questions (Appendix E). Participants were assigned participant numbers based on which order they turned in their consent forms in lieu of a pen-name to identify their responses during the iterative feedback of the study. This round also allowed for trouble-shooting of the communication process to occur without affecting the results of the study.

After Round One responses were returned via email attachment, I posted relevant excerpts of interest and particularly salient or passionate comments to a secure Blackboard site to allow anonymous conversation and reflection to occur between panelists. No participants logged in to this secure website to further develop commentary.

To member check for clarity and validity, I emailed panelists for any necessary information and fielded email questions from them regarding the survey and Blackboard discussion.

Reading through each response, I used Microsoft Word to tag each statement, sentence, or concept with a descriptive word or phrase. Once I had tagged every response, I used Microsoft Excel to begin arranging concepts into groups of "key words" from their responses. Then, these groups were collapsed into broad categories and re-grouped into similar responses. Within each of these similar statements, I developed a generic statement to represent the group. Finally, I compiled the questions, synthesized similar statements and removed redundant statements to narrow down a final list. The open-ended scenario resulted in a total of 82 statements synthesized from participant responses to how they would proceed in helping such a high poverty school reach high performance (Appendix F).

Round Two

Round Two consisted of an initial questionnaire in Word format formulated from a qualitative analysis of the open-ended questions in Round One and email correspondence with panelists (Appendix G). The Round Two questionnaire was initiated via email and consisted of emergent themes from Round One and the panelists' rating of the themes on a Likert scale as "Critically Important", "Highly Important", "Unimportant", and "Highly Unimportant". Each statement derived from the open-ended questions contained the member comments that generated the statement from the previous round. Respondents were asked to rate the statement in light of the group response and dialogue. Once all questionnaires were returned, individual items and the

commentary associated with them were posted to Blackboard for further discussion by the panelists while I conducted statistical analysis using Microsoft EXCEL and qualitative analysis on comments using Microsoft WORD.

Round Three

Round Three consisted of a questionnaire in WORD format with three distinct areas based on statistical analysis of responses from Round Two (Appendix H). The first section sought exploration of non-consensus items as presented by statistics including each individual panelist's response; the group aggregates using mean, median, and HPRA; a re-rating of the item in light of the group response; and a commentary on their response especially if it remained outside of the limits of the group response. The second section sought exploration of the non-consensus items and high-consensus items. These items were re-rated in light of the group response with the chance for commentary on why a panelist's response did or did not change. The third section presented the statistics from items that were found to have critical consensus, and a chance at clarification and commentary was provided. Once all Round Three questionnaires were returned, the threshold for consensus was found to have been met and the study ended.

Conclusion

The study concluded after Round Three because consensus had surpassed the threshold set for the study. Once consensus had been established, I sent an email to the panel letting them know consensus had been reached. I also asked panelists to answer some demographic questions that would help determine the diversity and generalizability of the study (Appendix J).

Summary

The Delphi method was used to explore the cognitive framework for a new metaparadigm of emergent leadership as suggested by the literature and analyzed through the perspective of acting principals in Missouri HP2S. Six panelists were convened as expert principals practicing in Missouri's high poverty, high performing schools. A Round One open-ended questionnaire gave principals a chance to brainstorm and reflect to generate qualitative data that were collapsed into emergent themes. These emergent themes were written as statements informed by the growing literature on complexity science and HP2S in the field of educational leadership. Panelists were asked in subsequent rounds to rate and rerate these statements in order to converge upon a consensus of the importance of the statements using mean and median as descriptive statistics for analysis. Information generated through a consensus of recognized expert principals could inform further research and better practice among all Missouri principals, particularly the panelists themselves and other principals struggling in HP2S.

CHAPTER FOUR

Findings

Introduction

The purpose of this study was to explore the cognitive framework for a new metaparadigm of emergent leadership as suggested by the literature and analyzed through the perspective of acting principals in HP2S. The Delphi method was used to explore the perspective of acting principals in Missouri HP2S and gather data for the study. This chapter describes the results of the study.

The Delphi Process

The mixed Delphi process used in this study consisted of three rounds. Round One was an open-ended scenario with guiding questions to which the panelists responded. Rounds Two and Three consisted of questionnaires created by the researcher using the panelists' responses from the open-ended scenario. The panel members rated the statements in the questionnaires and returned them to the researcher for analysis. The first step in the Delphi process was the identification of candidates for the expert panel.

Identification of Delphi Panel Members

The search for potential Delphi panel members began with a download of building-level MAP data and the process described in Chapter Three resulting in the identification and agreement to participate of seven panel members. During the iterative rounds, one panel member quit responding to researcher requests leaving six panel members to conclude the study. Based on the demographic data collected, the characteristics of the Delphi panel members are presented in the following sections.

Characteristics of Delphi Panel Members

The Delphi panel consisted of six Missouri principals, each with at least 14 years of experience in public elementary and secondary education, who consented to serve on the Delphi panel and returned all three rounds of the questionnaires. Each of the six principals returned the demographic form. The following descriptions of the Delphi panelists come from the demographic form.

Gender.

The Delphi panel consisted of four (66.7%) males and two (33.3%) females. The workforce of total educators as reported by DESE (2008) is 78.8% female and 21.2% male. The gender breakdown of the principalship is 50% male and 50% female in Missouri (Missouri State Board of Education, 2006). The representation on the panel is biased in favor of males.

Race/ethnicity.

The ethnicity of the educator workforce as reported by DESE (2008) was 92.9% white, 6.1% black, and 1.0% other. The ethnicity of the Delphi panel was 100% white giving the panel no racial diversity although the workforce of Missouri does not have a racially diverse population.

Age.

The age of the panel in comparison to the educator workforce in 2008 as reported by DESE (2008) is broken down as follows:

Table 4: Age of panel and state workforce

Age Group	Delphi Panel	2008
20-29	0	26.3%
30-39	2	25.8%
40-49	2	24.2%
50-59	1	20.9%
60+	1	2.9%

While the age of the workforce was evenly distributed, all of the panel members were in their mid-thirties or older.

Professional experience.

The years of experience of the panel in comparison to the educator workforce as reported by DESE (2008) is broken down as follows:

Table 5: Years of experience of panel and state workforce

Years of Experience	Delphi Panel	2008
0-10	0	51%
11-20	2	27.7%
21-30	2	16.3%
31+	2	5.0%

While the distribution across the number of years of experience was evenly distributed, all of the panel members had at least at 14 years of experience in education.

Professional education.

Two of the panelists had the required Masters degree for the principalship. Four panel members went beyond the Masters degree to obtain a Specialist in Education degree. None of the Delphi panel members had completed a doctoral degree.

Representation.

All members of the Delphi panel are practicing public school principals employed in the state of Missouri. Interestingly, all of the panelists who agreed to participate fall into the southern half of the state. Table 6 shows the full representation of the panel.

Table 6: Panelist Demographics

Panelist	Gender	Race	Age	Years in Educatio	Years as Principal	Number of School	School Demographic	Geographic Area	Highest Degree Achieved
1	Male	White	48	28	15	3	Rural	Southcentral	Specialist
2	Female	White	54	33	8	1	Rural	Southeast	Masters
3	Male	White	61	39	21	3	Urban	Southwest	Specialist
5	Male	White	38	14	6	1	Rural	Southwest	Specialist
6	Male	White	45	23	13	1	Rural	Southeast	Masters
7	Female	White	37	16	6	1	Rural	Southwest	Specialist

In summary, the six Delphi panel members were public school principals in high-performing, high-poverty schools in Missouri. The principals had at least 14 years of experience in education with at least 6 years as a principal. None of the principals had served as principal in more than 3 schools while two-thirds of them had only served in their current role as principal. The age of the principals ranged from 37 to 61 years old. Four of the principals had a Specialist in Education while two principals had the minimum required Masters degree. All of the principals served in schools that performed in the top 20% of all schools in the state on the Missouri state assessment program, the

MAP test, in 2007-2008 and had a least 50% of their student population receiving free and reduced meal assistance. Three of the schools were located in counties that had more than 20% of the children in the county living in poverty. These schools had received accolades such as one being designated a Gold Star school, four were recognized for Distinction in Performance by the state during the year of the test, and four schools had individual grade levels place in the Top Ten across the state at least one year from 2005 to 2007. Due to the demographic nature of Missouri, the schools were predominately white with one school having more than 20% minority population. Two of the schools were elementary districts where the principal also served as superintendent of the school. One school was a kindergarten through sixth grade building. One school was a fifth/sixth grade building. Another school was a seventh and eighth grade building. And the final building was a sixth through twelfth grade building. These demographics suggest a well-rounded panel of expert principals. The statistical method used to filter out the nominees for the panel and the principals that finally agreed to participate was approved by my dissertation advisor as adequate to initiate the study. The following data present data from the Delphi rounds.

Presentation of Data

Round One

The Delphi panel members completed the Round One Questionnaire (Appendix E) by responding to an open-ended scenario. The scenario described a fictitious, medium sized, low-performing, high-poverty school in Missouri. The panelists were asked to consider some guiding questions and to brainstorm how they would approach moving this school from low-performing to high-performing. Panelists were to assume that there were

no unusual constraints on resources or extenuating circumstances that would limit leadership behavior. Responses were provided by all participants in narrative format ranging from a half a page single-spaced to two pages single spaced. Figure 8 presents six selected, unedited examples, one from each panelist, of the responses to the Round One Questionnaire. Panelist 4 quit responding to the researcher after returning Round One.

Figure 8: Selected Responses to Round One Questionnaire

Example from Panelist 1
Overall, this school needs to COMMUNICATE with everyone involved and the administrator must be the initiator of this communication. The communication must be specific and must have a community purpose and it must flow from all directions.
Example from Panelist 2
This school needs to set goals to improve with everyone sharing their ideas. Students will achieve more if they know that the school cares. The community will become proud of the school if the school will give to the community by being involved in projects. This will bring the diversity of the school together to promote a feeling of ownership and pride so that students will want to do better and their parents will want them to do better. The school should be a professional place where learning and caring are promoted by the entire staff.
Example from Panelist 3
It is vital that the principal reach out to the staff, students and community in building positive relationships. This is no small task, since you are challenging the status quo and providing a change in direction and purpose for Rocky Falls. I can not over emphasize the significance of building those positive relationships and developing trust as a precursor to meaningful positive change.
Example from Panelist 4
I would try to work collaboratively with the staff to set up goals. Before we did this I would want to do some training on what makes an effective school, thus, trying to get insignificant things like parking spots and lunch schedules off the agenda before we get to work.
Example from Panelist 5
The first action is to get parent, teacher, student, and board member representation on a team to develop a realistic mission and vision for the school. This committee may be the CSIP committee or a different group. The committee needs to be a diverse group and not just the small group of students and parents whom participate most of the time.
Example from Panelist 6
Get the staff Involved in development of the mission statement, vision, values, and goals of the district and the building. I believe that you need to not go in and make a bunch of

changes until you have had a chance to see how things work to get a better idea of what things need changed. Also it will give you a chance to see what staff members you can count on to help you in the change. Find out what staff members you need to work on to get them on board.
Example from Panelist 7
To facilitate change in a school that is struggling, it is no longer about the administrator as the boss, but the administrator as part of a team that collaborates to make sure all students are learning. I would not demand that teachers change-I would work with them to find the ways in order to improve student learning.

The responses to Round One were analyzed sentence by sentence and concept by concept and tagged with a short descriptor of that statement. The sentences were grouped by descriptor into 67 categories with 94 representative statements meant to capture the meaning of each group (Appendix L). These statements were reviewed by a committee of practicing educators including practicing central office administrators, my dissertation advisor, and two higher education educators at major Missouri universities who specialize in working with high poverty schools. The committee recommended cutting a few similar questions, but no major changes were made resulting in 82 final statements. These statements were built into a Microsoft Word document with directions for panelists to fill in form fields including rating each statement and writing any commentary to selected responses placed under each statement made by each panelist during the open-ended questionnaire.

Round Two

The Delphi panelists responded to the Round Two Questionnaire by rating each statement on a 4 point Likert scale of importance. Each panel member indicated how important they thought each statement was to principals serving in high poverty schools in Missouri that were trying to become high performing. The ratings were analyzed using Microsoft Excel. The mean and median was calculated for each statement on the

questionnaire. The percentage of respondents in agreement on each rating was calculated to find the highest percentage of respondents in agreement (HPRA). Other than the panel member who did not return this questionnaire, all panel members responded to all statements.

Using the assumptions for consensus determination described in Chapter Three, a summary of the Delphi's consensus after Round Two is presented in Table 7.

Table 7: Round Two Distribution of Critical, High, and No Consensus Items

Level of Consensus	Items	Total	Percentage
Complete Consensus	4, 54	2	2.4%
	These numbers also reported in Critical Consensus below		
Critical Consensus	1, 2, 4, 5, 15, 19, 29, 30, 34, 47, 49, 54, 65, 78, 81	15	18.3%
High Consensus	3, 6, 7, 11, 13, 16, 17, 21, 22, 24, 27, 28, 33, 35, 39, 41, 42, 43, 44, 45, 48, 50, 57, 59, 60, 62, 63, 68, 69, 70, 71, 73, 75, 77, 79, 82	36	43.9%
No Consensus	8, 9, 10, 12, 14, 18, 20, 23, 25, 26, 31, 32, 36, 37, 38, 40, 46, 51, 52, 53, 55, 56, 58, 61, 64, 66, 67, 72, 74, 76, 80	31	37.8%
Total	82	82	100%

Table 7 shows the Delphi items that reached critical, high, and no consensus for the 82 statements. The total number of items, as well as the percentage that fall into each category, is recorded with the totals equaling 100%. The percentage of items reaching critical and high consensus equals 62.2% which is very high given it is the first round of

rating statements, yet it does not meet the threshold of 75% HPRA described in Chapter Three. Interestingly, two items regarding data analysis and policies and procedures reached complete consensus in the first rating.

Round Two comments.

One panelist made 11 statement specific comments when rating statements in Round Two. The Blackboard site that was set up for panelists to follow up commentary in a cyber environment independent of the questionnaire did not have any panel members login at any point during the study. The 11 comments were reviewed and included under the statement for re-rating during Round Three.

Round Two additions.

No panel members suggested changes to the statements. Neither did any of the panel members ask for clarification or for any additional statements to be added. Since the panel did not reach consensus on 37.8% of the items, Round Three was compiled and begun.

Round Three

The Delphi panelists responded to Round Three in the same way they responded to Round Two. They checked the form box next to the level of importance for each of 80 statements that remained out of 82 in light of the group response and the comments made during Round Two. Two items were moved to the end of the survey for comment, but not for rerating because of 100% consensus during Round Two. The questionnaire was reorganized so that the first section of statements was the 31 items that did not reach consensus during Round Two. The second section was comprised of the 36 items that had reached high consensus, and panelists were encouraged to review the group response and

rerate the items. The third section was comprised of the 15 items that had reached critical, but not complete, consensus, and participants were allowed to rerate these items in light of the group response if they felt compelled to do so.

The ratings were analyzed using Microsoft Excel. The mean and median was calculated for each statement on the questionnaire. The percentage of respondents in agreement on each rating was calculated to find the highest percentage of respondents in agreement (HPRA). All panel members responded to all statements. Table 8 presents a summary of the consensus reached after Round Three.

Table 8: Round Three Distribution of Critical, High, and No Consensus Items

Level of Consensus	Items	Total	Percentage
Complete Consensus	4, 32, 46, 51, 53, 54, 73	7	8.5%
	These numbers also reported in Critical Consensus below		
Critical Consensus	1, 4, 5, 11, 15, 16, 19, 21, 22, 23, 29, 30, 31, 32, 34, 37, 38, 41, 46, 47, 49, 51, 53, 54, 57, 61, 64, 65, 66, 68, 73, 77, 78, 81, 82	35	42.7%
High Consensus	2, 3, 6, 7, 9, 10, 12, 13, 14, 17, 20, 24, 25, 26, 28, 35, 39, 40, 42, 43, 44, 45, 48, 50, 52, 56, 58, 59, 60, 62, 63, 67, 69, 70, 71, 74, 75, 76, 79, 80	40	48.8%
No Consensus	8, 18, 27, 33, 36, 55, 72	7	8.5%
Total	82	82	100%

Table 8 shows the Delphi items that reached critical, high, and no consensus for the 82 statements. The total number of items, as well as the percentage that fall into each

category, is recorded with the totals equaling 100%. The percentage of items reaching critical (42.7%) and high (48.8%) consensus equals 91.5% which well exceeds the threshold of 75% HPRA described in Chapter Three. Seven items reached complete consensus (100%) by the end of Round Three. Only seven items (8.5%) did not reach some level of consensus.

It is important to note that on items that did not reach consensus, three items were rated as either critically important or highly important by the entire panel with the vote split 50/50. Two no consensus items had 83% of the responses as critically or highly important. Two more no consensus items had 67% of the responses as critically or highly important. Only one no consensus item out of the 82 statements had panelists rate in all four categories of importance. That item was "The principal develops a vision for the direction of the building."

Table 9 presents the changes in critical, high, and no consensus percentages from Round Two to Round Three. In Round Two, 37.8% of the 82 statements had no consensus. During Round Three, the statements that had no consensus dropped to 8.5%. The number of high consensus statements increased slightly from 43.9% to 48.8%. The largest change came within the critical consensus category with 18.3% in Round Two to 42.7% in Round Three. Because the percentage of Delphi items reaching critical or high consensus reached 91.5%, much higher than the target of 75%, the Delphi phase of the study ended.

Round Three comments.

Two panelists made statement specific comments when rating statements in Round Three. One of these panelists made 22 comments while the other made 3

comments in this round. Another panelist indicated he had made comments and then lost the document when he had tried to save it so he did not go back and comment on the copy he emailed to me. One member stated that he did not wish to change any of his ratings in Round Three and he did not make any comments.

Table 9: Summary of Change in Consensus from Round Two to Round Three

Round	Complete Consensus	Critical Consensus	High Consensus	No Consensus
Two	2.4%	18.3%	43.9%	37.8%
Three	8.5%	42.7%	48.8%	8.5%

Analysis of Data

This section of the chapter presents an overview of the findings followed by a summary of the results for each of the categories. During the data collection phase, as is typical in qualitative studies, I continued to read and revise Chapter Two to reflect the most current literature in the area of complexity science in education, and refine my understanding of the results that were unfolding during the Delphi. The 82 statements were reorganized again at the conclusion of Round Three into two categories of analysis. The first category used to categorize each statement was the domains of emergence as identified by Wheatley and Kellner-Rogers (1996) and Fullan (2006): Identity, Information, and Relationships. The second category used to identify each statement was the stages of the lifecycle of emergence as identified by Wheatley and Frieze (2006a; 2007): Networking, Commitment to a Community of Practice, and Strengthen and Diversify Connections. I read each statement and identified whether it dealt with the

identity of the organization, information flows within the organization, or relationships between roles or people in the organization. Then, I reread each statement and identified whether the statement dealt with building or maintaining networks in the organization or across organizations, building commitment to the community of practice, or strengthening and diversifying connections between roles and/or people in the organization. For consistency, I repeated the process of placing each statement into the two categories and compared both of my lists. With three statements, I had chosen two different responses in the second category and I had to make a choice which category most closely fit the statement.

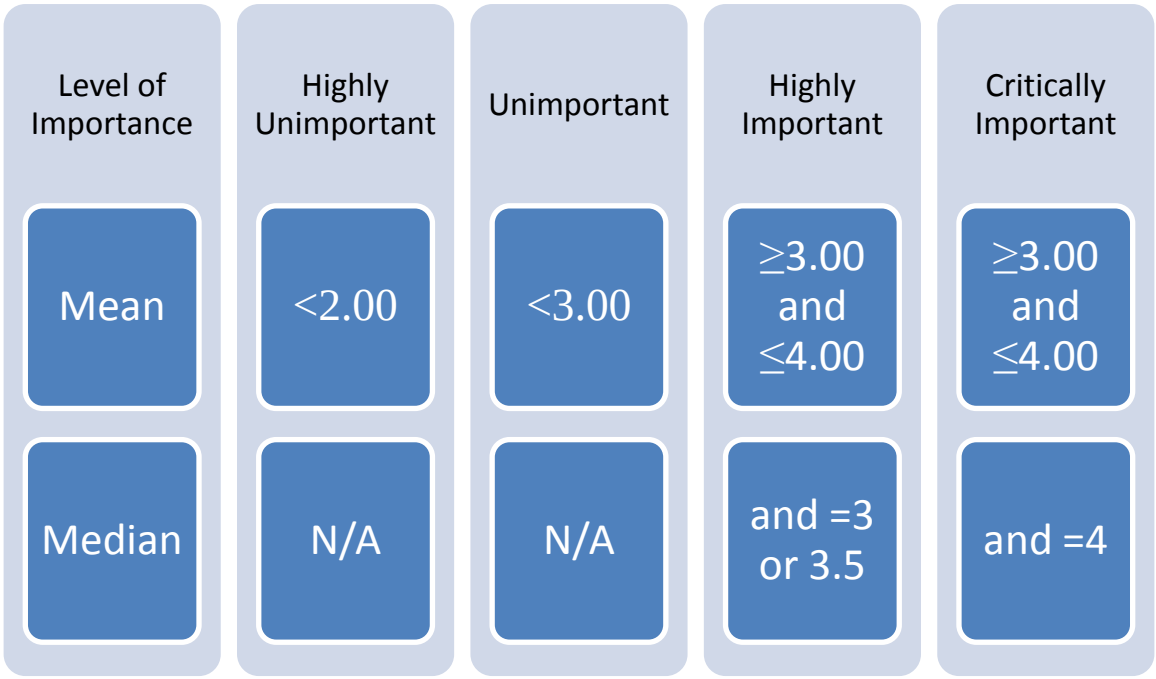
I then subdivided each category into critical consensus, high consensus, and no consensus. A separate table is presented for each section. Each table presents the items with their corresponding means, medians, and the HPRA arranged in descending order by mean. Along with a discussion of the data is a summary of the comments made by panel members. A list of all comments made by panel members is found in Appendix I.

Based on the four point Likert scale of importance rating of each item by the Delphi panel, the mean was calculated to indicate the average level of importance for each item. The median of Delphi items was used to indicate the majority opinion of the panelists. When Panelist Four dropped out, the median became split on a few items between three and four due to an even number of respondents. A median of 3.5 was rounded down to 3. Figure 7, first presented in Chapter Three, is shown again to explain the four levels of importance:

- $3.00 \leq \text{Mean} \leq 4.00$ and Median=4 indicated as “Critically Important”
- $3.00 \leq \text{Mean} \leq 4.00$ and Median=3 indicated as “Highly Important”

- 2.00≤Mean<3.00 indicated as “Unimportant”
- Mean≤2.00 indicated as “Highly Unimportant”

Figure 9: Levels of Importance for Delphi Items (adapted from Wat-Aksorn 1999)



Overview of Findings

For the purpose of presentation, an overview of findings is summarized by category and consensus. The level of importance of each item, as identified by the Delphi panel will also be presented (see Appendix K for Table 21: Overview of Findings).

Domain One: Identity

This section presents the Delphi items dealing with importance factors related to the principal’s role in the first domain of emergence in high poverty schools: Identity. The Delphi panel reached three levels of consensus, Critical/High/No Consensus, on items relating to Identity so three tables presenting these levels will be discussed.

The first category of consensus for Identity, Critical Consensus, is presented in Table 10. Each item is presented with the original question number, the domain and stage

it was classified into, the mean, median, and HPRA. The level of consensus and the level of importance each item received are also listed in the table. Items are listed in descending order based on the mean scores.

Table 10: Domain One: Identity Critical Consensus Items (HPRA ≥ .75)

Item	Delphi Statement	Domain	Stage	Mean	Median	HPRA	Consensus	Importance
46	The principal emphasizes the importance of effectively developing and implementing the curriculum.	1	2	4.00	4	1.00	Critical Consensus	Critically Important
23	The principal improves morale by celebrating success.	1	2	3.83	4	0.83	Critical Consensus	Critically Important
34	The principal keeps the school and community focused on improving student performance.	1	2	3.83	4	0.83	Critical Consensus	Critically Important
37	The principal includes everyone in developing a vision for the building.	1	3	3.83	4	0.83	Critical Consensus	Critically Important
38	The principal helps staff reflect on the values under which the building is and should be operating.	1	2	3.83	4	0.83	Critical Consensus	Critically Important
81	The principal serves as a catalyst for initiating and sustaining improvement in student performance.	1	2	3.83	4	0.83	Critical Consensus	Critically Important
19	The principal seeks ways to instill school pride in the school and community.	1	2	3.67	4	0.83	Critical Consensus	Critically Important
41	The principal eliminates distractions and obstacles when and wherever possible.	1	2	3.67	4	0.83	Critical Consensus	Critically Important
29	The principal allows change to emerge over time from the particular context and needs of the school.	1	2	3.17	3	0.83	Critical Consensus	Highly Important
47	The principal manages the physical environment/building.	1	2	3.17	3	0.83	Critical Consensus	Highly Important
49	The principal monitors teacher duties and responsibilities.	1	2	3.17	3	0.83	Critical Consensus	Highly Important
54	The principal enforces the policies and procedures of the building and district.	1	2	3.00	3	1.00	Critical Consensus	Highly Important

The panelists rated eight of the Domain One (D1) critical consensus items in this group "Critically Important" and four items "Highly Important." Of the critical items that highlight the principal's role in Domain One/Stage Two (D1/S2) describing the commitment to the identity of the organization, the highest rated item *emphasizes the importance of effectively developing and implementing the curriculum*. Two more items

deal directly with commitment to *improving student performance*. One response from Panelist 3 was, "You can't be afraid of change but embrace change if data and research tells you it will benefit students. The principal does not have a monopoly on ideas for change. You must empower your staff to be risk takers and if they have ideas that have merit then don't stand in the way." Two items deal with how people feel about the building with the principal *improving morale by celebrating success and seeking ways of instilling pride in the school community*. Panelist 3 remarked, "In high poverty schools, success does not always come easily. But when you celebrate, it becomes a rallying point of pride and success." One item supports the principal's role in the *values, or culture, of the building*. Four items highlight the role of the principal in *managing the daily operations, policies, and procedures of the school*. One item in particular directly deals with emergence in a high poverty school: *The principal allows change to emerge over time from the particular context and needs of the school*. Panelist 3 again commented, "The principal must be a change agent and open to ideas that are good for students." The final item is the only D1 item with critical consensus that is not a S2 item. Domain One/Stage Three (D1/S3) strengthening the identity of the organization is represented with: *The principal includes everyone in developing a vision for the building*.

The D1 items that reached High Consensus are represented in Table 11. Each item is presented with the original question number, the domain and stage it was classified into, the mean, median, and HPRA. The level of consensus and the level of importance each item received are also listed in the table. Items are listed in descending order based on the mean scores.

Table 11: Domain One: Identity High Consensus Items (.60 ≤ HPRA < .75)

Item	Delphi Statement	Domain	Stage	Mean	Median	HPRA	Consensus	Importance
6	The principal requires ongoing assessment of student progress toward the goal of proficiency on the MAP test.	1	2	3.67	4	0.67	High Consensus	Critically Important
7	The principal aligns building policy, procedure, and practice with the purpose of increasing student performance to achieve proficiency on the MAP test.	1	2	3.67	4	0.67	High Consensus	Critically Important
42	The principal deals with resistance effectively.	1	2	3.67	4	0.67	High Consensus	Critically Important
62	The principal seeks buy-in to the direction of the building from all participants.	1	2	3.67	4	0.67	High Consensus	Critically Important
71	The principal shows resolve in his or her efforts to affect student performance.	1	2	3.67	4	0.67	High Consensus	Critically Important
80	The principal conveys a sense of urgency in improving student performance.	1	2	3.67	4	0.67	High Consensus	Critically Important
56	The principal manages the structure of the staff in the building.	1	2	3.50	4	0.67	High Consensus	Critically Important
35	The principal continually reinforces the mission of the school.	1	2	3.33	3	0.67	High Consensus	Highly Important
39	The principal helps establish building and personal goals for improving student performance.	1	2	3.33	3	0.67	High Consensus	Highly Important
59	The principal has a sense of awareness of the boundaries that exist between groups within the school community.	1	3	3.00	3	0.67	High Consensus	Highly Important
60	The principal facilitates conversations across boundaries within the school community.	1	1	3.00	3	0.67	High Consensus	Highly Important

The panelists rated seven of the D1 high consensus items in this group "Critically Important" and four items "Highly Important." Five of the D1/S2 items deal directly with the principal's role *in student performance including assessment, managerial duties, personal resolve, sense of urgency, and goal setting*. Panelist 3 emphasizes, "If the principal does not exhibit a true concern that things must improve, then no one is going to." Two more D1/S2 items deal with *managerial processes including dealing with resistance and managing staff*. Panelist 3 said, "Look at your leader teachers for assistance in bringing needed change to your school." One D1/S2 item rates the

importance of the principal *reinforcing the mission of the school* and Panelist 3 emphasizes, "You have to keep that in front of them all the time." Another D1/S2 item highlights the need for the principal *to seek buy-in from all stakeholders*. Panelist 3 felt, "The principal must continually check their attitude and receptivity to all groups, so as to not isolate but listen even when they do not agree." The two items not within S2 are concerned with boundary awareness. The D1/S3 item conveys that the principal should have *an awareness of boundaries that exist between and within the school and community.* The D1/S1 item deals with networking using the identity of the organization to strengthen and diversify connections and commitment in a community of practice: *The principal facilitates conversations across boundaries within the school community*.

The D1 items that reached No Consensus are represented in Table 12. Each item is presented with the original question number, the domain and stage it was classified into, the mean, median, and HPRA. The level of consensus and the level of importance each item received are also listed in the table. Items are listed in descending order based on the mean scores.

Table 12: Domain One: Identity No Consensus Items (HPRA < .60)

Item	Delphi Statement	Domain	Stage	Mean	Median	HPRA	Consensus	Importance
8	The principal focuses on the performance of all subgroups included in the school population.	1	2	3.50	3.5	0.50	No Consensus	Critically Important
27	The principal recruits everyone's participation in the continual increase in student learning and performance.	1	1	3.50	3.5	0.50	No Consensus	Critically Important
72	The principal presents certain non-negotiable expectations to staff.	1	0	3.17	3.5	0.50	No Consensus	Highly Important
55	The principal makes decisions that move the school in his or her desired direction.	1	0	3.17	3	0.50	No Consensus	Highly Important
36	The principal develops a vision for the direction of the building.	1	0	3.00	3.5	0.50	No Consensus	Highly Important

The panelists rated two of the D1 no consensus items in this group "Critically Important" and three items "Highly Important." It is important to note that the D1/S2 item, while it did not reach consensus, had all six panelists rate it as highly or critically important making *the performance of all subgroups critically important*. Panelist 3 whose school had the highest percentage of minority students said,

> It is hard to argue with facts. We held meetings with our African American parents and students. We explained the whole process and asked for suggestions and support from them. We initiated some of their suggestions and merged with our own to come up with a plan that brought some success…It is important to address the needs of all students. You should especially focus on the minority groups within your school.

The D1/S1 item likewise had all six panelists rate it as highly or critically important making *the inclusion of everyone in increasing student learning and performance critically important*. Two-thirds of the panel felt that the principal should present non-negotiables to the staff while a third felt this was unimportant. Five of six panelists felt that it was highly or critically important that *the principal would make decisions to move the building in a direction the principal desired;* but as Panelist 7 indicated, "The principal facilitates the decision making process" which falls a little closer to the overall responses of the panel that they use team decision making rather than authoritative. Panelist 3 even apologizes during Round 3 and changes his response, "I felt I was being a little over the top and a '3' is better to allow open input." The item that states the principal would develop the vision of the school is the 1 item out of 82 items that received a critically unimportant vote from a panel member. Panelist 3 thought that having vision and direction was a part of the principal's job while Panelist 7 said, "The principal does not develop the vision—the staff as a team creates the vision for student success."

In closing the discussion of results for D1: Identity, I find it interesting that of the 28 statements, 21 of them are S2: Commitment to a Community of Practice Items. Of the other seven items, two are S3: Strengthen and Diversify Connections items, two are S1: Networking items, and three that had no consensus were stage-less D1 items that represented the principal acting in an authoritative manner.

Domain Two: Information

This section presents the Delphi items dealing with importance factors related to the principal's role in the second domain of emergence in high poverty schools: Information. The Delphi panel reached three levels of consensus, Critical/High/No Consensus, on items relating to Information so three tables presenting these levels will be discussed.

Table 13: Domain Two: Information Critical Consensus Items (HPRA ≥ .75)

Item	Delphi Statement	Domain	Stage	Mean	Median	HPRA	Consensus	Importance
4	The principal considers data analysis a priority for improving student performance.	2	2	4.00	4	1.00	Critical Consensus	Critically Important
5	The principal actively guides staff in the analysis of data.	2	3	3.83	4	0.83	Critical Consensus	Critically Important
30	The principal uses current data to predict the necessary changes to improve student performance during the current year.	2	2	3.83	4	0.83	Critical Consensus	Critically Important
31	The principal uses current data and information to predict the necessary changes to improve student performance beyond the current year.	2	2	3.83	4	0.83	Critical Consensus	Critically Important
77	The principal provides classroom resources for staff.	2	2	3.83	4	0.83	Critical Consensus	Critically Important
82	The principal challenges the status quo within the school.	2	2	3.17	3	0.83	Critical Consensus	Highly Important

The first category of consensus for Information, Critical Consensus, is presented in Table 13. Each item is presented with the original question number, the domain and

stage it was classified into, the mean, median, and HPRA. The level of consensus and the level of importance each item received are also listed in the table. Items are listed in descending order based on the mean scores.

The panelists rated five of the Domain Two (D2) critical consensus items in this group "Critically Important" and one item "Highly Important." Of the critical items that highlight the principal's role in D2/S2, the continual evaluation of information within the diverse network of a community of practice has the highest rated item *emphasizing data analysis a priority for improving student performance.* Two other D2/S2 items also deal with *using data to predict changes necessary to improve current and future performance*. One D2/S2 item moves *beyond data to information being classroom resources provided by the principal to staff*. The lowest rated critical item which is considered highly important is a D2/S2 item where the principal is *responsible for challenging the status quo within the school*. Finally, the one D2/S3 item within the diversification of information shows *the relationship between the principal and staff in analyzing data*. Panelist 3 describes the process they used:

> This is something we did religiously with the entire staff. At first it was difficult for them to understand all the results. They worked together as a team with an interdisciplinary approach. Then each department would meet and come up with a book of activities that supported goal and process standards. We analyzed every sub-group and used a pull out system to focus on African American, Hispanic, etc.

The D2 items that reached High Consensus are represented in Table 14. Each item is presented with the original question number, the domain and stage it was classified into, the mean, median, and HPRA. The level of consensus and the level of importance each item received are also listed in the table. Items are listed in descending order based on the mean scores.

Table 14: Domain Two: Information High Consensus Items (.60 ≤ HPRA < .75)

Item	Delphi Statement	Domain	Stage	Mean	Median	HPRA	Consensus	Importance
43	The principal encourages and enables staff to continually reflect on current practices in light of available data.	2	2	3.67	4	0.67	High Consensus	Critically Important
44	The principal continually evaluates past and present performance of personnel with the purpose of increasing student performance.	2	2	3.67	4	0.67	High Consensus	Critically Important
45	The principal monitors change and continuously adjusts practice to improve student performance.	2	2	3.67	4	0.67	High Consensus	Critically Important
74	The principal provides professional development for staff.	2	2	3.67	4	0.67	High Consensus	Critically Important
10	The principal promotes dialogue vertically and horizontally across the school building.	2	1	3.50	4	0.67	High Consensus	Critically Important
25	The principal seeks to understand connections between low performance and marginalized populations.	2	2	3.50	4	0.67	High Consensus	Critically Important
14	The principal disseminates vital information in a transparent, proactive manner.	2	1	3.33	3	0.67	High Consensus	Highly Important
26	The principal works to break the cycle of poor student performance in marginalized (eg, poor/working class/poverty class) populations.	2	2	3.33	3	0.67	High Consensus	Highly Important
28	The principal evaluates the school from a holistic or "big picture" perspective.	2	2	3.33	3	0.67	High Consensus	Highly Important
52	The principal seeks more efficient procedures and processes within the building.	2	2	3.33	3	0.67	High Consensus	Highly Important
79	The principal provides support resources for students such as tutoring, transportation, equipment, and materials.	2	3	3.33	3	0.67	High Consensus	Highly Important
13	The principal identifies and promotes ways for the school to communicate effectively with diverse groups of parents.	2	1	3.00	3	0.67	High Consensus	Highly Important
75	The principal provides monetary incentives to staff.	2	0	2.33	2	0.67	High Consensus	Unimportant

The panelists rated six of the D2 high consensus items in this group "Critically Important," six items "Highly Important," and one item "Unimportant". Of high consensus items, five D2/S2 items deal with the principal *reflecting on practice such as seeking more efficient procedures and processes, evaluating personnel, and holistically*

evaluating the school; but Panelist 7 reminds us, "Some of these ideas need to come from the staff." One D2/S2 item deals with the principal's *providing PD for staff*. The one D2/S3 item rates the importance of *providing resources for students*. Three D2/S1 items look at information flow within networks including *dialogue, communication with parents, and providing vital information*. Panelist 3 says of vertical and horizontal dialogue, "This is very important for a principal. If it is not a top priority, then you're not as effective as you could be." Panelist 3 goes on about transparency, "I think this is one of those areas where leadership needs to take the lead. If it is not important to you it's not important to your staff or student achievement." Two D2/S2 items see the principal as *seeking to understand connections between low performance and marginalized populations and the principal's role in helping to break that cycle*. Panelist 3 said, "If you don't, then nothing changes and we accept mediocrity." The final D2 item does not have an associated stage and was found to be "Unimportant": *The principal provides monetary incentives for staff*.

The D2 items that reached No Consensus are represented in Table 15. Each item is presented with the original question number, the domain and stage it was classified into, the mean, median, and HPRA. The level of consensus and the level of importance each item received are also listed in the table. Items are listed in descending order based on the mean scores.

The panelists rated one of the D2 no consensus items in this group "Critically Important" and the other item "Highly Important." It is important to note that both are D2/S2 items, and while they did not reach consensus all six panelists rate them both as highly or critically important making *the evaluation of school culture in order to find*

areas in need of improvement and *making staff aware of research on effective schools* both at least highly important to a principal in a high poverty school.

Table 15: Domain Two: Information No Consensus Items (HPRA < .60)

Item	Delphi Statement	Domain	Stage	Mean	Median	HPRA	Consensus	Importance
18	The principal promotes the evaluation of the school culture in order to find areas in need of improvement.	2	2	3.50	3.5	0.50	No Consensus	Critically Important
33	The principal makes staff aware of research on effective schools.	2	2	3.17	3	0.50	No Consensus	Highly Important

In closing the discussion of results for D2: Information, I find it interesting that of the 21 statements, 15 of them are S2: Commitment to a Community of Practice Items. Of the other six items, two are S3: Strengthen and Diversify Connections items, three are S1: Networking items, and one that was the stage-less D2 item that was found to be unimportant: *The principal provides monetary incentives to staff*.

Domain Three: Relationships

This section presents the Delphi items dealing with importance factors related to the principal's role in the third domain of emergence in high poverty schools: Relationships. The Delphi panel reached two levels of consensus, Critical and High Consensus, on items relating to Relationships so two tables presenting these levels will be discussed.

The first category of consensus for Information, Critical Consensus, is presented in Table 16. Each item is presented with the original question number, the domain and stage it was classified into, the mean, median, and HPRA. The level of consensus and the level of importance each item received are also listed in the table. Items are listed in descending order based on the mean scores.

Table 16: Domain Three: Relationships Critical Consensus Items (HPRA ≥ .75)

Item	Delphi Statement	Domain	Stage	Mean	Median	HPRA	Consensus	Importance
32	The principal relies on the help and knowledge of experts to increase student performance.	3	1	4.00	4	1.00	Critical Consensus	Critically Important
51	The principal emphasizes classroom management and student engagement.	3	3	4.00	4	1.00	Critical Consensus	Critically Important
53	The principal maintains a positive environment involving all participants.	3	1	4.00	4	1.00	Critical Consensus	Critically Important
1	The principal holds all staff accountable for student performance on the MAP.	3	2	3.83	4	0.83	Critical Consensus	Critically Important
15	The principal works to help the staff believe they have the ability to improve student performance.	3	3	3.83	4	0.83	Critical Consensus	Critically Important
16	The principal focuses staff on that which can be improved (i.e. curriculum, instruction, assessment) as opposed to allowing blame for low performance to be placed on student issues and/or ability.	3	2	3.83	4	0.83	Critical Consensus	Critically Important
21	The principal promotes a culture of trust within the school.	3	2	3.83	4	0.83	Critical Consensus	Critically Important
22	The principal builds positive relationships with, and among, staff.	3	1	3.83	4	0.83	Critical Consensus	Critically Important
64	The principal fosters a sense of belonging to the school with participants.	3	3	3.83	4	0.83	Critical Consensus	Critically Important
65	The principal involves all stakeholders in the process of improving student performance.	3	1	3.67	4	0.83	Critical Consensus	Critically Important
11	The principal brings diverse community and building representatives together to collaborate on school issues.	3	3	3.17	3	0.83	Critical Consensus	Highly Important
61	The principal seeks to increase the number and strength of connections between groups within the network embedded in the school community.	3	3	3.17	3	0.83	Critical Consensus	Highly Important
66	The principal seeks innovative ways to involve parents with the school.	3	3	3.17	3	0.83	Critical Consensus	Highly Important
68	The principal promotes relationship building between staff and students.	3	3	3.17	3	0.83	Critical Consensus	Highly Important
78	The principal provides time for collaboration among staff.	3	3	3.17	3	0.83	Critical Consensus	Highly Important
73	The principal expects altruistic behavior from self and staff.	3	2	3.00	3	1.00	Critical Consensus	Highly Important
57	The principal overlaps duties of staff in the building to strengthen outcomes.	3	3	2.83	3	0.83	Critical Consensus	Highly Important

The panelists rated ten of the Domain Three (D3) critical consensus items in this group “Critically Important” and seven items “Highly Important.” Of the critical items

that highlight the principal's role in D3/S1, two of the complete consensus rated items *emphasizes networking both with experts and with all stakeholders.* The other complete consensus item is a D3/S3 item emphasizing *classroom management and student engagement.* The two other D3/S1 items of networking building relationships underscore the importance of *involving all stakeholders and developing positive relationships within and among staff.* Panelist 3 said of building positive relationships,

> You do so when at all possible. You can't allow a few naysayers to corrupt marginal or new teachers. I've had to say a few times, this is where the school is going. You need to buy a ticket or get off the train…For you to be as effective as you could be and for the school to be effective, you have to operate as a team and build those relationships. As James Comer said, "No significant learning occurs without a significant relationship."

The four D3/S2 items focuses the commitment to others in a community of practice, primarily creating *a culture of trust where all staff are accountable for student performance, avoid blaming students for low performance, and expect altruistic behavior of self and other staff.* Panelist 3 said, "There has to be teacher buy in that what we are doing is best for students." The eight remaining D3/S3 items strengthening and diversifying connections within relationships in the network of a community of practice emphasize *staff efficacy, parent/student/staff relationships and collaboration to strengthen connections and a sense of belonging with the school, and overlapping duties within the staff to strengthen outcomes*. Panelist 3 said of a sense of belonging, "I can't overstate how important this is to the school's growth and success."

The D3 items that reached High Consensus are represented in Table 17. Each item is presented with the original question number, the domain and stage it was classified into, the mean, median, and HPRA. The level of consensus and the level of importance

each item received are also listed in the table. Items are listed in descending order based on the mean scores.

Table 17: Domain Three: Relationships High Consensus Items (.60 ≤ HPRA < .75)

Item	Delphi Statement	Domain	Stage	Mean	Median	HPRA	Consensus	Importance
2	The principal drives change through increased accountability for student performance on the MAP.	3	2	3.67	4	0.67	High Consensus	Critically Important
17	The principal fosters an optimistic environment where teachers believe in student ability.	3	2	3.67	4	0.67	High Consensus	Critically Important
40	The principal promotes a professional learning community within the school.	3	2	3.67	4	0.67	High Consensus	Critically Important
58	The principal shares leadership with participants.	3	3	3.67	4	0.67	High Consensus	Critically Important
70	The principal models and encourages a caring atmosphere within the school.	3	3	3.67	4	0.67	High Consensus	Critically Important
3	The principal expects staff to hold each other accountable for high expectations.	3	2	3.33	3	0.67	High Consensus	Highly Important
12	The principal acts as an equal during team collaboration to influence student learning.	3	2	3.33	3	0.67	High Consensus	Highly Important
20	The principal finds ways to welcome the community into the school.	3	3	3.33	3	0.67	High Consensus	Highly Important
48	The principal deals with employee issues and concerns.	3	3	3.33	3	0.67	High Consensus	Highly Important
63	The principal shares ownership of the school with other participants.	3	3	3.33	3	0.67	High Consensus	Highly Important
67	The principal uses teambuilding to support efforts to improve student performance.	3	2	3.33	3	0.67	High Consensus	Highly Important
69	The principal ensures students receive individual attention from staff.	3	3	3.33	3	0.67	High Consensus	Highly Important
76	The principal provides incentives to students for performance.	3	2	3.33	3	0.67	High Consensus	Highly Important
9	The principal promotes the recruitment of a diverse group of students and parents to participate in efforts to increase student performance.	3	1	3.00	3	0.67	High Consensus	Highly Important
24	The principal encourages calculated risk-taking within the school.	3	3	3.00	3	0.67	High Consensus	Highly Important
50	The principal handles student issues and concerns.	3	3	3.00	3	0.67	High Consensus	Highly Important

The panelists rated five of the D3 high consensus items in this group "Critically Important" and eleven items "Highly Important." The one D3/S1 item dealing with networking building relationships focuses on *recruiting diverse student and parent*

participation in improving student performance. Seven items are D3/S2 items of commitment to others in a community of practice. These items highlight *accountability, staff optimism of student ability, teambuilding and collaboration within a professional learning community, and incentives to students for performance*. Panelist 3 commented on principal participation with the team, "It is the responsibility of the principal to provide the data on student learning as to what is working and not working, ask critical questions, and solicit responses and their suggestions and be prepared to give your own suggestions." Finally, D3/S3 items strengthening and diversifying connections within relationships in the network of a community of practice include *sharing leadership, encouraging calculated risk-taking, and creating a caring and welcoming atmosphere where employee and student issues and concerns are dealt with and students receive individualized attention*. Panelist 3 said, "I do believe we need to empower teachers to take leadership and ownership within the school." In another response, Panelist 3 elaborates,

> You must have a passion for students and staff. Building positive relationships develops mutual trust and respect…The principal needs to be seen as the biggest advocate and cheerleader for his or her school. Getting the public into the school to see all the good things that went on, offering the services of the school for group meetings, booster club and community meetings, does more to promote goodwill than anything I know. It is the community pride and ownership in the school.

Related Findings

Along with the data previously presented, Table 18 shows the changes from Round 2 to Round 3 in regards to how panelists changed their responses. While most of the items had no change or only one response shift among level of importance, 13 of the items had at least two panelists shift their responses up or down in importance. Five of

the items that shifted dealt with D1: Identity items; three items dealt with D2: Information items; and five items dealt with D3: Relationships items. The biggest shift came in the four D1/S2 items regarding commitment to the identity of the organization. The second largest shift came in D2/S2 items regarding the continual evaluation of information within the diverse network of a community of practice.

Table 18: Change in Responses from Round 2 (R2) to Round 3 (R3)

Statement#	Domain	Stage	R2 Mean	R2 Median	R3 Mean	R3 Median	Mean Change	Median Change	R2 HPRA=4	R2 HPRA=3	R2 HPRA=2	R2 HPRA=1	R3 HPRA=4	R3 HPRA=3	R3 HPRA=2	R3 HPRA=1
2	3	2	3.83	4	3.67	4	-0.17	0	5	1	0	0	4	2	0	0
11	3	3	3.33	3	3.17	3	-0.17	0	2	4	0	0	1	5	0	0
33	2	2	3.33	3	3.17	3	-0.17	0	2	4	0	0	2	3	1	0
68	3	3	3.33	3	3.17	3	-0.17	0	2	4	0	0	1	5	0	0
82	2	2	3.33	3	3.17	3	-0.17	0	2	4	0	0	1	5	0	0
9	3	1	3.17	3	3.00	3	-0.17	0	2	3	1	0	1	4	1	0
14	2	1	3.33	3.5	3.33	3	0.00	-0.5	3	2	1	0	2	4	0	0
20	3	3	3.33	3.5	3.33	3	0.00	-0.5	3	2	1	0	2	4	0	0
10	2	1	3.50	3.5	3.50	4	0.00	0.5	3	3	0	0	4	1	1	0
17	3	2	3.50	4	3.67	4	0.17	0	4	1	1	0	4	2	0	0
18	2	2	3.33	3.5	3.50	3.5	0.17	0	3	2	1	0	3	3	0	0
41	1	2	3.50	4	3.67	4	0.17	0	4	1	1	0	5	0	1	0
71	1	2	3.50	4	3.67	4	0.17	0	4	1	1	0	4	2	0	0
25	2	2	3.33	3.5	3.50	4	0.17	0.5	3	2	1	0	4	1	1	0
27	1	1	3.33	3	3.50	3.5	0.17	0.5	2	4	0	0	3	3	0	0
56	1	2	3.33	3.5	3.50	4	0.17	0.5	3	2	1	0	4	1	1	0
58	3	3	3.50	3.5	3.67	4	0.17	0.5	3	3	0	0	4	2	0	0
72	1	0	3.00	3	3.17	3.5	0.17	0.5	2	2	2	0	3	1	2	0
12	3	2	3.17	3	3.33	3	0.17	0	2	3	1	0	2	4	0	0
16	3	2	3.67	4	3.83	4	0.17	0	4	2	0	0	5	1	0	0
21	3	2	3.67	4	3.83	4	0.17	0	4	2	0	0	5	1	0	0
22	3	1	3.67	4	3.83	4	0.17	0	4	2	0	0	5	1	0	0
26	2	2	3.17	3	3.33	3	0.17	0	2	3	1	0	2	4	0	0
57	3	3	2.67	3	2.83	3	0.17	0	0	4	2	0	0	5	1	0
67	3	2	3.17	3	3.33	3	0.17	0	2	3	1	0	2	4	0	0
76	3	2	3.17	3	3.33	3	0.17	0	2	3	1	0	2	4	0	0
77	2	2	3.67	4	3.83	4	0.17	0	4	2	0	0	5	1	0	0

40	3	2	3.33	3.5	3.67	4	0.33	0.5	3	2	1	0	4	2	0	0
74	2	2	3.33	3.5	3.67	4	0.33	0.5	3	2	1	0	4	2	0	0
80	1	2	3.33	3.5	3.67	4	0.33	0.5	3	2	1	0	4	2	0	0
23	1	2	3.50	3.5	3.83	4	0.33	0.5	3	3	0	0	5	1	0	0
31	2	2	3.50	3.5	3.83	4	0.33	0.5	3	3	0	0	5	1	0	0
37	1	3	3.50	3.5	3.83	4	0.33	0.5	3	3	0	0	5	1	0	0
38	1	2	3.50	3.5	3.83	4	0.33	0.5	3	3	0	0	5	1	0	0
52	2	2	2.83	3	3.33	3	0.50	0	1	3	2	0	2	4	0	0
32	3	1	3.50	3.5	4.00	4	0.50	0.5	3	3	0	0	6	0	0	0
46	1	2	3.50	3.5	4.00	4	0.50	0.5	3	3	0	0	6	0	0	0
51	3	3	3.50	3.5	4.00	4	0.50	0.5	3	3	0	0	6	0	0	0
53	3	1	3.50	3.5	4.00	4	0.50	0.5	3	3	0	0	6	0	0	0
64	3	3	3.33	3.5	3.83	4	0.50	0.5	3	2	1	0	5	1	0	0
1	3	2	3.83	4	3.83	4	0.00	0	5	1	0	0	5	1	0	0
3	3	2	3.33	3	3.33	3	0.00	0	2	4	0	0	2	4	0	0
4	2	2	4.00	4	4.00	4	0.00	0	6	0	0	0	6	0	0	0
5	2	3	3.83	4	3.83	4	0.00	0	5	1	0	0	5	1	0	0
6	1	2	3.67	4	3.67	4	0.00	0	4	2	0	0	4	2	0	0
7	1	2	3.67	4	3.67	4	0.00	0	4	2	0	0	4	2	0	0
8	1	2	3.50	3.5	3.50	3.5	0.00	0	3	3	0	0	3	3	0	0
13	2	1	3.00	3	3.00	3	0.00	0	1	4	1	0	1	4	1	0
15	3	3	3.83	4	3.83	4	0.00	0	5	1	0	0	5	1	0	0
19	1	2	3.67	4	3.67	4	0.00	0	5	0	1	0	5	0	1	0
24	3	3	3.00	3	3.00	3	0.00	0	1	4	1	0	1	4	1	0
28	2	2	3.33	3	3.33	3	0.00	0	2	4	0	0	2	4	0	0
29	1	2	3.17	3	3.17	3	0.00	0	1	5	0	0	1	5	0	0
30	2	2	3.83	4	3.83	4	0.00	0	5	1	0	0	5	1	0	0
34	1	2	3.83	4	3.83	4	0.00	0	5	1	0	0	5	1	0	0
35	1	2	3.33	3	3.33	3	0.00	0	2	4	0	0	2	4	0	0
36	1	0	3.00	3.5	3.00	3.5	0.00	0	3	1	1	1	3	1	1	1
39	1	2	3.33	3	3.33	3	0.00	0	2	4	0	0	2	4	0	0
42	1	2	3.67	4	3.67	4	0.00	0	4	2	0	0	4	2	0	0
43	2	2	3.67	4	3.67	4	0.00	0	4	2	0	0	4	2	0	0
44	2	2	3.67	4	3.67	4	0.00	0	4	2	0	0	4	2	0	0
45	2	2	3.67	4	3.67	4	0.00	0	4	2	0	0	4	2	0	0
47	1	2	3.17	3	3.17	3	0.00	0	1	5	0	0	1	5	0	0
48	3	3	3.33	3	3.33	3	0.00	0	2	4	0	0	2	4	0	0
49	1	2	3.17	3	3.17	3	0.00	0	1	5	0	0	1	5	0	0
50	3	3	3.00	3	3.00	3	0.00	0	1	4	1	0	1	4	1	0
54	1	2	3.00	3	3.00	3	0.00	0	0	6	0	0	0	6	0	0
55	1	0	3.17	3	3.17	3	0.00	0	2	3	1	0	2	3	1	0

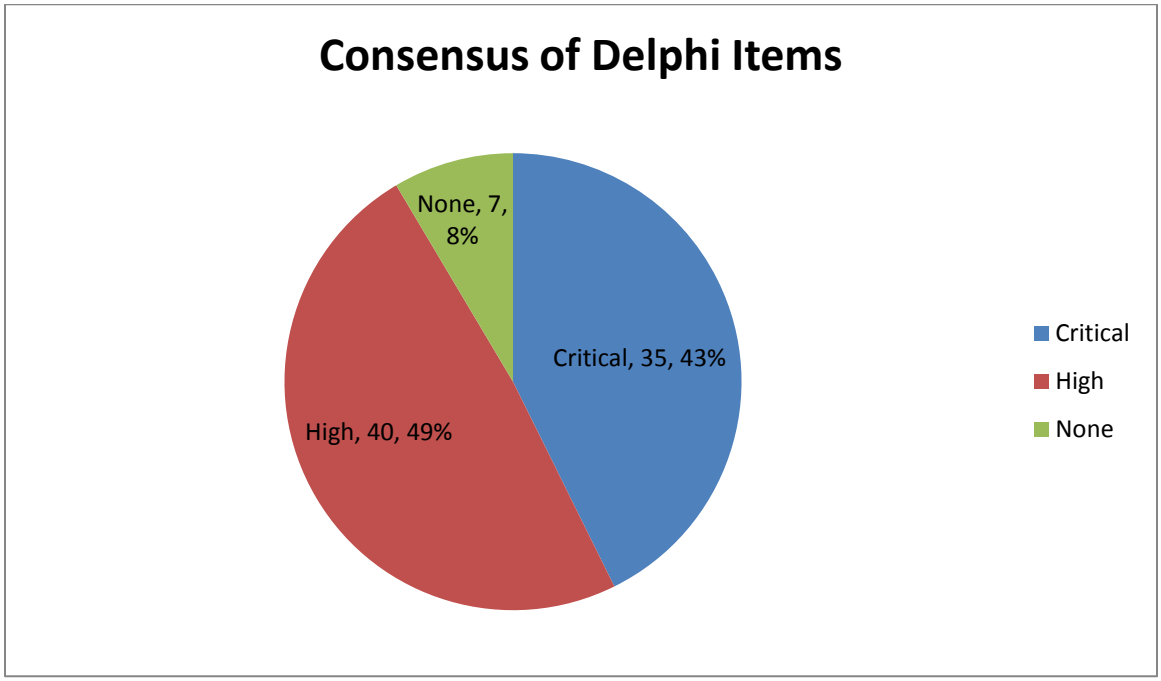
59	1	3	3.00	3	3.00	3	0.00	0	1	4	1	0	1	4	1	0
60	1	1	3.00	3	3.00	3	0.00	0	1	4	1	0	1	4	1	0
61	3	3	3.17	3	3.17	3	0.00	0	2	3	1	0	1	5	0	0
62	1	2	3.67	4	3.67	4	0.00	0	4	2	0	0	4	2	0	0
63	3	3	3.33	3	3.33	3	0.00	0	2	4	0	0	2	4	0	0
65	3	1	3.67	4	3.67	4	0.00	0	5	0	1	0	5	0	1	0
66	3	3	3.17	3	3.17	3	0.00	0	2	3	1	0	1	5	0	0
69	3	3	3.33	3	3.33	3	0.00	0	2	4	0	0	2	4	0	0
70	3	3	3.67	4	3.67	4	0.00	0	4	2	0	0	4	2	0	0
73	3	2	3.00	3	3.00	3	0.00	0	1	4	1	0	0	6	0	0
75	2	0	2.33	2	2.33	2	0.00	0	0	2	4	0	0	2	4	0
78	3	3	3.17	3	3.17	3	0.00	0	1	5	0	0	1	5	0	0
79	2	3	3.33	3	3.33	3	0.00	0	2	4	0	0	2	4	0	0
81	1	2	3.83	4	3.83	4	0.00	0	5	1	0	0	5	1	0	0

Note: The 13 grayed items have an equivalent of two out of six panel members changing their responses into or out of a category of importance.

The total consensus of the Delphi items is represented in Figure 10. The total consensus level necessary was 75% while the study reached a level of 92%. This high level shows strength and consistency in the results from the initial open-ended scenario; my interpretation, analysis, and synthesis of these results; and the validity of the Delphi process in gaining expert consensus in a short number of rounds based on a common understanding of the statements. Only 8% of the items did not reach high or critical consensus, although as discussed earlier, most of these items were split between high and critical leaving the statistical impression of no consensus even though the majority of panelists believed the items were important.

The importance of the Delphi items is represented in Figure 11. Ninety-nine percent of the items were found to be highly or critically important. Only one item was found to be unimportant. No items were found to be highly unimportant. A majority of the 82 items, 44 items or 54%, were seen as critically important to the principalship in high performing, high poverty schools.

Figure 10: Consensus of Delphi Items



The distribution of the Delphi items by the Domains of Emergence is represented in Figure 12. The domain where the majority of the statements emerged was D3: Relationships. Thirty-three items, or 40%, fell into D3. The second most important domain to the panelists was D1: Identity. Twenty-eight items, or 34%, were in D1. The final domain, D2: Information, had 21 items, or 26% generated within it. All three domains were important to the study although D3: Relationships seemed to be the most significant domain.

The distribution of Delphi items by the stages of emergence is represented in Figure 13. An overwhelming majority of items, 47 or 57%, were located in S2: Commitment to Community of Practice. S3: Strengthen and Diversify Connections had 21 items, or 26% of the items. Ten items, or 12%, were located in S1: Networking. Four items, 5%, actually did not have a connection to a stage of emergence.

Figure 11: Importance of Delphi Items

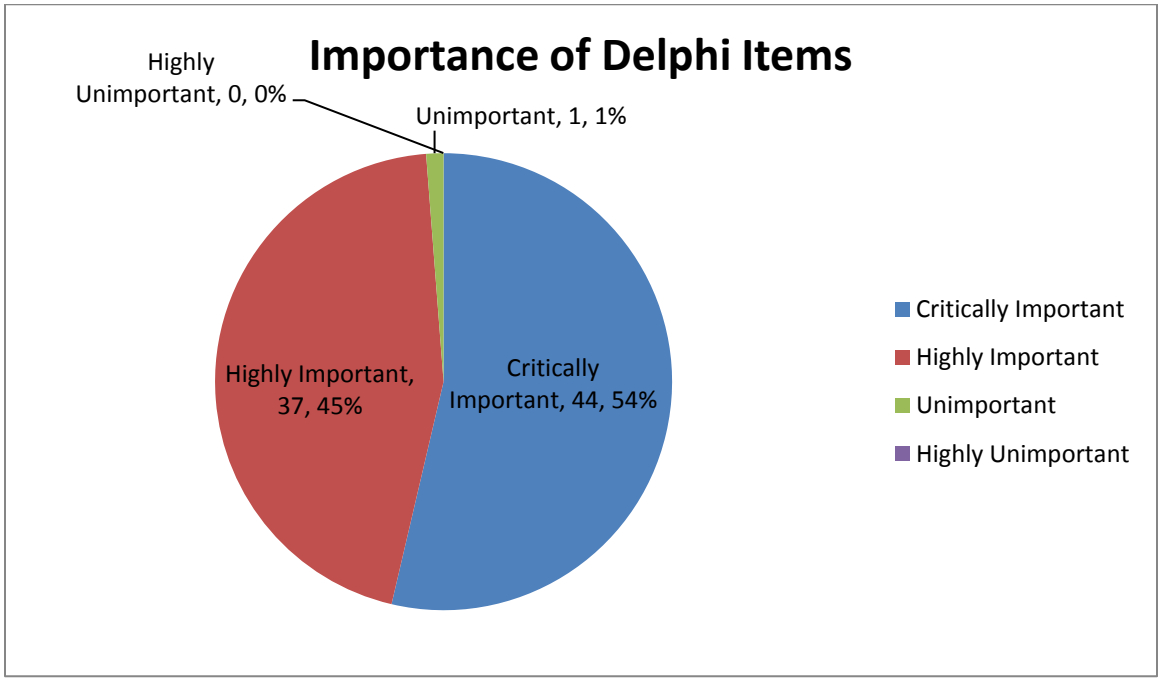


Figure 12: Distribution of Delphi Statements by Domains of Emergence

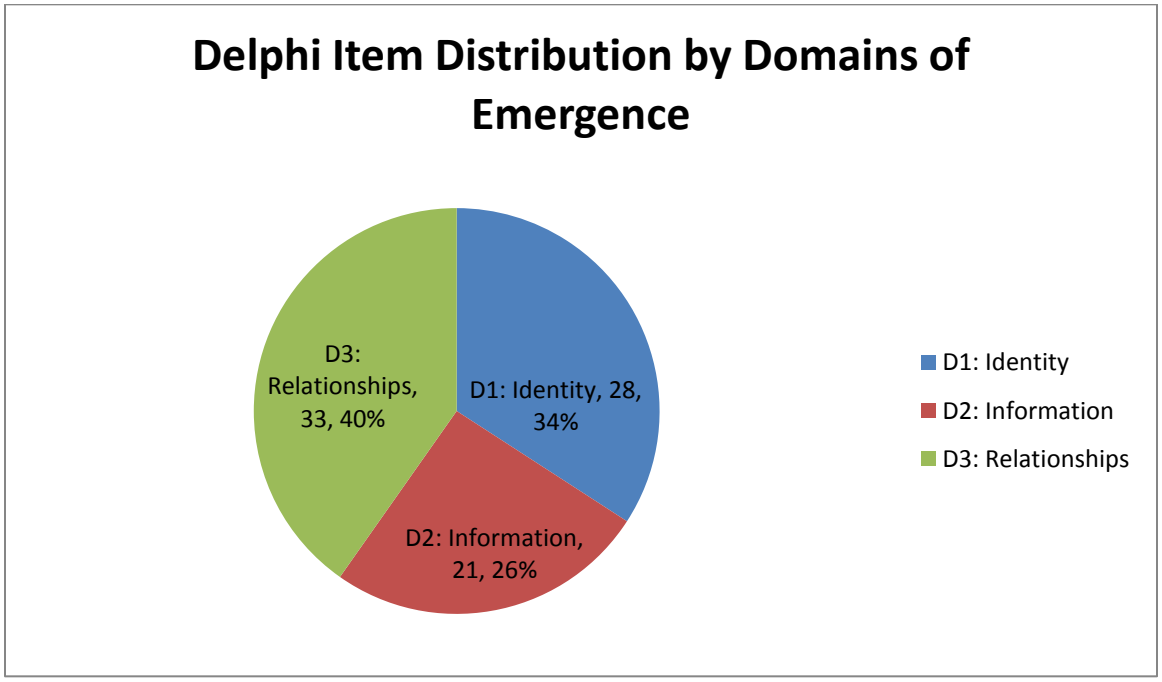


Figure 13: Distribution of Delphi Statements by Stages of Emergence

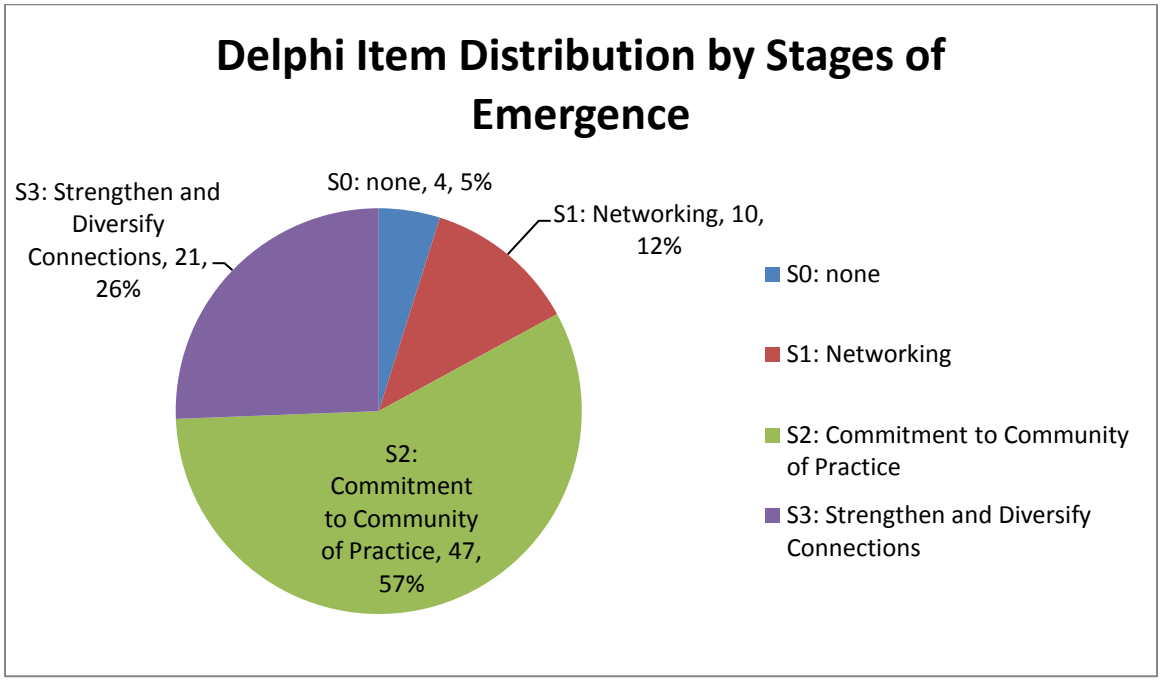
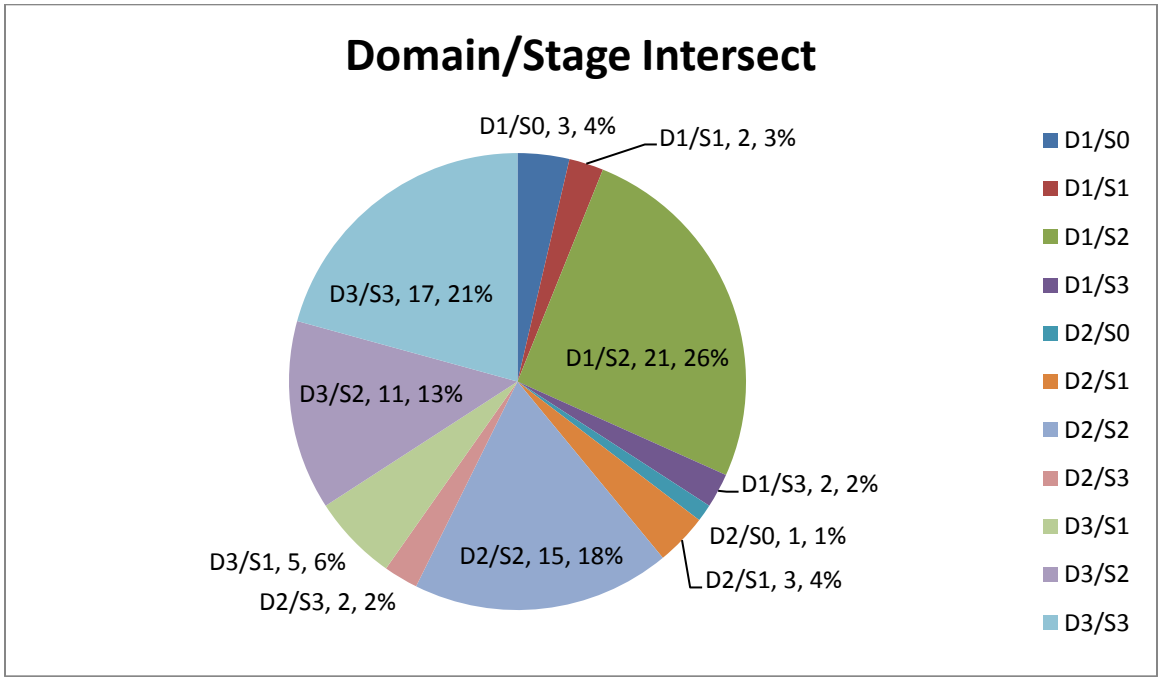


Figure 14: Percentage of Domain/Stage Categories within Delphi Statements



Note: D1: Identity; D2: Information; D3: Relationships; S1: Networking; S2: Commitment to a Community of Practice; S3: Strengthen and Diversify Connections. Most of the statements rated by the panel fell into both a domain and stage of emergence simultaneously. These intersects are discussed and defined as part of the analysis and summarized in Table 20.

Finally, Figure 14 shows the distribution of statements across the domain/stage intersects of emergence. Four areas occupy 75% of the distribution of items. The largest area with 21 statements, or 26% of the items, is D1/S2 or a commitment to the identity of the organization. The second largest area with 17 statements, or 21% of the items, is D3/S3 or what I describe as strengthening and diversifying connections within relationships in the network of a community of practice. The third largest area with 15 statements, or 18% of the items, is D2/S2 or what I describe as continual evaluation of information within the diverse network of a community of practice. The fourth largest area with 11 statements, or 13% of the items, is D3/S2 or commitment to others in a community of practice.

While the statements themselves represent the responses of the panelists to the open-ended scenario, the ratings themselves reveal how the panelists feel about the importance of those statements when they are brought from the tacit to the explicit level. Figure 15 represents the distribution of statements across domains as rated critically important by the panel. Items are fairly evenly distributed with D1 highest at 37%, D3 at 35%, and D2 at 28%. Figure 16 shows the distribution across domains of the statements rated highly important by the panel. Here D3 comes in first at 49%, D1is at 30%, and D2 is at 21%. Clearly when total importance is considered in Figure 17 and Figure 18, D3: Relationships is dominant at 41%, D1: Identity is second at 34%, and D2: Information is less significant at 25%.

Figure 15: Critical Importance Distribution by Domain

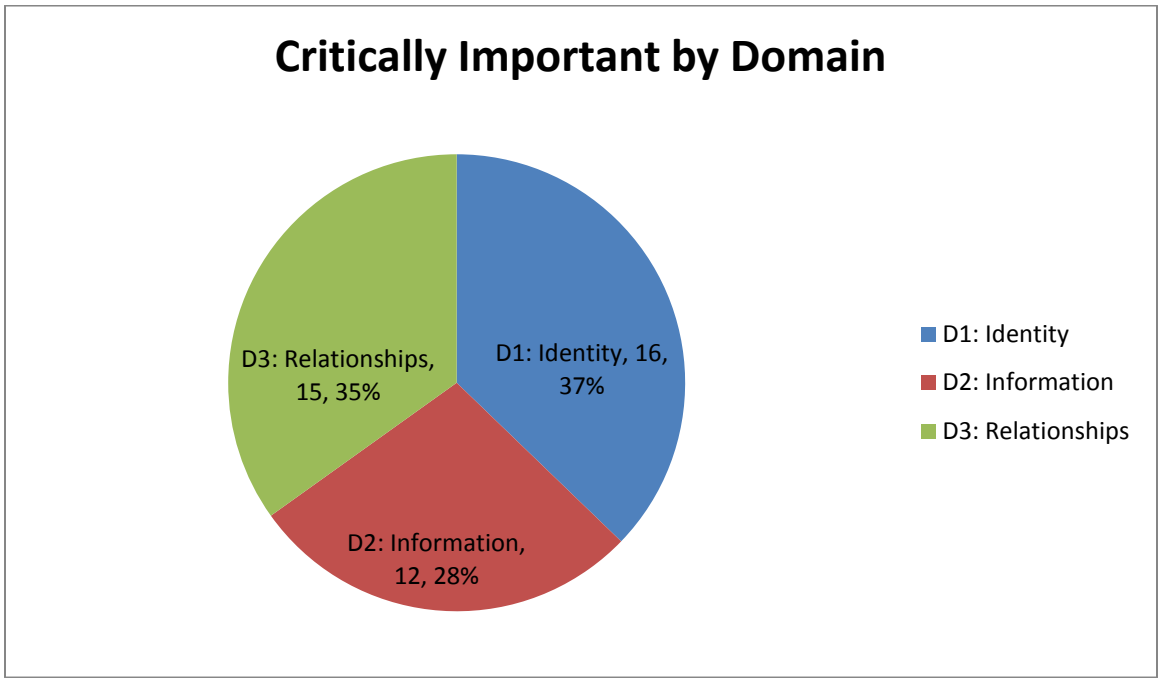


Figure 16: High Importance Distribution by Domain

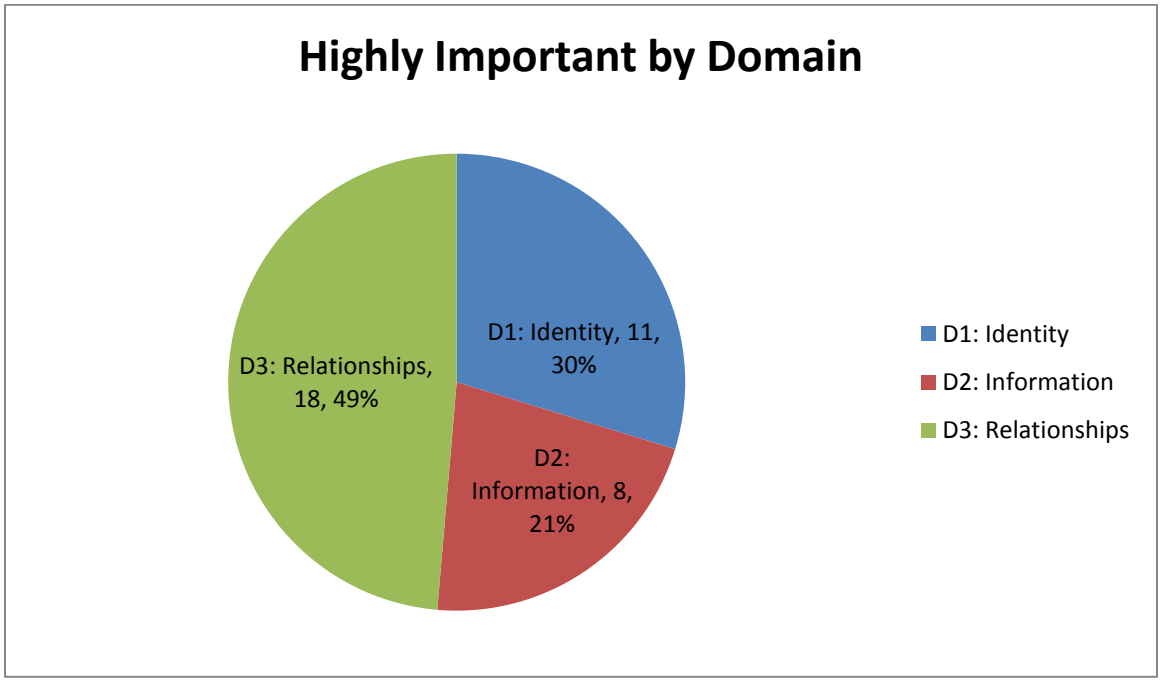


Figure 17: Total Distribution of Importance by Domain

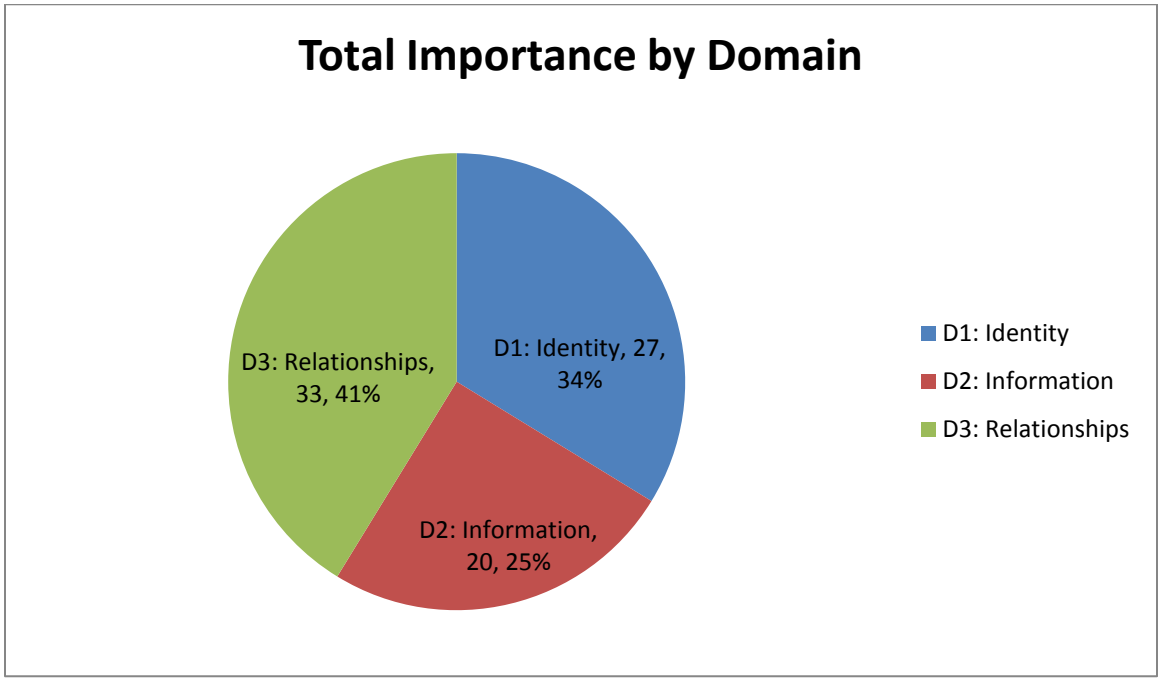
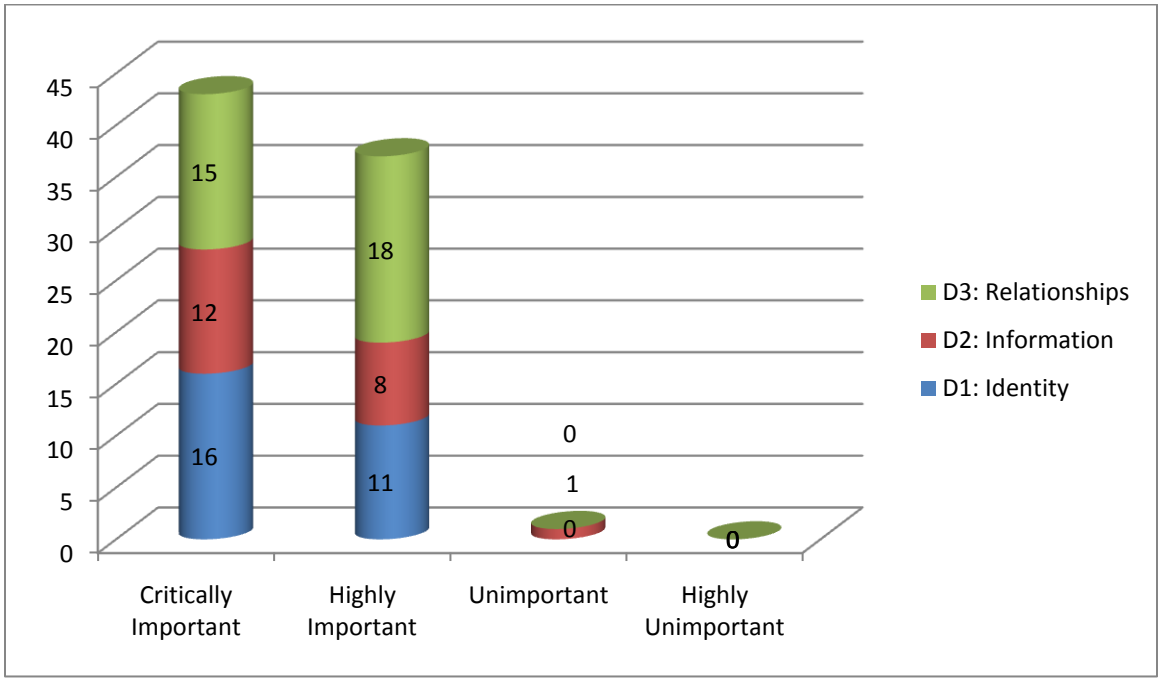


Figure 18: Distribution of Importance by Domain



When the distribution of the importance of statements is considered by stage, Figure 19, Figure 20, Figure 21, and Figure 22 reveal that S2 is clearly considered the most critical item by the panel. S3 is a distant second.

Figure 19: Critical Importance Distribution by Stage

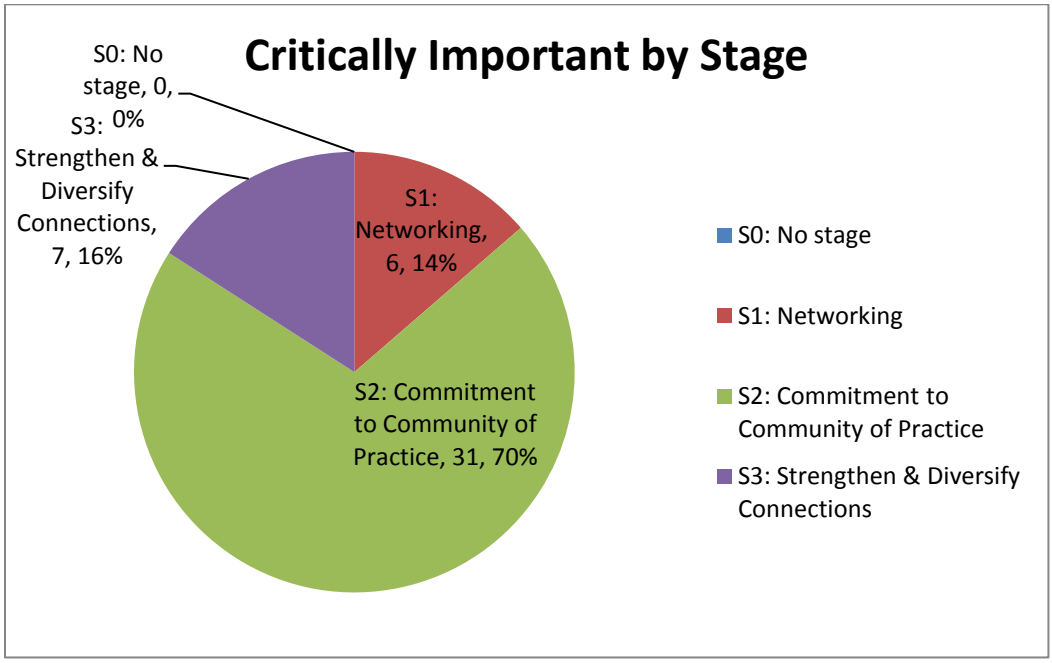


Figure 20: High Importance Distribution by Stage

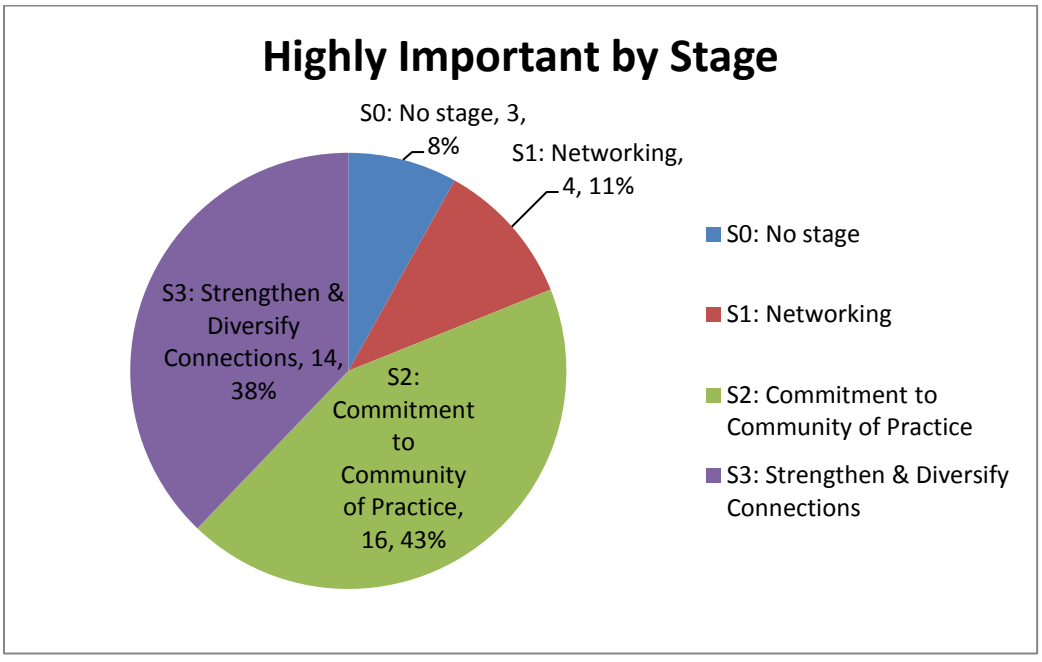


Figure 21: Distribution of Total Importance by Stage

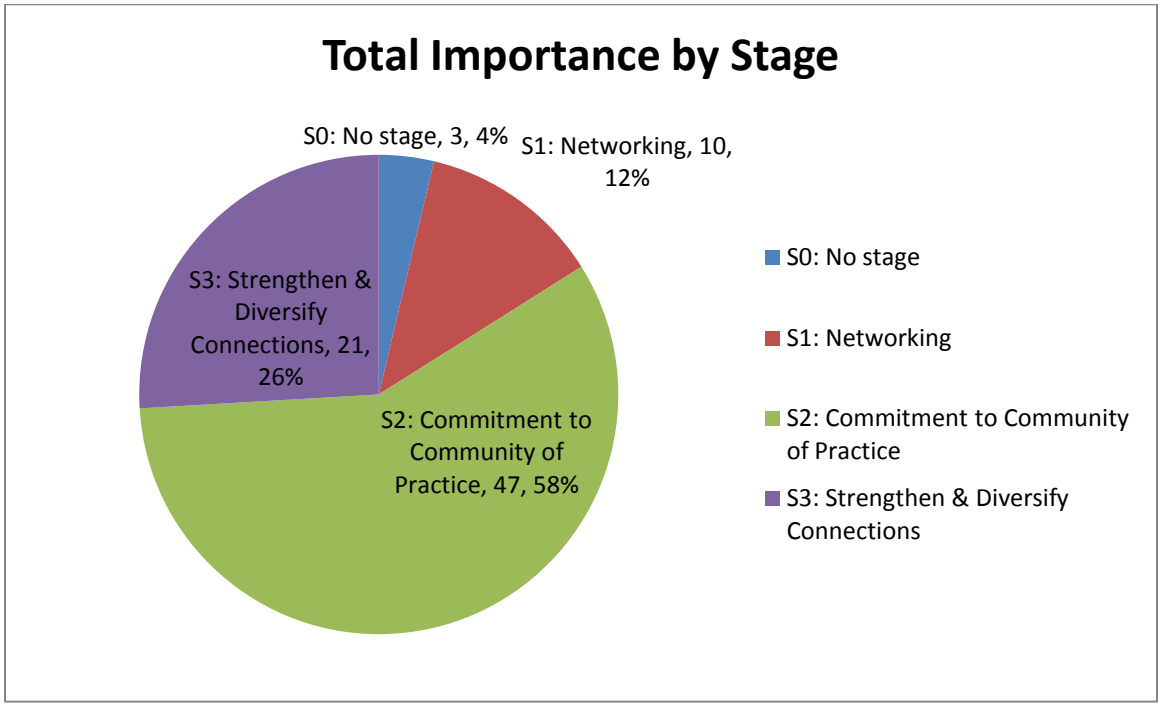
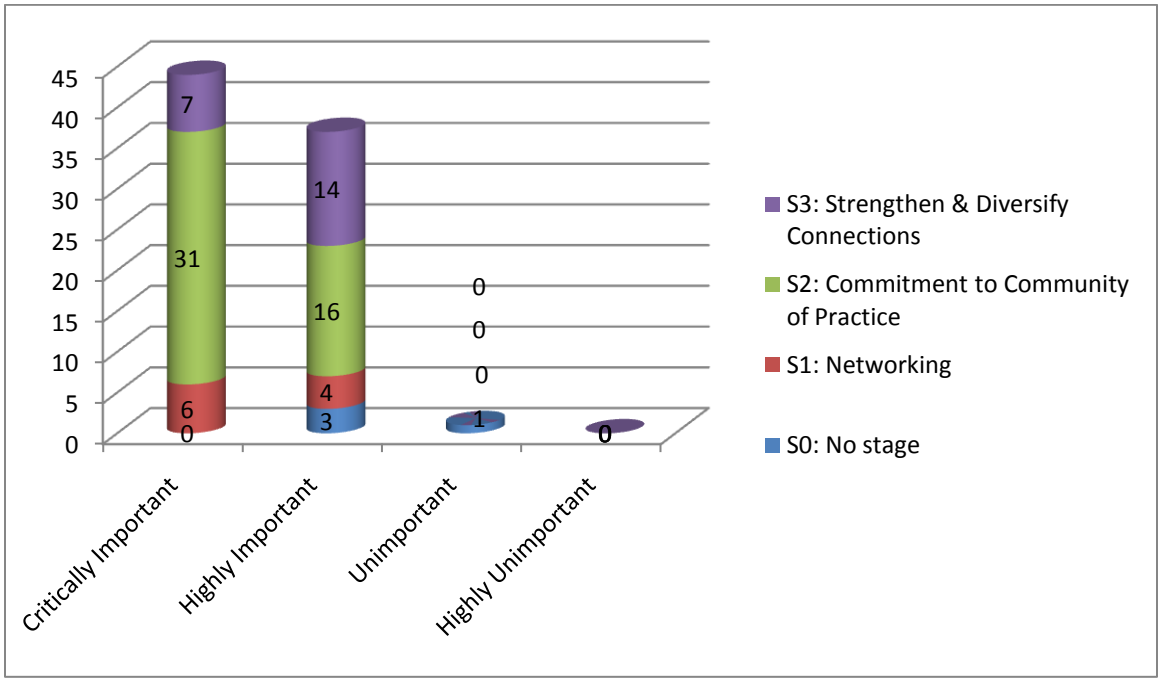


Figure 22: Distribution of Importance by Stage



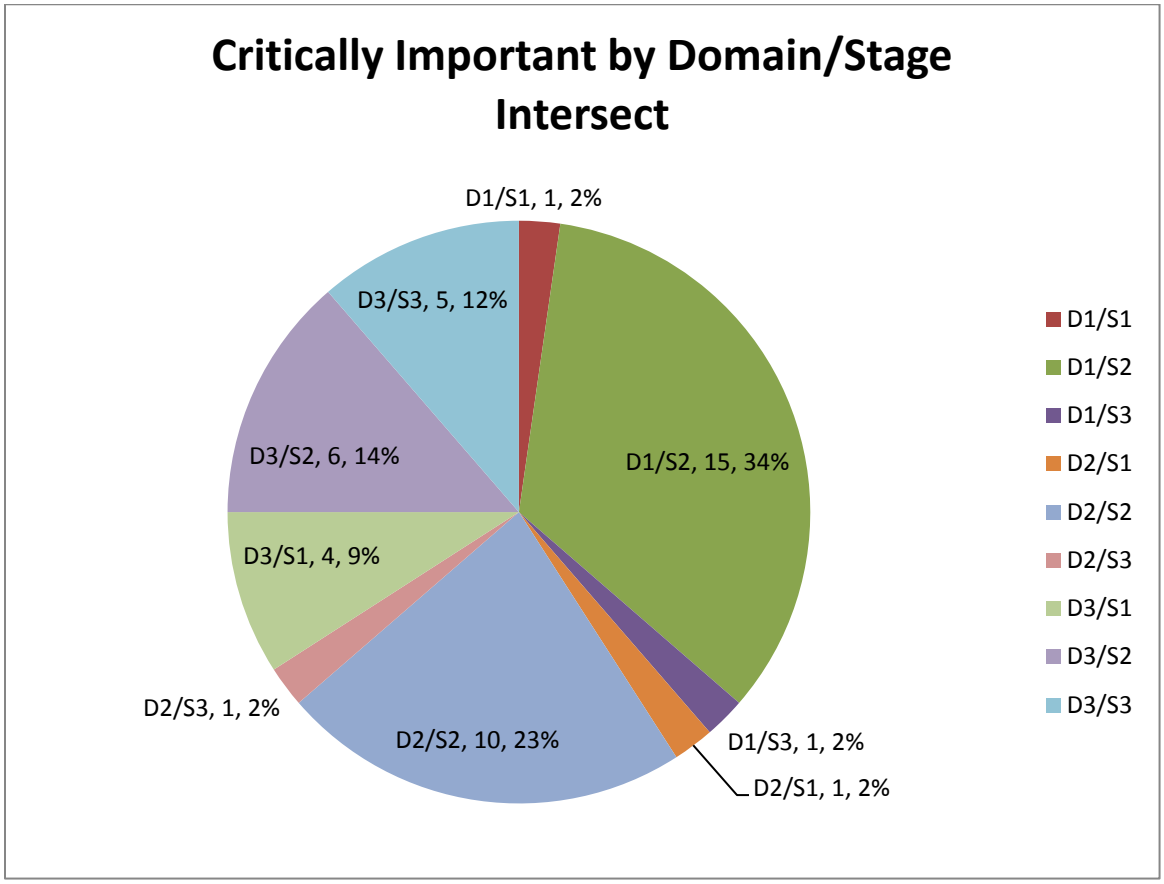
Finally, the distribution of panelists' ratings of statements analyzed by the intersection of the domain and stage of emergence reveal in Figure 23 that D1/S2 is

considered the most critically important intersect at 34%. D2/S2 is second most critically important with 23% of the items. D3/S3 dominates the highly important rated items with 32% in Figure 24. Combining the critically important and highly important items in

When the figures from the ratings of the panel are compared to the frequency with which items appeared in the original statement items, almost complete agreement comes as no surprise since 99%, or all but 1 item, were found to be highly or critically important. Table 19 compares the values of the four largest intersects as well as all domains and stages.

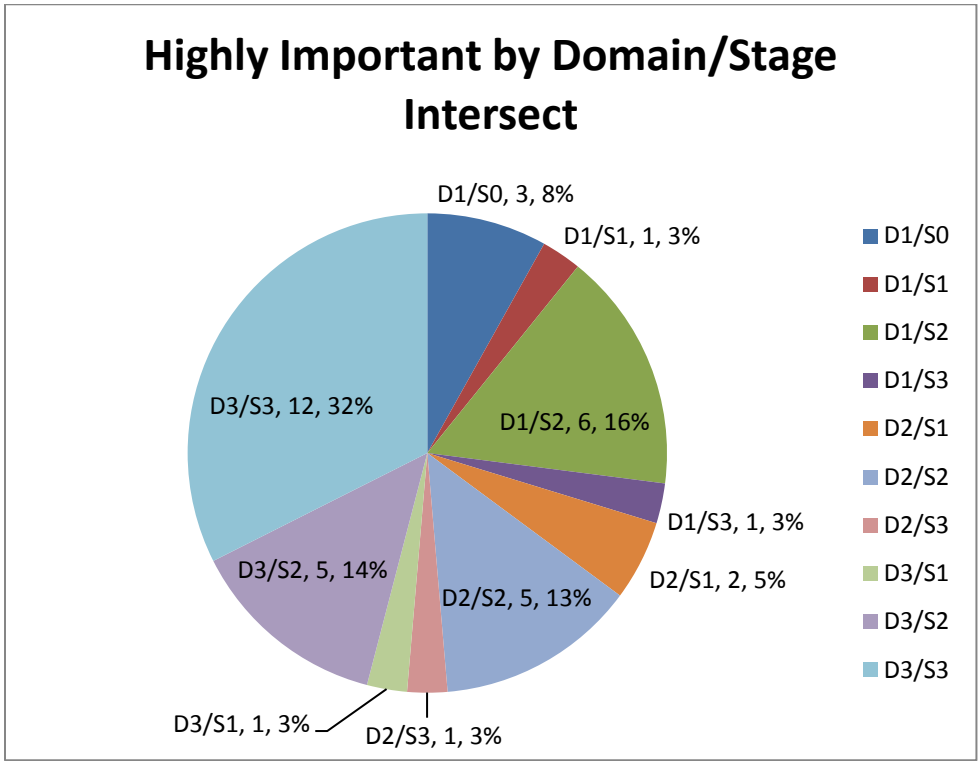
Figure 25and Figure 26 shows four clear areas rated by the panel as important to principals practicing in Missouri HP2S. D1/S2 has 26% of the important items; D3/S3 has 21% of the items; D2/S2 contains 19% of the items; and D3/S2 holds 14% of the items rated as important by the panel.

Figure 23: Critical Importance Distribution by Domain/Stage Intersect



Note: D1: Identity; D2: Information; D3: Relationships; S1: Networking; S2: Commitment to a Community of Practice; S3: Strengthen and Diversify Connections. Most of the statements rated by the panel fell into both a domain and stage of emergence simultaneously. These intersects are discussed and defined as part of the analysis and summarized in Table 20.

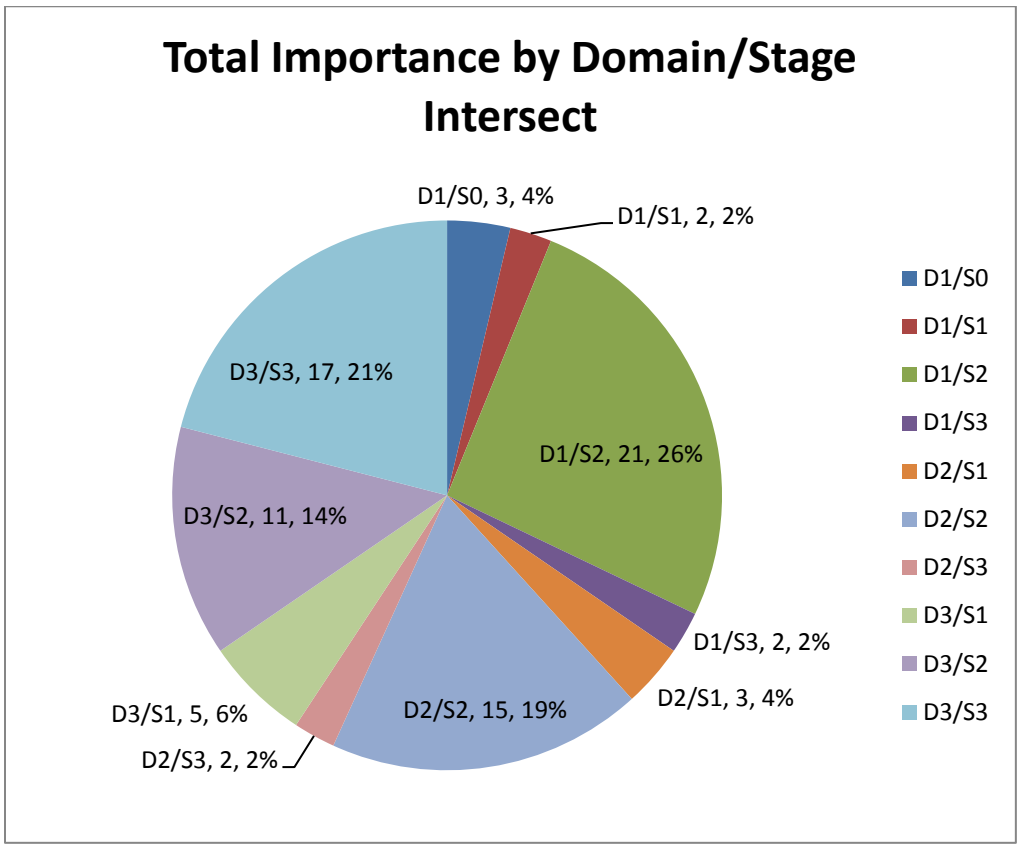
Figure 24: High Importance Distribution by Domain/Stage Intersect



Note: D1: Identity; D2: Information; D3: Relationships; S1: Networking; S2: Commitment to a Community of Practice; S3: Strengthen and Diversify Connections. Most of the statements rated by the panel fell into both a domain and stage of emergence simultaneously. These intersects are discussed and defined as part of the analysis and summarized in Table 20.

When the figures from the ratings of the panel are compared to the frequency with which items appeared in the original statement items, almost complete agreement comes as no surprise since 99%, or all but 1 item, were found to be highly or critically important. Table 19 compares the values of the four largest intersects as well as all domains and stages.

Figure 25: Distribution of Total Importance by Domain/Stage Intersect



Note: D1: Identity; D2: Information; D3: Relationships; S1: Networking; S2: Commitment to a Community of Practice; S3: Strengthen and Diversify Connections. Most of the statements rated by the panel fell into both a domain and stage of emergence simultaneously. These intersects are discussed and defined as part of the analysis and summarized in Table 20.

Figure 26: Distribution of Importance by Domain/Stage Intersect

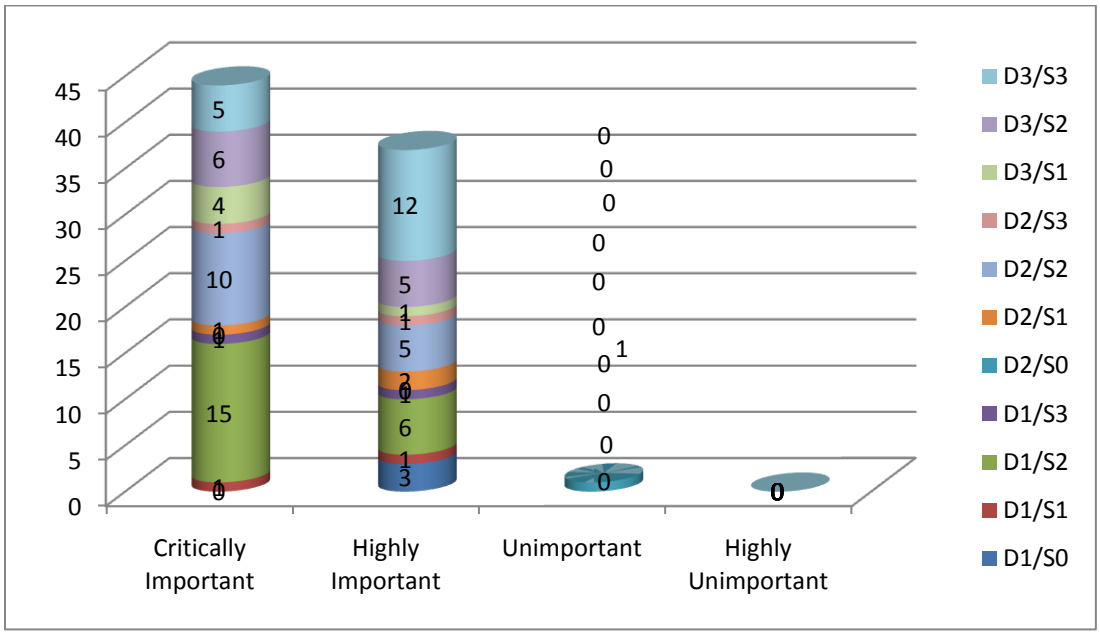


Table 19: Frequency versus Ratings of Domains and Stages within Statements

Results	Statement Frequency	Panelist Rating
D1/S2	26%	26%
D3/S3	21%	21%
D2/S2	18%	19%
D3/S2	13%	14%
Intersect Total	78%	80%
D3	40%	41%
D1	34%	34%
D2	26%	25%
Domain Total	100%	100%
S2	57%	58%
S3	26%	26%
S1	12%	12%
Stage Total	95%	96%

Summary

In summary, the Delphi study to explore the cognitive framework for a new metaparadigm of emergent leadership as suggested by the literature and analyzed through the perspective of acting Missouri principals in HP2S resulted in 82 statements that panel members rated on a 4-point Likert scale of importance. The panelists' responses to an open-ended scenario in Round One resulted in an initial questionnaire with 82 statements. Panelist responses were analyzed and the mean, median, and the HPRA were calculated for each item. When at least 75% of the items had reached high to critical consensus, the study was concluded with final consensus at a very high 92% at the end of Round Three.

During the data collection phase, the further development and study of related literature revealed three domains and three stages of emergence that were used to develop a mental model of emergence. These domains and stages were used to categorize each statement into a domain and a stage for further analysis. Results of the analysis in relation to the domains of emergence were spread out among the three domains with D3: Relationships dominating the other two domains, D1: Identity and D2: Information,

respectively. Results of the analysis in relation to the stages of emergence resulted clearly in S2: Commitment to Community of Practice dominating the other stages. Finally, analysis of the intersection of the domains and the stages resulted in four clear areas of importance with the intersects of D1/S2, D3/S3, D2/S2, and D3/S2 dominating the other seven areas that were represented. The importance of the discovery of the intersects and a discussion about how they should be defined will occur in Chapter 5 and in Table 20.

CHAPTER FIVE

Summary, Findings, Discussion, Conclusions, and Recommendations

This chapter will summarize the research conducted in the study and the limitations that should be considered along with any conclusions that are contemplated. Conclusions will be drawn from the findings of the study and the resulting discussion of those findings. Finally, recommendations for using the results of this study, modifying techniques practiced during the scope of this study, and future research that might be inspired by this study are offered.

Summary of Research

The purpose of this study was to explore the cognitive framework for a new metaparadigm of emergent leadership as suggested by the literature and analyzed through the perspective of acting Missouri principals in HP2S. The increasing complexity of the position of principal in public schools highlights the need for uncovering patterns of practice in high performing, high poverty schools. Finding those patterns of practice will help build a mental model of effective leadership that principals can use to inform their practice. Principals who can successfully infuse these patterns of practice as order parameters guiding a school system into renewal can help the school evolve along with the educational landscape to ensure the survival of public education into the future (Barr & Parrett, 2007; Chenoweth, 2007; Heylighen, 2002).

While over 30 years of literature already exists on high-performing, high-poverty schools in the "effective schools" genre, emergent leadership takes a macro-perspective of schools as complex, adaptive systems situated within complex environments and functioning as living organisms rather than exclusively as educational systems. Table 3

presented an overview of the characteristics of high-performing, high-poverty schools which is very similar to lists of characteristics from the effective schools research. However, Table 3 is presented as a modern, comprehensive list of micro level resultants with a focus on empowerment, agency, collective efficacy, high capacity building, social justice, and sociocultural capital in light of the relationships between the micro and macro levels within the school community. Emergent leadership focuses on the macro level since micro level processes cannot be known until they emerge from interactions at that micro level. Effective schools research falls short in that it still relies on taking micro level processes from other effective schools and trying to replicate them in other ineffective schools through a lens of reductionism facilitated by strong, principal-centered leadership (Danielson, 2002; Lezotte, 1995; Lezotte, 1997; Lezotte, 2001; Shannon & Bylsma, 2007). Complexity teaches us that this type of approach is short-sighted and unpredictable. Emergent leadership, such as the type I studied in Missouri HP2S, utilizes macro level interactions between informal leaders within the domains and stages of emergence to allow processes and procedures at the micro level unfold as the school seeks a better fit within the larger environment.

The Delphi technique was used in this study to explore the perspectives of practicing principals in Missouri HP2S. Six expert principals comprised the final Delphi panel. An open-ended scenario based on the literature on high performing and low performing schools gave principals a chance to describe how they would turn around a low-performing, average Missouri school. From these one to two page responses, 82 statements were synthesized and condensed into a questionnaire administered in two more consecutive rounds. During these rounds, panelists were asked to rate each

statement on a 4-point Likert scale of importance with 4 being Critically Important, 3 equaling Highly Important, 2 equaling Unimportant, and 1 equaling Highly Unimportant. Critical consensus (HPRA≥.75) and high consensus (.60≤HPRA<.75) were reached on 92% of the items at the end of Round Three. Respondents were asked to comment on items to help clarify their thoughts. A Blackboard site was set up to allow this to continue between rounds. Very few comments were offered on the questionnaires and no panelists logged into the Blackboard site to participate in between-round discussion.

Limitations

As discussed in Chapter Three, 20 principals in Missouri were identified as candidates for this study. Of the 20, only 6 principals completed the study. Due to the heterogeneous population of principals, a panel of five to ten participants was considered valid (Clayton, 1997).

The sample of the panel was expert principals in HP2S in Missouri which presented a generalizability issue beyond Missouri; however, the actual population of principals who completed the study were even more focused to the southern half of the state. While the smaller geographical representation may limit the generalizability of the results even within the state of Missouri, the findings will be discussed in relation to the growing body of literature on HP2S presented in Chapter Two to present results that should have national implications.

Due to health issues within the researcher's family and the time constraints on principals, the study expanded from an initial timeline of two months to more than half a year. The principal panel did not complain and even with more time, many had to be

prompted multiple times to return questionnaires. Overall, consensus was very high initially and increased even with the gaps of time between questionnaires.

Another limitation was the use of technology to deliver the questionnaire. Several principals had trouble saving the document that was emailed to their hard drive, filling it in, and then emailing it back to the researcher. Firewalls, email filters, etc. presented challenges the researcher was not prepared for. Usually, such glitches were overcome with a phone call by the researcher to the participant. Unfortunately, some of the dialogue panelists were willing to offer was lost when they did not save the document properly before trying to send it back. At least two questionnaires were filled back in once the panelists knew how to save the document on their computer, but were submitted without the original comments they had made due to time constraints of filling items back in.

Finally, the number of rounds using the questionnaire could be considered a limitation since the target was met, but consensus was not reached on items that had a very high mean and median. Most "No Consensus" items were rated a three or a four, but the dispersion was 50/50 so that a level of consensus was not reached. Another round may have pushed participants to mediate toward highly important or critically important to give almost 100% consensus on the 82 statements.

Findings and Discussions

Findings of the study will be broken down and addressed in a manner consistent with the literature and the research process beginning with findings about the Delphi processes discussed first. Next, findings about complexity and emergence as they relate to the literature and the panels' responses will be discussed. Then, findings about the levels of importance and consensus will be discussed in light of the literature on HP2S

and low performing schools. Finally, a model that incorporates all of the findings will be presented and discussed.

Delphi Process

The demographic data collected on the Delphi panel members demonstrated the panelists were principals from several Missouri public schools across the southern half of the state. The panelists had a minimum of 16 years working in public education with a minimum of 6 years served as principal. All of the principals were working in HP2S as defined in Chapter Three. The panel size was adequate to accomplish the purposes of a Delphi study with a heterogeneous population. During the second round, Panelist 4 quit responding to queries for the questionnaire to be returned.

All of the principals served in schools that performed in the top 20% of all schools in the state on the Missouri state assessment program, the MAP test, in 2007-2008 and had a least 50% of their student population receiving free and reduced meal assistance. Three of the schools were located in counties that had more than 20% of the children in the county living in poverty. These schools had received various accolades. One school had been designated a Gold Star school; four were recognized for Distinction in Performance by the state during the year of the test; and four schools had individual grade levels place in the Top Ten across the state at least one year from 2005 to 2007. Due to the demographic nature of Missouri, the schools were predominately white with one school having more than 20% minority population. Two of the schools were elementary districts where the principal also served as superintendent of the school. One school was a kindergarten through sixth grade building. One school was a fifth/sixth grade building. Another school was a seventh and eighth grade building. And the final

school was a sixth through twelfth grade building. These demographics suggest a well-rounded panel of expert principals. The statistical method used to filter out the nominees for the panel and the principals who finally agreed to participate was approved by my dissertation advisor as adequate to initiate the study.

The open-ended scenario used for Round One was pilot tested by my advisor, two central office administrators, and two higher education faculty members who gave suggestions for clarity and authenticity. This same group reviewed the statements that were conflated from the open ended responses into a questionnaire for Round Two and suggested synthesis and semantic changes for clarity and efficiency. Unfortunately, while seven members completed Round One, one member dropped out without completing Round Two leaving six panelists to complete the study. Still, consensus was strong in both Round Two and Round Three. Due to the panel size, a basic lead-user Delphi procedure, and adequate retention of participants, the Delphi study was accomplished as stated in the research purposes.

Based on the results of the data analysis in Chapter Four, the following section includes summaries and discussions about the categories that emerged from the literature and the panelist's responses during the Delphi study.

Categories of Analysis

During the study, I continued to read current literature on emergence and complexity in organizations and education in particular. The writings of Margaret Wheatley (Wheatley & Frieze, 2006a; Wheatley & Frieze, 2006b; Wheatley & Frieze, 2007; Wheatley & Kellner-Rogers, 1996) and Michael Fullan (2006) seemed to make sense as far as broad categories of emergence in organization, particularly the domains of

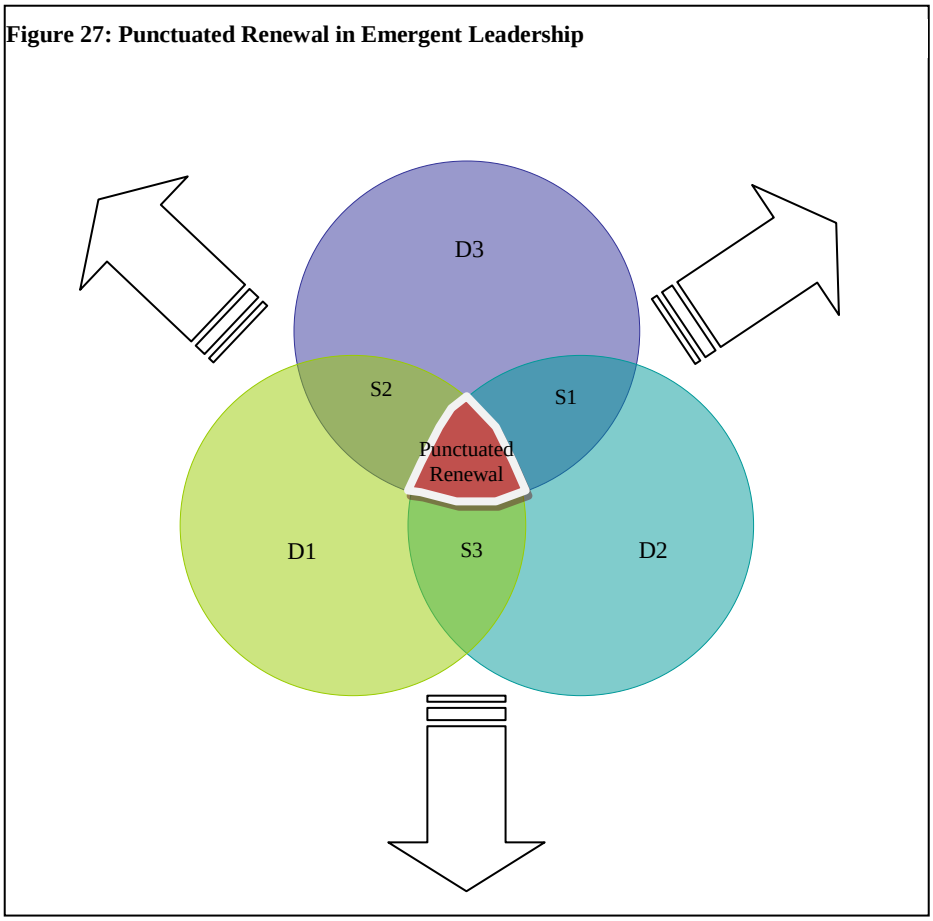
Identity (D1), Information (D2), and Relationships (D3). Wheatley went on to describe the stages of emergence in relation to the domains of Networking (S1), Commitment to a Community of Practice (S2), and Strengthening and Diversifying Connections (S3). The statements that had been generated from the open-ended scenario were fairly evenly distributed among these domains. 40% fell into D3: Relationships while all 33 statements were found to be critically or highly important; 34% of the statements fell into D1: Identity and 27 of these 28 items were rated as critically or highly important; and 26% fell into D2: Information while 20 of the 21statements were rated critically or highly important.

The statements, when distributed by stages of emergence, fell into a different pattern. 57% of the statements were concerned with S2: Commitment to a Community of Practice; 26% were about S3: Strengthening and Diversifying Connections; and 12% of the statements fell into S1: Networking. Four of the statements (5%) were specific to domains and did not also fall into a stage of emergence. All of the statements that could be classified into a stage of emergence were rated as critically or highly important by the Delphi panel. In relation to the years of experience of the expert principals in the study, this distribution probably makes sense since very little maintenance of the network would occur once it was established while overall commitment to the organization would be an ongoing issue that had to be maintained in light of changing student, parent, and teacher populations. S3 would require substantial time and effort, but obviously not as much as commitment yet more than networking.

Punctuated renewal.

When the domains are overlapped, they form the space for the stages to function. The place where the stages converge in the middle of the mental model forces open a space for novelty, or in our case—a window of opportunity where the emergence of leadership and innovative practice is possible. While it would be unrealistic for a system to have the energy to exist in this state all of the time, a principal who is aware of the conditions necessary for an HP2S can facilitate the conditions within the domains and stages of emergence so that when it is possible and necessary to survival, the school enters this space at punctuated intervals to achieve renewal, a more fit state with the environment, or *punctuated renewal* (see Figure 27: Punctuated Renewal in Emergent Leadership). Punctuated renewal could serve as a metaphor for a system, such as a school, "breathing." When the stages of emergence converge and drive a system toward a more fit state with the environment, these stages open a space where resources can flood in, interact, and provide energy to the system which is expelled as emergent leadership and innovative practice that ensures the adaptation and survival of the system. Just as lung capacity of an organism is related to that organism health and survival, the ability of the system to stay in renewal as long as possible before "breathing out" in a state of equilibrium when the system reaches a fitness peak. The system then returns to renewal as quickly as possible to ensure the system adapts in pace with the environment.

Figure 27: Punctuated Renewal in Emergent Leadership



Note: D1: Identity; D2: Information; D3: Relationships; S1: Networking; S2: Commitment to a Community of Practice; S3: Strengthen and Diversify Connections. The convergence of the stages gives the system sufficient complexity to open a space for novelty, namely the emergence of leadership and innovative practice. Instead of punctuated equilibrium, where the desirable state is balance and inactivity, the complex adaptive system seeks punctuated renewal where information and resources are constantly exchanged and utilized to the benefit of the system for survival.

Emergent Leadership in Missouri HP2S

Statements were analyzed against both domain and stage at the same time. I found this to be when clear patterns emerged of leadership behaviors in HP2S. The intersection of domain and stage created a more focused interaction of processes that helped explain principal behavior in HP2S in Missouri (see Table 20).

Table 20: The Domain/Stage Intersections with Emergent Properties

Domain(D)/Stage(S) Intersections	S1: Networking	S2: Commitment to a Community of Practice	S3: Strengthen and Diversify Connections
D1: Identity	D1/S1 (**Emergent One—3rd Order Change**): Networking using the identity of the organization to strengthen and diversify connections and commitment in a community of practice	D1/S2: Commitment of the community of practice to the identity of the organization	D1/S3: Strengthening the identity of the organization
D2: Information	D2/S1: Information flow within networks	D2/S2 (**Emergent Two—Critical Praxis**): Continual evaluation of information within the diverse network of a community of practice	D2/S3: Strengthening and diversification of information
D3: Relationships	D3/S1: Networking builds relationships	D3/S2: Commitment to others in a community of practice	D3/S3 (**Emergent Three—High-capacity Building**): Strengthening and diversifying connections within relationships in the network of a community of practice

D1/S2 intersect: Commitment of the community of practice to the identity of the organization.

The D1/S2 intersection highlights the *commitment of the community of practice to the identity of the organization*. This intersect seems particularly important to HP2S as it represents the largest intersection with 26% of the statements overlapping here. The D1/S2 intersect also represent the highest consensus with 26%. One statement had complete consensus as a critically important item that the principal emphasizes the

importance of effectively developing and implementing the curriculum. The remaining items of critical consensus that were seen as critically important deal with celebrating success, improving student performance, reflection on school values, pride in the school, and eliminating distractions and obstacles. Other critically important items included formative assessment; building policy, procedures, and practices; dealing with resistance; buy-in to the direction of the building; the principal's resolve; sense of urgency; managerial structure of staff; and the performance of subgroups. Highly important items included reinforcing the mission of the school, establishing school and personal goals, change emerging from the context of the school, managing the physical environment/building, monitoring teacher duties and responsibilities, and enforcing policies and procedures.

Again, the literature on high performing schools discussed in Chapter Two and above under D1/S1 underscores the importance of D1/S2 including a broad and deep curriculum with rigor and high expectations that is relevant, guaranteed, and viable whereas low performing schools have a narrow and shallow curriculum that lacks rigor, has low expectations, and teaches to the test. The school and community have a common mission where everyone is involved for their own and others' benefit. The school community is motivated with an internal locus of control and build relationships through cooperation and collaboration as opposed to the polarized populations found in low performing schools (see Table 3: Characteristics of High Poverty Schools).

D3/S3 intersect (Emergent Three—High-capacity Building): Strengthening and diversifying connections within relationships in the network of a community of practice.

The final intersection, D3/S3, is the final emergent property reaching across the space for novelty where leadership and innovative practice emerges. The second largest intersect, with 21% of the statements and 21% of the total consensus, D3/S3 is concerned with the overall capacity of the organization for *strengthening and diversifying connections within relationships in the network of a community of practice*. The emergence of this capacity requires high complexity and the interaction of all components of the system moving it beyond the capacity of subsystems. This emergent property of a complex HP2S could be called *high-capacity building*. The mental model of emergent leadership with the emergent properties of the intersection of domain and stage is represented in Figure 28.

The first statement dealt with a fundamental aspect of learning and student performance and reached complete consensus as critically important: The principal emphasizes classroom management and student engagement. Two more items had critical consensus and were critically important. The principal works to help the staff believe they have the ability to improve student performance and fosters a sense of belonging to the school with participants. Two other critically important items, both with high consensus, were the principal sharing leadership with participants and modeling and encouraging a caring atmosphere within the school.

Six critical consensus, highly important items deal with the interweaving of relationships in the school community. The principal brings diverse community and building representatives together to collaborate on school issues. The principal seeks to increase the number and strength of connections between groups within the network embedded in the school community. The principal seeks innovative ways to involve

parents with the school. The principal promotes relationship building between staff and students. Finally, the principal overlaps duties of staff in the building to strengthen outcomes. The overlapping connections help create redundancy and replication in the complex school environment.

Six other high consensus, highly important items deal with strengthening relationships with the school. The principal finds ways to welcome the community into the school. The principal deals with employee issues and concerns. The principal shares ownership of the school with other participants and encourages calculated risk-taking within the school. The principal ensures students receive individual attention from staff and handles student issues and concerns. In these ways, people are more tightly woven into the fabric of the community of practice.

The literature on HP2S is very clear on the importance of strong, diverse connections to the school as a community of practice. Parents are satisfied with the school and involved. Students stay in school and move on to a post-secondary institution. Teachers participate in professional development, buy in to the school culture, and have high expectations. The principal shares leadership, builds leadership capacity, and has a sense of collective efficacy. The school has a safe, orderly, trusting environment that is collaborative where people feel like they belong and committed to both the school and others. Most importantly, the community feels involved through individual and collective agency where relationships of cooperation and collaboration in the school result in community betterment (see Table 3).

D2/S2 intersect (Emergent Two—Critical Praxis): Continual evaluation of information within the diverse network of a community of practice.

The D2/S2 intersection is the third largest intersect at 18% of the statements and 19% of the total consensus. D2/S2 is another intersect that reaches across the mental model of emergence through the space for novelty. The statements juxtaposed against the stages and domains suggest D2/S2 is the *continual evaluation of information within the diverse network of a community of practice*. This process of ongoing dispersion of reflection within practice of an entire community to ensure survival is an emergent property that could be called *critical praxis*.

The one D2/S2 item that reached complete consensus and was found to be critically important is that the principal considers data analysis a priority for improving student performance. Two more critical consensus, critically important items were about using data to predict current and future changes needed to improve student performance. The final critical consensus, critically important item was that the principal provide classroom resources to staff. The other critically important items included staff reflection on current practices, evaluation of performance to improve student performance, monitoring change and continuously adjusting practice to improve student performance, providing professional development for staff, understanding connections between low performance and marginalized populations, and evaluating the school culture for improvement. The five remaining items were found to be highly important. The principal works to break the cycle of poor student performance in marginalized populations. The principal evaluates the school from a holistic or "big picture" perspective. The principal seeks more efficient procedures and processes within the building. The principal challenges the status quo within the school. And finally, the principal makes staff aware of research on effective schools.

The literature supports these findings (see Table 3). In HP2S, teachers receive effective feedback and principals hold staff accountable. The school has clearly defined goals, focuses on continuous improvement, and is data-driven. The curriculum uses formative data to guide instruction.

In low-performing schools, teachers are unprepared and unresponsive to unique student needs. Principals have no goals. The school does not have the capacity to recognize and solve problems or improve performance. At the same time, the school tracks and misdiagnoses marginalized students.

D3/S2 intersect: Commitment to others in a community of practice.

The D3/S2 intersection represents the fourth largest intersect with 13% of the statements with 14% of the total consensus. With an emphasis on relationships, D3/S2 is concerned with how *commitment to others in a community of practice* helps HP2S emerge. The three highest rated statements with critical consensus found to be critically important starts with the principal holding all staff accountable for student performance on the MAP. The principal focuses staff on that which can be improved (i.e. curriculum, instruction, assessment) as opposed to allowing blame for low performance to be placed on student issues and/or ability. The principal also promotes a culture of trust within the school. The next three items with high consensus and critically important see the principal driving change through increased accountability for student performance on the MAP, fostering an optimistic environment where teachers believe in student ability, and promoting a professional learning community within the school. The final four items have high consensus and are highly important. The principal expects staff to hold each other accountable for high expectations. The principal acts as an equal during team

collaboration to influence student learning. The principal uses teambuilding to support efforts to improve student performance. And finally, the principal provides incentives to students for performance.

HP2S literature supports these findings. These schools have decreased rates of student dropouts. Teachers buy in to the expectation of continuous improvement. The principal holds staff accountable for results. The school is a safe place to take risks and agents trust each other with a sense of responsibility and accountability to the school. The community has a collective efficacy and internal capacity. Low performing schools lack these expectations and any sense of accountability or efficacy (see Table 3).

D3/S1 intersect: Networking builds relationships.

The D3/S1 intersection contains 6% of the statements generated by the Delphi panel with 6% of the total consensus. D3/S1 simply underscores that *networking builds relationships* within complex systems; however, two of these five items reached complete consensus with the panel as critically important. The first item states that the principal relies on the help and knowledge of experts to increase student performance. The second item says the principal maintains a positive environment involving all participants. The other two critical items deal with the principal building positive relationships with, and among, staff and involving all stakeholders in the process of improving student performance. The final item, rated highly important with high consensus is the principal promotes the recruitment of a diverse group of students and parents to participate in efforts to increase student performance.

The literature on HP2S and low achieving schools also highlights the need for networking and building of relationships in high poverty schools. Parents partner with the

principal instead of not being involved. Students are empowered through agency, engaged, and experience social and personal development instead of being absent or dropping out of the school. Teachers participate in professional development, network with Master Teachers, have self- and collective efficacy, and receive effective feedback. The principal shares leadership and has collective efficacy. The school is socially just and collaborative. The school also develops the sense of responsibility, accountability, urgency, belonging, commitment, professionalism, collegiality, and collective efficacy. The community is involved through individual and collective agency and has human and sociocultural capital. The community focuses on relationship building, cooperation, and collaboration with a collective efficacy and internal capacity (see Table 3).

D2/S1 intersect: Information flow within networks.

The D2/S1 intersection is concerned with the *information flow within networks*. With 4% of the total consensus, the D2/S1 intersect only represented 4% of the statements generated by the panel although all three statements were found to be critically or highly important. Of critical importance was the principal promoting dialogue vertically and horizontally across the school building. The other two highly important items focused on proactive dissemination and transparency of vital information and effective communication between the school and diverse groups of parents.

The literature on HP2S supports these findings as low performing schools exhibit uninvolved parents, absent students, isolated teachers, unfocused principals, chaotic schools, and a polarized community. HP2S have involved, satisfied parents considered partners with the principal. Students are empowered and engaged with the school. Teachers receive professional development and receive effective feedback. The principal

has clear, measurable goals; establishes a culture of high performance; has high, optimistic expectations; holds staff accountable, and shares leadership with the school community. The school itself is a data-driven, collaborative environment with professionalism and collegiality (see Table 3).

D1/S1 intersect (Emergent One—3rd Order Change): Networking using the identity of the organization to strengthen and diversify connections and commitment in a community of practice.

The D1/S1 intersection focuses on the identity of the organization in light of the combination of relationships and information to form networks; perhaps more precisely: D1/S1 is *networking using the identity of the organization to strengthen and diversify connections and commitment in a community of practice*. In our mental model, this intersection reaches across the space for the emergence of leadership and innovative practice, making it an emergent property of the system and not a stand-alone property reducible to specific practices of expert principals. At 2% of the total consensus, only 3% of the statements fell into intersect D1/S1, but this intersect as an emergent property describes how a complex system reaches beyond 1st or 2nd order change but enters a state of 3rd order change or continual improvement, adaptation, adjustment, and evolution in balance with the demands of the environment to maintain the identity of the organization despite internal reorganization.

D1/S1 had one statement found to be critically important and one statement highly important. These statements focus on principal behavior including everyone in improving student learning and performance and facilitating conversations across the boundaries of the school community. In the literature on HP2S, parents partner with the

principal with the home the center of learning. Students are held to high expectations and empowered to influence their own learning and be a part of the broader community. Teachers buy-in to continuous improvement of the school and the collective efficacy of the school community. The principal has collective efficacy of, shares leadership with, and builds leadership capacity in the school community. The school has a strong sense of responsibility, accountability, urgency, belonging, commitment, professionalism, collegiality, and collective efficacy. The community shares the mission of the school and is involved through both individual and collective agency. The community builds relationships with and within the school through cooperation and collaboration and has the collective efficacy and internal capacity for high student performance (see Table 3: Characteristics of High Poverty Schools).

In direct contrast, low performing schools have no parent involvement and students have immediate emotional and health needs that trump learning resulting in absenteeism, drop outs, and delinquency. Teachers feel isolated, have incongruent values with the school community, are unresponsive to unique student needs, and use teacher-centered instructional practices. The principal has no mission, values, or goals. He or she is not optimistic and makes the staff feel unworthy. The school itself is an employment agency for adults, disorderly, unfocused, mismanaged, wasteful, and impersonal (see Table 3: Characteristics of High Poverty Schools).

D1/S3 intersect: Strengthening the identity of the organization.

At 2% of the total consensus and 2% of the statements, the D1/S3 intersection is another small intersect which focuses on *strengthening the identity of the organization*. Low-performing schools are impersonal and polarized with teachers that feel isolated.

HP2S are socially just, positive, goal oriented institutions with a focus on learning and continuous improvement. Risk-taking is safe, trust is high, collaboration evident, and agents are hard-working, on-task, data-driven, and rewarded when success is achieved (see Table 3).

The statements generated in the Delphi study touch on two of these items. The panel rated the principal including everyone in developing the vision for the building as critically important. The panel also rated as highly important the principal's sense of awareness of the boundaries that exist between groups within the school community.

D2/S3 intersect: Strengthening and diversification of information.

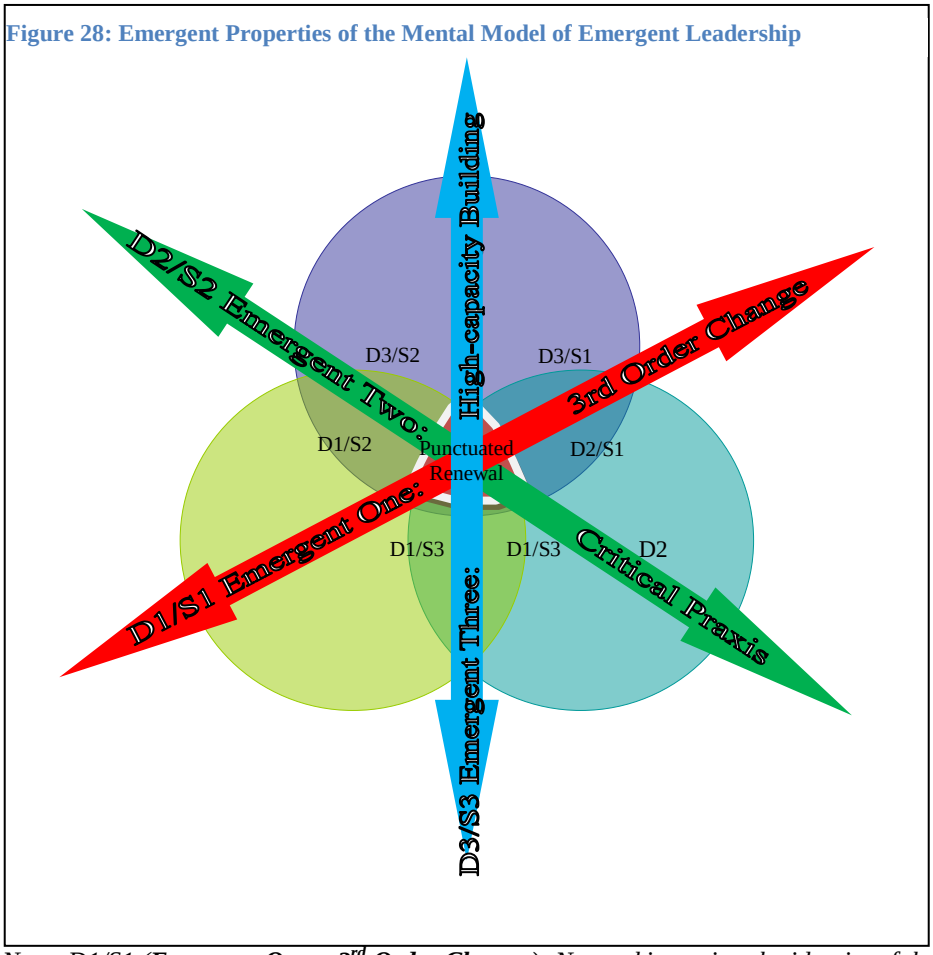
The D2/S3 intersection is also a small intersect representing 2% of the statements and 2% of the total consensus. The emphasis on information within the strengthening and diversification of connections helps describe D2/S3 as the *strengthening and diversification of information*. One item was found to be critically important with the principal actively guiding staff in the analysis of data. The second item which was highly important was the principal providing support resources for students such as tutoring, transportation, equipment, and materials.

HP2S literature sees the home as the center of learning with the parent partnered with the principal. Students act as engaged, empowered agents within the school affecting their own social and personal development. Teachers are high-quality, relying on Master Teachers, and receiving professional development. The principal establishes a culture of high performance. The school relies on collaboration, data, and clearly defined goals to drive student performance. The community possesses human, sociocultural, and financial capital to support student learning by exhibiting relationship building, cooperation, and

collaboration. The curriculum is broad, deep, rigorous, relevant, guaranteed, viable, multi-disciplinary, diverse, and data driven.

Low-performing schools lack parent involvement and student participation. Teachers are unprepared and do not receive professional development. The principal is unfocused. The school lacks capacity and is impersonal. The community is polarized. And the curriculum lacks rigor, has low expectations, teaches to the test, and is narrow and shallow (see Table 3).

Figure 28: Emergent Properties of the Mental Model of Emergent Leadership



*Note: D1/S1 (**Emergent One—3rd Order Change**): Networking using the identity of the organization to strengthen and diversify connections and commitment in a community of practice; D1/S2: Commitment of the community of practice to the identity of the organization; D1/S3: Strengthening the identity of the organization; D2/S1: Information flow within networks; D2/S2 (**Emergent Two—Critical Praxis**): Continual evaluation of information within the diverse network of a community of practice; D2/S3: Strengthening and diversification of information; D3/S1: Networking builds relationships; D3/S2: Commitment to others in a community of practice; D3/S3 (**Emergent Three—High-capacity Building**): Strengthening and diversifying connections within relationships in the network of a community of practice.*

Multi-dimensional learning.

If a complex system's purpose is to self-organize and survive, what type of learning is it accomplishing if it employs the processes found within emergent leadership? Single-loop learning would not contain the complexity necessary for any change to occur. Double-loop learning would also fall short in regards to complexity with no capacity to predict or anticipate coming changes from the environment. The history of the system and future directions would not be simultaneously prepared in a mental model of processes found within an infinite number of subsystems, formal and informal networks, and boundary conditions within the environment in double-loop learning. A complex system's dynamic, synergistic, adaptive learning occurs across multiple dimensions of time and in an infinite number of spaces including the space for novelty for the emergence of leadership and innovative practice; therefore this type of learning could be called multi-dimensional learning (MDL; see Figure 29).

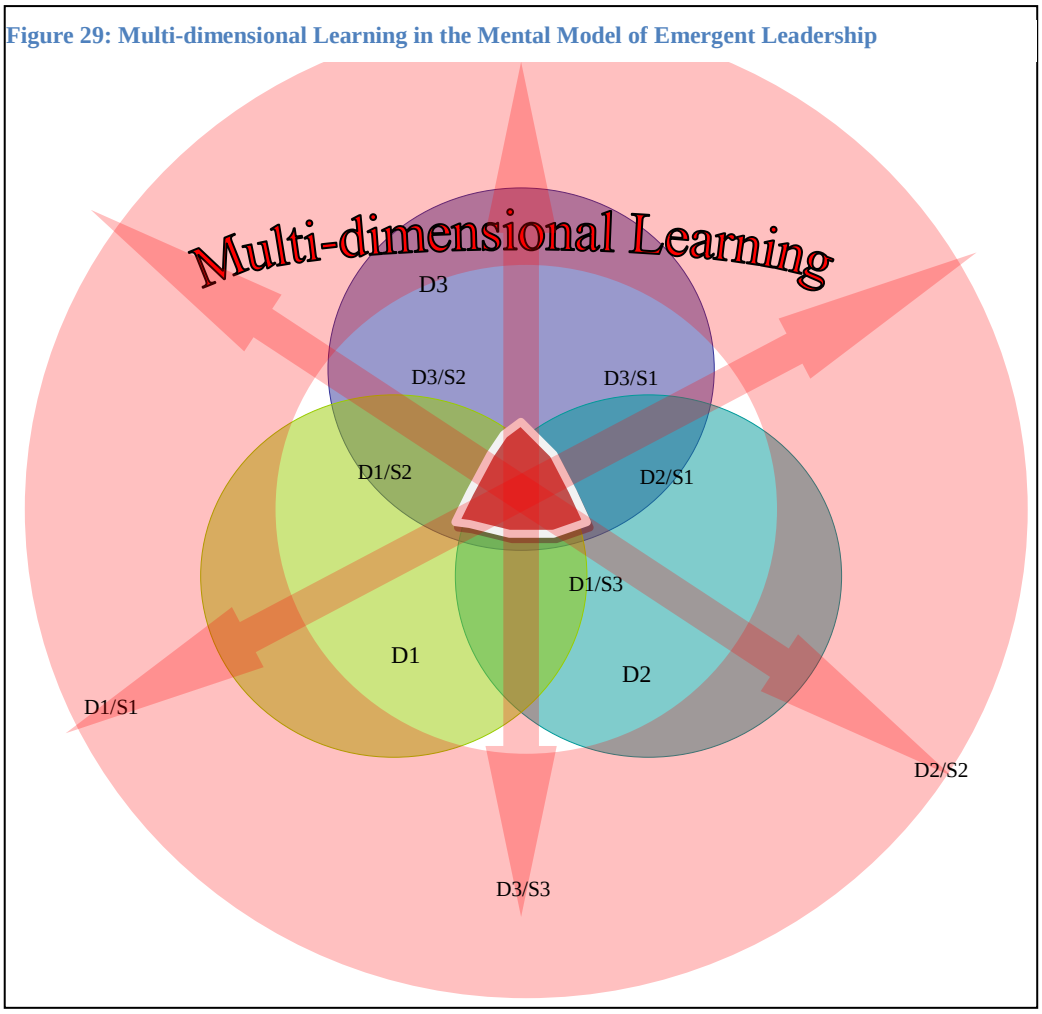
Conclusions

In consideration of the data compiled through the use of the Delphi technique in this study to explore the cognitive framework for a new metaparadigm of emergent leadership as suggested by the literature and analyzed through the perspective of acting principals in HP2S in Missouri, the following conclusions are relevant:

1. Principals in HP2S in Missouri find almost every aspect of the principalship is either "Critically Important" or "Highly Important" with only one statement in the entire study rated as "Unimportant." An incoming principal, or a principal trying to turn a school around should broaden their practice and awareness to a more macroscopic view. A common saying that represents this viewpoint could be,

"Jack of all trades; master of none." However, emergent leadership allows the principal to capture the informal leadership of an agent within the system who is an expert in any given area which the school needs to attend to during the process of multi-dimensional learning.

Figure 29: Multi-dimensional Learning in the Mental Model of Emergent Leadership



Note: This figure shows MDL as a constant, iterative, non-linear process that encompasses emergence within a system. The center of MDL is in the space for novelty where the emergence of leadership and innovative practice occurs.

2. The domain of "Relationships" is the largest domain and rated as most "Important" to which a principal must attend with "Identity" second and "Information" third largest and most "Important" respectively. Effective principals nurture relationships, but do not neglect organizational identity or

information flows. Because of the broad net of importance cast over the statements generated by the panel, the three domains seem to require simultaneous maintenance by expert principals.

3. "Commitment to a Community of Practice" is clearly the largest stage of emergence rated as the most "Important" to principals in HP2S. Due to the popularity of Professional Learning Communities, this finding is not surprising; however, commitment is simply a piece of PLCs and is a key component for practicing principals.
4. The intersect of D1/S2: "*Commitment of the community of practice to the identity of the organization*" is the largest and most important with 21 of 82 statements falling into this category and 7 of those having critical consensus as critically important. This finding represents both the domain of identity and the stage of commitment to a community of practice. The merger of individual commitment to the collective identity of the school is significant. The whole of the organization is not reducible to its component parts. The principal attends to individual commitment and organizational identity to see a collective commitment to organizational identity emerge. This type of macroscopic phenomenon is much stronger than each individual's commitment because it is networked and iterative.
5. The intersect of D3/S3: "*Strengthening and diversifying connections within relationships in the network of a community of practice"* as *Emergent Three: High-capacity building* is the second largest grouping with 17 statements and 3 of those having critical consensus as critically important. Redundancy increases the strength and survivability of the system. When redundancy is combined with

diversification within relationships, the network is strengthened while the possibility of innovative practice emerging increases.

6. The intersect of D2/S2: "*Continual evaluation of information within the diverse network of a community of practice"* as *Emergent Two: Critical Praxis* is the third largest grouping with 15 statements and 4 of those having critical consensus as critically important. A principal who can influence the school to use critical praxis has accomplished the school to set goals, use data for decision making, and employ multi-dimensional learning.
7. The intersect of D3/S2: "*Commitment to others in a community of practice*" is the fourth largest with 11 statements and 3 of those having critical consensus as critically important. Moving agents in the school from self-interest to commitment to others increases the probability of social justice, empowerment, and agency.
8. These four largest intersects account for 64 of the 82 total Delphi statements and 17 of the 23 critical consensus/critically important items emphasizing the importance of relationships, identity, and commitment to a community of practice to the work of principals in HP2S. A principal who can focus on these three intersects has a much better chance of transforming a low-performing school into an HP2S.
9. The literature on low-performing schools and HP2S supports the data presented in Chapter Four. The literature and data, when considered together, highlight the importance of all nine intersects of the domains and stages of emergence. Of particular importance is the interaction of relationships, identity, and commitment

to a community of practice to the work of principals in HP2S. A principal working for a "turnaround" in a low performing, high poverty school can leverage this knowledge by replicating practices in HP2S to affect these interactions. All the while, the principal should keep the principles of complexity in mind and realize that not all practices will interact and produce results in the same manner as schools in which they have been successful. Still, the general archetype, or patterns, of behavior should be macroscopic in nature. As the principal feeds the system with these replicated practices, these practices serve as order parameters pushing the system into a phase transition where the space for novelty opens for the emergence of leadership and innovative practice from within the system. This emergence gives the system the opportunity for punctuated renewal.

10. Leadership is something that is shared with and emerges from many diverse agents interacting with the principal during processes designed to achieve high performance from high poverty students. In a low performing, high poverty school, the school system is reactive rather than proactive. Entropy (disorder) is high. Relationships are weak or nonexistent with a lack of trust between the system (school and administration), agents (teachers and students), and the environment (community). Usually, the system has a weak or negative identity. Information is wielded as both currency and power reserved for administration to control the system and brace against the environment. Overall, low performing, high poverty schools lack the human, sociocultural, and financial capital to overcome the system's incapacity. HP2S have found a way to adapt to changes from the environment by anticipating fluctuations and seek better "fit" ensuring

the system is evolving. This adaptive evolution ensures survival rather than being forced to change after the environment has already changed, refusing to change by closing its boundaries and eventually dying from a lack of energy flowing into the system, or reacting by trying to force the environment to change back to a state desirable to the system. Adaptive evolution also gives the system the opportunity to contribute to the environment during exchange processes allowing the possibility of improving the overall environment for the system's agents. HP2S harness the power of a strong identity to which a community of practice commits. HP2S focus on the importance of relationships within the system and across boundaries into the school community. And finally, HP2S share information freely and foster pathways into the environment for the open exchange of information to increase the ability of the school to be proactive and adaptive to fluctuations in the environment both school community and beyond. The interaction of the domains and stages of emergence in HP2S gives these schools the capacity for 3rd order change, critical praxis, and high-capacity building which allows the space for novelty, the emergence of leadership and innovative practice, to manifest.

Recommendations

Recommendations for the utilization of the results of this Delphi study, methodological modifications of the Delphi process, and future research that would enhance the findings of this study are discussed in this section.

Recommendations for Utilization of Research Findings

The findings of this study can be included in the decision-making process of principals trying to lead high poverty schools through the labyrinth of change from low performing to high performing status. These findings highlight the need for further research in high performing schools related to the emergence of leadership. A starting point for this research could be to conduct studies that would substantiate the generalizability of the findings to other HP2S in Missouri.

The findings of this study, when combined with the literature on complexity, emergence, and HP2S, form a basis for the development of a common vocabulary when talking about the emergence of leadership in organizations. The vocabulary included in Appendix A can serve as a starting point for this common vocabulary.

The statements that received critical consensus and were found to be critically important could help guide principal preparation programs in the state of Missouri. Specifically, the rank order of items and their relationship to the domains and stages of emergence could help aspiring principals prepare a plan of action for entering a high poverty school in a manner that would increase the likelihood of moving the school toward, or sustaining the school's status as, high performing.

Principals in low performing schools are faced with many obstacles and forms of resistance to helping the school improve. The domains, stages, and intersects of emergence and the 81 critically and highly important items as rated by the expert panel of principals could help an aspiring principal focus their attention and energy into the areas that will result in the quickest success. Small victories and celebrations help build the critical connections necessary to the survival of the school.

These recommendations based on complexity and emergence have similarities with the recent "school turnaround" movement. Similarities include common goals and a collective efficacy within teamwork and collaboration. Turnaround schools are concerned with processes for analysis, problem solving, collecting and analyzing data, quick wins, staff changes, replicating successful practices from other schools, communicating vision, gaining support, and measuring and reporting progress (Brinson, Kowal, & Hassel, 2008; Calkins, Guenther, Belfiore, & Lash, 2007; Duke, 2007; Herman, et al., 2008; West, 2008). Emergent leadership moves back to a macro level where system agents focus on identity, information, and relationships. Emergent leadership attends to the commitment to the community of practice, networks within the system and beyond, and strengthening and diversifying information within the system. Emergent leadership can pick and choose which micro-level processes and conditions characteristic of other HP2S are needed at any given moment in time to feed energy into the system so that the emergence of leadership and innovative practice can continue.

Another primary difference between emergent leadership and school turnaround is turnaround's focus on success being driven by a strong principal's abilities (West, 2008). Turnaround schools rely on a strong leader to force prescribed change rather than allowing leadership and adaptation to emerge from the needs of the school to survive in a changing environment. If leadership is key, schools should want to develop that capacity as a trait of the system to yield and sustain high performance. Turnaround schools are bound by a three year window for success while schools viewed as complex, adaptive systems continually strive to meet the demands of a changing environment.

Recommendations for Methodological Modifications

Three methodological modifications are recommended for replication or further research regarding the Delphi technique as it was utilized in this study. These three recommendations include changing the process of generating statements, changing the format of the survey tool, and changing the time frame of the study.

In terms of generating statements, if I would have read the works of Margaret Wheatley earlier I would have been able to use the domains, stages, and intersects of emergence to collapse and synthesize Round One results. This more formal organization would have resulted in a more compact set of statements; however, this could also have had the effect of limiting the "emergence" of the statements and forced them into predetermined patterns based on the literature. Now that the study is concluded and the results appear valid, I would recommend future research follow the domain/stage/intersect categorization of statements regarding emergent leadership.

In hindsight, I see that the survey tool I created should have contained fewer factors to be as clear as possible. Furthermore, the tool relied too heavily on electronic prowess that some expert principals found challenging. The frustration felt by the panel with the multiple steps to saving, responding, and resending attachments caused valuable feedback to be lost. I would suggest creating the survey tool directly pasted into an email or using a survey service such as Survey Monkey or Zoomerang. My intention was to give the panel member sufficient reflection time on their and other panelists' responses before having to resubmit the questionnaire; however, principals are so busy a web-based tool might have encouraged them to complete the survey in one sitting. Keep in mind that this might affect retention rates in a study design that already has critically low numbers.

A final change recommended for any study with public school principals, especially those working in high poverty schools, would be changing the time frame of the study. My original intent was to conduct the bulk of the study during the summer when principals were less busy. By the time my preparation for the study was done and all of the methodological requirements of the university were satisfied, I found myself beginning to contact potential panel members after the beginning of the school year had started. Beginning data collection at the beginning of school lengthened the time of the study considerably. A study that would be issued to principals towards the end of May and beginning of June when principals are wrapping up one year and preparing for the next would probably yield the highest participation and quickest response to any type of public school study. While time and distances between panelists would have been a limitation, participation may have been increased if the instrument had been conducted in person with the principals or a web-cam had been used to question principals with responses and comments recorded so that the limitations of emailing would have been eliminated.

Recommendations for Future Research

While the results of this study offer a mental model of emergent leadership and factors that seem to influence the emergence of leadership and innovation in high poverty schools, these same results point to areas where more research is necessary. The findings of this study, along with growing body of literature on HP2S, indicate the need for school administrators to have an understanding of complexity in organizations and the concept of emergence. I recommend the following research opportunities as a result of the insights generated by this study:

1. This study involved principals from predominantly small schools in southern Missouri. Future studies utilizing the same instrument to collect data from all public school principals could yield results that are comparable from low performing to high performing schools, very small to urban schools, across levels of principal experience, and perhaps even geographical areas of the state.
2. The current study should be replicated in other states and/or perhaps geographical areas of the United States. States are diverse in regards to sociocultural capital and student demographics. Such replication should confirm or contradict the findings of this Delphi study and add to growing body of research on high poverty schools. A study across the United States using samples from all of the federally identified educational regions with principals from high-poverty schools in rural, suburban, urban, and metropolitan demographics would maximize the generalizability of findings from such a study.
3. The current study should be replicated in high performing countries with which the United States is compared. The diversity of such studies would confirm or contradict the findings of this Delphi study and increase the generalizability of findings while adding to the growing body of educational research.
4. The statements generated during this study could be re-synthesized using the domains, stages, and intersects of emergence to create a more focused study and a more specific model of emergent leadership.
5. Similar research should be conducted to focus on punctuated renewal and sustainability. The nature of complexity drives systems through cycles of reaching fitness peaks, then searching for more fit peaks as the environments shifts and

changes. Such as study could examine the nature and frequency of these cycles in HP2S versus low-performing schools including how sustainable bursts of innovation are when an HP2S is in renewal.

6. This study focused on HP2S. Conduct a study with the opposite intent would be worthwhile: to look for a model of emergent leadership in low-performing, high-poverty schools to use in comparison with the findings in HP2S. This approach would support the concepts within complexity science of paradox and juxtaposition.
7. Similar research should be conducted using the perspective of students, teachers, and parents in HP2S where they are rating principal behaviors within the model of emergent leadership.
8. Funding specific to studying HP2S could be used to confirm the results of this study through a researcher's observation in Missouri HP2S. The confirmation of such results and the insights gleaned could be used to develop high quality professional development to be delivered to school community members in low-performing Missouri districts.

Summary

The increasing accountability for high student performance from the federal level has caused high poverty schools to struggle to meet federally set levels of proficiency. High performing, high poverty schools offer patterns of practice and behavior that can serve as a model for other schools to aspire toward; however, the science of complexity has demonstrated that prediction beyond the short-term is impossible and simply copying effective practices in one context in a different context does very little toward achieving

similar results. Complexity science also demonstrates how systems effective at managing change in the face of a changing environment use the principles of self-organization and emergence to continually seek a more fit state in order to maintain the overall identity of the system (Barr & Parrett, 2007; Chenoweth, 2007; Chu Clewell & Campbell, 2007; Goldstein, 2001; Heylighen, 2002; Stacey, 1996; Waldrop, 1992; Wheatley, 2006a). When these principles are combined into a model of emergent leadership, principals in high poverty schools can begin to see which behaviors and patterns have led to high performance in large numbers of schools facing conditions similar to the ones in their own school. This study synthesized the literature on complexity science, emergence, HP2S, and low performing schools to develop a methodological approach true to emergence that could explore the model of emergent leadership evident in Missouri HP2S. The results of this Delphi study provide a mental model of emergent leadership which can serve as a metaparadigm for aspiring and practicing principals and help guide principal preparation programs. Nevertheless, the study was focused on a small panel of expert principals in the southern half of the state of Missouri. Experiences and philosophies in areas outside of southern Missouri utilize sociocultural capital which could result in diverse and divergent results compared to this study. As has been stated numerous times by various authors throughout this study: There is no silver bullet to increasing student performance in high poverty schools (Gewertz, 2007; Machtinger, 2007; Portes, 2005; Wheatley & Frieze, 2007).

REFERENCES

Abrego, M. H., Rubin, R., & Sutterby, J. A. (2006). They call me Maestra: Preservice teacher's interactions with parents in a reading tutoring program. *Action in Teacher Education , 28* (1), 3-12.

AhNee-Benham, M. K. (2003). In our mother's voice: A native woman's knowing of leadership. In M. D. Young, & L. Skrla (Eds.), *Reconsidering Feminist Research in Educational Leadership* (pp. 243-245). Albany, NY: State University of New York Press.

American Psychological Association. (1997, November). *Learner-centered psychological principles: A framework for school redesign and reform.* Retrieved August 2, 2004, from American Psychological Association: http://www.apa.org/ed/lcp.html

Anderson, R., Crabtree, B. F., Steele, D. J., & McDaniel, R. R. (2005). Case study research: The view from complexity science. *Qualitative Health Research , 15* (5), 669-685.

Association for Supervision of Curriculum and Development. (2007). *Fostering leadership capacity for school success: A conversation with Linda Lambert.* Retrieved September 21, 2007, from ASCD Express: http://www.ascd.org

Ayman, R. (1993). Leadership perception: The role of gender and culture. In M. Chemers, & R. Ayman (Eds.), *Leadership Theory and Rearch: Perspectives and Directions* (pp. 137-166). Sand Diego: Academic Press.

Banks, C. A. (2000). Gender and race as factors in educational leadership and administration. In *Educational Leadership* (pp. 217-256). San Francisco, CA: Jossey-Bass.

Barkley, S., Bottoms, G., Feagin, C. H., & Clark, S. (2001). *Leadership matters: Building leadership capacity.* Atlanta, GA: Southern Regional Education Board. (ERIC Document Reproduction Services No. ED464391).

Barnett, B. G., Caffarela, R. S., Daresh, J. C., King, R. A., Nicholson, T. H., & Whitaker, K. S. (1992). A new slant on leadership preparation. *Educational Leadership , 49* (5), 72-75.

Barr, R. D., & Parrett, W. H. (2007). *The kids left behind: Catching up the underachieving children of poverty. A synthesis of research on what works in high-performing, high-poverty schools.* USA: Solution Tree.

Barth, R. S. (2006). Improving relationships within the schoolhouse. *Educational Leadership , "The Best of Educational Leadership 2005-2006"*, 29-33.

Beck, L. G. (1996). Why ethics? Why now? *The School Administrator , 54* (9), 8-11.

Bensimon, E. M., Neumann, A., & Birnbaum, R. (1989). *Making sense of administrative leadership: The 'L' word in higher education.* The George Washington University, School of Education and Human Development. Washington DC: ASHE-ERIC.

Berliner, D. C. (2002). Educational research: The hardest science of all. *Educational Researcher , 31* (8), 18-20.

Bloch, D. P. (2005). Complexity, chaos, and nonlinear dynamics: A new perspective on career development theory. *The Career Development Quarterly , 53* (3), 194-207.

Bloch, D. P. (2008). Complexity, connections, and soul-work. *Catholic Education: A Journal of Inquiry and Practice , 11* (4), 543-554.

Bloch, D. P. (2004). Spirituality, complexity, and career counseling. *Professional School Counseling , 7* (5), 343-350.

Bolman, L., & Deal, T. (1997). *Reframing organizations: Artistry, choice, and leadership.* San Francisco: Jossey-Bass.

Bonner, P. J. (2006). Transformation of teacher attitude and approach to math instruction through collaborative action research. *Teacher Education Quarterly , 33* (3), 27-44.

Bower, D. F. (2006, September). *Sustaining school improvement.* Retrieved October 5, 2007, from Complicity: An International Journal of Complexity and Education: http://www.complexityandeducation.ualberta.ca

Brady, R. C. (2003). *Can failing schools be fixed?* The Thomas B. Fordham Institute. (ERIC Document Reproduction Service No. ED498798).

Bridges, E. M., & Hallinger, P. (1997). Using problem-based learning to prepare educational leaders. *Peabody Journal of Education , 72* (2), 131-146.

Brighton, C. M. (2003). The effects of middle school teachers' beliefs on classroom practices. *Journal for the Education of the Gifted , 27* (2/3), 177-206.

Brinson, D., Kowal, J., & Hassel, B. (2008). *School turnaround. Actions and results.* Lincoln, IL: Public Impact, Academic Development Institute.

Brown, C. P. (2007). Unpacking standards in early childhood education. *Teachers College Record , 109* (3), 635-668.

Brownstein, B. (2001). Collaboration: The foundation of learning in the future. *Education , 122* (2), 240-247.

Bruffee, K. A. (1999). *Collaborative learning: Higher education, interdependence, and the authority of knowledge* (2nd ed.). Baltimore, MD: The John Hopkins University Press.

Calkins, A., Guenther, W., Belfiore, G., & Lash, D. (2007). *The turnaround challenge: Why America's best opportunity to dramatically improve student achievement lies in our worst-performing schools.* Boston, MA: Mass Insight Education and Research Institute.

Campbell, E. (2003). Let right be done: Trying to put ethical standards into practice. In P. T. Begley, & O. Johansson (Eds.), *The Ethical Dimensions of School Leadership* (pp. 107-125). Netherlands: Kluwer Academic Publishers.

Carter, S. C. (2000). *No excuses: Lessons from 21 high-performing, high-poverty schools.* Washington DC: The Heritage Foundation.

Cervero, R. M., & Wilson, A. L. (1994). *Planning responsibly for adult education: A guide to negotiating power and interests.* San Francisco: Jossey-Bass.

Chenoweth, K. (2007). *"It's being done": Academic success in unexpected schools.* Cambridge, Massachusetts: Harvard Education Press.

Chou, C. (2002). Developing the e-Delphi system: A web-based forecasting tool for educational research. *British Journal of Educational Technology , 33* (2), 233-236.

Chu Clewell, B., & Campbell, P. B. (2007). *Good schools in poor neighborhoods.* Washington DC: The Urban Institute Press.

Church, S. (2005). *The principal difference: Key issues in school leadership and how to deal with them successfully.* Ontario: Pembroke Publishers Limited.

Claitor, D. (2003). Breaking through: To escape poverty, individuals must understand the hidden rules of class, says Ruby Payne--and she's showing teachers and employers how to help them. *Hope , 2003* (September/October).

Clayton, M. J. (1997). Delphi: A technique to harness expert opinion for critical decision-making tasks in education. *Educational Psychology , 17* (4), 373-386.

Cohen, D. K., & Ball, D. L. (1999). *Instruction, capacity, and improvement.* University of Pennsylvania. Philadelphia, PA: Consortium for Policy Research in Education.

Coleman, M. R. (2003). Four variables for success. *Gifted Child Today , 26* (1), 22-24.

Cook, S. D., & Yanow, D. (1993). Culture and organizational learning. In M. B. Cohen, & L. S. Sproul (Eds.), *Organizational Learning* (pp. 430-459). Thousand Oaks, CA: Sage.

Cooter, J. R. (2003). Teacher "capacity-building" helps urban children succeed in reading. *The Reading Teacher , 57* (2), 198-205.

Copland, M. A. (2003). Leadership of inquiry: Building and sustaining capacity for school improvement. *Educational Evaluation and Policy Analysis , 25* (4), 375-395.

Corning, P. A. (2002). The re-emergence of 'emergence': A venerable concept in search of a theory. *Complexity , 7* (6), 18-30.

Daggett, W. R. (2005). *Successful schools: From research to action plans.* International Center for Leadership in Education.

Danielson, C. (2002). *Enhancing student achievement: A framework for school improvement.* Alexandria, VA: ASCD.

Daresh, J. C. (1985). Platform building: A tool for managerial effectiveness. *School Business Affairs , 51* (4), 52-55.

Darling-Hammond, L. (2006). Securing the right to learn: Policy and practice for powerful teaching and learning. *Educational Researcher , 35* (7), 13-24.

Davis, B., & Simmt, E. (2006). Mathematics-for-teaching: An ongoing investigation of the mathematics that teachers (need to) know. *Educational Studies in Mathematics , 61* (3), 293-319.

Davis, B., & Sumara, D. (2001). Learning communities: Understanding the workplace as a complex system. *New Directions for Adult and Continuing Education* (92), 85-95.

Davis, B., Phelps, R., & Wells, K. (2004, December). *Complicity: An introduction and a welcome.* Retrieved October 12, 2007, from Complicity: An International Journal of Complexity and Education: http://www.complexityandeducation.ualberta.ca

Davis, J. R. (2003). *Change: Moving forward gracefully.* Westport, CT: American Council on Education and Praeger Publishers.

De Laat, M., & Lally, V. (2003). Complexity, theory and praxis: Researching collaborative learning and tutoring processes in a networked learning community. *Instructional Science, 31* (1/2), 7-39.

De Wolf, T., & Holvoet, T. (2005). Emergence versus self-organisation: Different concepts but promising when combined. In *Engineering self-organising systems* (pp. 1-15). Springer Berlin/Heidelberg.

Dean, C. B., Galvin, M., & Parsley, D. (2005). *Noteworthy perspectives: Success in sight.* Denver, CO: McRel.

Delpit, L. (2003). Educators as "seed people" growing a new future. *Educational Researcher , 7* (32), 14-21.

Donaldson, G. A. (2001). *Cultivating leadership in schools: Connecting people, purpose, and practice.* New York: Teachers College Press.

Donaldson, J. F. (1998). The nature and role of the organizational sponsor. In P. S. Cookson (Ed.), *Program planning for the training and continuing education of adults* (pp. 175-206). Melbourne, FL: Krieger Publishing.

DuFour, R., & Eaker, R. (1998). *Professional learning communities at work: Best practices for enhancing student achievement.* Bloomington, IN: National Educational Service.

Duke, D. L. (2007). *Keys to sustaining successful school turnarounds.* University of Virginia: Darden-Curry Partnership for Leaders in Education.

Dumais, S. A. (2005). Children's cultural capital and teachers' assessments of effort and ability: The influence of school sector. *Catholic Education: A Journal of Inquiry and Practice , 8* (4), 418-439.

Eaker, R., DuFour, R., & DuFour, R. (2002). *Getting started: Reculturing schools to become professional learning communities.* Bloomington, IN: National Educational Service.

Eckel, P., Green, Madeleine, M., & Hill, B. (2001). *Riding the waves of change: Insights from transforming institutions.* American Council on Education.

Ervin, R. A., Schaughency, E., Goodman, S. D., McGlinchey, M. T., & Matthews, A. (2006). Merging research and practice agendas to address reading and behavior school-wide. *School Psychology Review , 35* (2), 198-223.

Farmer-Hinton, R. L., & Adams, T. L. (2006). Social capital and college preparation: Exploring the role of counselors in a college prep school for black students. *The Negro Educational Review , 57* (1-2), 101-116.

Fels, L. (2004, December). *Complexity, teacher education and the restless jury: Pedagogical moments of performance.* Retrieved October 5, 2007, from Complicity: An International Journal of Complexity and Education: http://www.complexityandeducation.ualberta.ca

Fincher, S., & Tenenberg, J. (2006). Using theory to inform capacity-building: Bootstrapping communities of practice in computer science education research. *Journal of Engineering Education , 95* (4), 265-277.

Flannery, B., & Vanterpool, M. (1990). A model for infusing cultural diversity concepts across the curriculum. In L. Hilsoni (Ed.), *To improve the academy: Resources for student, faculty, & institutional development. The professional and organizational development network in higher education* (pp. 159-175). Stillwater, OK: New Forums.

Fowler, F. C. (2004). *Policy studies for educational leaders* (2nd ed.). Upper Saddle River, NJ: Pearson Education.

Franklin, K. K., & Hart, J. K. (2007). Idea generation and exploration: Benefits and limitations of the policy Delphi research method. *Innov High Educ , 2007* (31), 237-246.

Fullan, M. (1996). Leadership for change. In K. Leithwood (Ed.), *Internaional Handbook of Educational Leadership and Administration* (p. Chapter 20). London: Kluwer.

Fullan, M. (2006). *Turnaround leadership.* San Francisco, CA: Jossey-Bass.

Fullan, M., & Miles, M. B. (1992). Getting reform right: What works and what doesn't. *Phi Delta Kappan , 73* (10), 745-752.

Gardner, J. W. (2000). The nature of leadership. In *Educational Leadership* (pp. 3-12). San Francisco, CA: Jossey-Bass.

Gehrke, R. S. (2005). Poor schools, poor students, successful teachers. *Kappa Delta Pi Record , 42* (1), 14-17.

Gewertz, C. (2007). 'Turnaround' work needs rethinking, new report says. *Education Week , 27* (12), pp. 1, 16.

Gilstrap, D. L. (2005, December). *Strange attractors and human interaction: Leading complex organizations through the use of metaphors.* Retrieved October 12, 2007, from Complicity: An International Journal of Complexity and Education: http://www.complexityandeducation.ualberta.ca

Goldstein, J. (1999). Emergence as a construct: History and issues. *Emergence , 1* (1), 49-71.

Goldstein, J. (2005). Emergence, creativity, and the logic of following and negating. *The Innovation Journal: The Public Sector Innovation Journal , 10* (3), 1-10.

Goldstein, J. (2001). *Riding the waves of emergence: Leadership innovations in complex systems.* Retrieved January 2, 2009, from Plexus Institute: http://www.plexusinstitute.org/edgeware/archive/THINK/main_filing2.html

Goodwin, R. H. (2002). On the edge of chaos: A Delphi study of the changing role of the secondary principal. *Unpublished doctoral dissertation* . West Virginia University.

Grogan, M. (2003). Laying the groundwork for a reconception of the superintendency from feminist postmodern perspectives. In M. D. Young, & L. Skrla (Eds.), *Reconsidering feminist research in educational leadership* (pp. 9-34). Albany, NY: State University of New York Press.

Guard, R. (2005). Musings on collaboration and vested interest. *The Journal of Academic Librarianship , 31* (2), 89-91.

Gutstein, E. (2007). "And that's just how it starts": Teaching mathematics and developing student agency. *Teachers College Record , 109* (2), 420-448.

Hackman, M. Z., & Johnson, C. E. (2000a). Leadership and power. In *Leadership: A communication perspective* (pp. 129-160). Prospect Heights, IL: Waveland Press, Inc.

Hackman, M. Z., & Johnson, C. E. (2000b). Leadership in groups and teams. In *Leadership: A communication perspective* (pp. 193-223). Prospect Heights, IL: Waveland Press, Inc.

Hallinger, P., & Heck, R. (1999). Understanding the contribution of leadership to school improvement. In e. a. Bush (Ed.), *Educational management: Redefining theory, policy and practice* (pp. 178-190). London: Paul Chapman Publishing.

Hanson, M. (2001). Institutional theory and educational change. *Education Administration Quarterly , 37* (5), 637-661.

Hargreaves, A., & Fink, D. (2006). The ripple effect. *Educational Leadership , The Best of Educational Leadership 2005-2006*, 40-43.

Heifetz, R. (1994). The roots of authority. In *Leadership without easy answers* (p. Chapter 3). Cambridge and London: The Belknap Press of Harvard University Press.

Henig, J. R., Hula, R. C., Orr, M., & Pedescleaux, D. S. (1999). *The color of school reform: Race, politics, and the challenge of urban education.* Princeton, NJ: Princeton University Press.

Herman, R., Dawson, P., Dee, T., Greene, J., Maynard, R., Redding, S., et al. (2008). *Turning around chronically low-performing schools: A practice guide.* Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U. S. Department of Education.

Heylighen, F. (1989). Self-organization, emergence, and the architecture of complexity. *Proceedings of the 1st European conference on system science* (pp. 23-32). Paris: AFCET.

Heylighen, F. (2002). The science of self-organization and adaptivity. In *The encyclopedia of life support systems.* Brussels, Belgium.

Hill-Jackson, V., Sewell, K. L., & Waters, C. (2007). Having our say about multicultural education. *Kappa Delta Pi Record , 43* (4), 174-181.

Hoy, W. K., Tarter, C. J., & Woolfolk Hoy, A. (2006). Academic optimism of schools: A force for student achievement. *American Educational Research Journal , 43* (3), 425-446.

Hsu, C. C., & Sandford, B. A. (2007). The Delphi technique: Making sense of consensus. *Practical Assessment, Research, & Evaluation , 12* (10), 1-8.

Huber, S., Moorman, H., & Pont, B. (2007, December). *School leadership for systemic improvement in England: A case study report for the OECD activity "Improving School*

Leadership". Retrieved January 2, 2009, from Office of Education and Childrens Directorate: http://www.oecd.org/edu/schoolleadership

Ivey, G., & Fisher, D. (2006). Learning from what doesn't work. *Educational Leadership , The Best of Educational Leadership 2005-2006*, 7-12.

Jeynes, W. H. (2005). A meta-analysis of the relation of parent involvement to urban elementary school student academic achievement. *Urban Education , 40* (3), 237-269.

Johnson, J. P., Livingston, M., Schwartz, R. A., & Slate, J. R. (2000). What makes a good elementary school? A critical examination. *The Journal of Educational Research , 93* (6), 339-348.

Julius, D. J., Baldridge, J. V., & Pfeffer, J. (1999). A memo from Machiavelli. *Journal of Higher Education , 70* (2), 113-133.

Katzenbach, J. R., & Smith, D. K. (1993). The discipline of teams. *Harvard Business Review* , 111-120.

Katzenbach, J. R., & Smith, D. K. (2003). *The wisdom of teams.* New York: HarperCollins Publishers.

Kennedy, A., Ridgway, A., & Surman, L. (2006). 'Boundary crossing': Negotiating understanding of early literacy and numeracy. *Australian Journal of Early Childhood , 31* (4), 15-22.

Kenny, C. B. (1998). Embracing complexity: The creation of a comprehensive research culture in music therapy. *The Journal of Music Therapy , 35* (3), 201-217.

Kezar, A. (2000). Pluralistic leadership: Incorporating diverse voices. *Journal of Higher Education , 71* (6), 722-743.

Kezar, A. (2006). Redesigning for collaboration in learning initiatives: An examination of four highly collaborative campuses. *The Journal of Higher Education , 77* (5), 804-838.

Kieren, T. (2005, December). *A perspective on the idea of 'complicity'*. Retrieved October 12, 2007, from Complicity: An International Journal of Complexity and Education: http://www.complexityandeducation.ualberta.ca

Kotter, J. P. (1994). Leading change: Why transformation efforts fail. *Harvard Business Review , 73* (2), 59-67.

Kouzes, J. M., & Posner, B. Z. (2002). Five practices of exemplary leadership. In *The leadership challenge* (pp. 2-39). San Francisco, CA: Jossey-Bass.

Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2007). Piecing together the student success puzzle: Research, propositions, and recommendations. *ASHE Higher Education Report , 32* (5), 1-182.

Lambert, L. (2007). *Fostering leadership capacity for school success: A conversation with Linda Lambert.* Retrieved September 21, 2007, from ASCD: http://www.ascd.org/ascd_express/vol2/225_lambert.aspx

Lambert, L. (2006). Lasting leadership: A study of high leadership capacity schools. *The Educational Forum , 70* (3), 238-254.

Lambert, L. (2003). *Leadership capacity for lasting school improvement.* Association for Curriculum and Development.

Lareau, A. (2000). *Home advantage: Social class and parental intervention in elementary education* (2nd ed.). New York: Rowman & Littlefield Publishers, Inc.

Lareau, A. (2003). *Unequal childhoods: Class, race, and family life.* Los Angeles, CA: University of California Press.

Larson, C. L., & Ovando, C. J. (2001). *The color of bureaucracy: The politics of equity in multicultural school communities.* Belmont, CA: Wadsworth/Thomson Learning.

Lattuca, L. R. (2002). Learning interdisciplinarity: Sociocultural perspectives on academic work. *The Journal of Higher Education , 73* (6), 711-739.

Lee, J. S., & Bowen, N. K. (2006). Parent involvement, cultural capital, and the achievement gap among elementary school children. *American Educational Research Journal , 43* (2), 193-218.

Leithwood, K., & Duke, D. (1999). A century's quest to understand school leadership. In J. Murphy, & K. Seashore-Louis (Eds.), *Handbook of research on educational administration* (2nd ed., pp. 45-72).

Leithwood, K., Jantzi, D., & Steinbach, R. (2000a). Changing leadership: A menu of possibilities. In *Changing leadership for changing times.* Philadelphia, PA: Open University Press.

Leithwood, K., Jantzi, D., & Steinbach, R. (1998). Leadership and other conditions which foster organizational learning in schools. In K. Leithwood, & K. Seashore-Louis (Eds.), *Organizational learning in schools* (pp. 67-90). Lisse: Swets & Zeitlilnger Publishers.

Leithwood, K., Jantzi, D., & Steinbach, R. (2000b). Transformational leadership: Leadership as a place to begin. In *Changing leadership for changing times.* Philadelphia, PA: Open University Press.

Leithwood, K., Seashore-Louis, K., Anderson, S., & Wahlstrom, K. (2004). *How leadership influences student learning.* The Wallace Foundation.

Lencioni, P. (2002). *The five dysfunctions of a team.* San Francisco, CA: Jossey-Bass.

Levin, S. A. (2002). Complex adaptive systems: Exploring the known, the unknown, and the unknowable. *Bulletin (New Series) of the American Mathematical Society , 40* (1), 3-19.

Lezotte, L. W. (1995). *Effective schools: The evolving research and practices.* Retrieved April 18, 2010, from Effective Schools: http://www.effectiveschools.com/main/resources/resources-44-45.html

Lezotte, L. W. (1997). *Learning for All.* Retrieved April 18, 2010, from Effective Schools: http://www.effectiveschools.com/main/resources/resources-44-45.html

Lezotte, L. W. (2001). *Revolutionary and evolutionary: The effective schools movement.* Retrieved April 18, 2010, from Effective Schools: http://www.effectiveschools.com/main/resources/resources-44-45.html

Linstone, H. A., & Turoff, M. (1975/2002). *The Delphi method: Techniques and applications.* Retrieved October 19, 2007, from http://www.is.njit.edu/pubs/delphibook

Lipman-Blumen, J. (2001). Why do we tolerate bad leaders? In W. Bennis, G. M. Spreitzer, & T. G. Cummings (Eds.), *The future of leadership* (pp. 125-139). San Francisco, CA: Jossey-Bass.

Lissack, M. R. (1999). Complexity: The science, its vocabulary, and its relation to organizations. *Emergence , 1* (1), 110-125.

Livingstone, D. W., & Sawchuk, P. H. (2005). Hidden knowledge: Working-class capacity in the 'knowledge-based economy'. *Studies in the Education of Adults , 37* (2), 110-122.

Lopez, O. S. (2007). Classroom diversification: A strategic view of educational productivity. *Review of Educational Research , 77* (1), 28-80.

Louie, B. Y., Drevdahl, D. J., Purdy, J. M., & Stackman, R. W. (2003). Advancing the scholarship of teaching through collaborative self-study. *Journal of Higher Education , 74* (2), 150-171.

Machtinger, H. (2007). What do we know about high poverty schools? Summary of the high poverty schools conference at UNC-Chapel Hill. *The High School Journal , 90* (3), 1-8.

Martin, J. (2002). Pieces of the puzzle: What is culture? What is not culture? In *Organizational culture: Mapping the terrain.* Thousand Oaks, CA: Sage Publications.

Marzano, R. J., Waters, T., & McNulty, B. A. (2005). *School leadership that works: From research to results.* Alexandria, VA: Association for Supervision and Curriculum Development; Mid-continent Research for Education and Learning.

McCombs, B. L., & Whistler, J. S. (1997). *The learner centered classroom and school: Strategies for increasing student motivation and achievement.* San Francisco, CA: Jossey-Bass.

McTighe, J., & O'Connor, K. (2006). Seven practices for effective learning. *Educational Leadership , The Best of Educational Leadership 2005-2006*, 13-19.

Mendez-Morse, S. (2003). Chicana feminism and educational leadership. In M. D. Young, & L. Skrla (Eds.), *Reconsidering feminist research in educational leadership* (pp. 161-177). Albany, NY: State University of New York Press.

Miles, K. H., Odden, A., Fermanich, M., & Archibald, S. (2004). Inside the black box of school district spending on professional development: Lessons from five urban districts. *Journal of Educational Finance , 30* (1), 1-26.

Millette, W. R., & Fisher, R. (2001). Transforming communities: Students dialoguing across racial and ethnic boundaries. In C. L. Outcalt, S. H. Faris, & K. N. McMahon (Eds.), *Developing non-hierarchical leadership on campus* (pp. 202-210). Westport, CT: Greenwood Press.

Mills, M. R., & Hyle, A. E. (2001). No rookies on rookies: Compliance and opportunism in policy implementation. *The Journal of Higher Education , 72* (4), 453-477.

Missouri Department of Elementary and Secondary Education. (2008). *Recruitment and retention of teachers in Missouri public schools: A report to the Missouri General Assembly.* Jefferson City, MO: DESE.

Missouri State Board of Education. (2006). *2005-2006 Report of the Public Schools of Missouri.* Jefferson City, MO: Missouri State Board of Education.

Morgan, G. (1997). *Images of organization.* Thousand Oaks, CA: Sage Publications.

Mulford, B., & Moreno, J. M. (2006). Sinking ships, emerging leadership: A true story of sustainability (or the lack thereof). *The Educational Forum , 70* (3), 204-214.

Musial, D. (1999). Schools as social-capital networks: A new vision for reform. *The Educational Forum , 63* (2), 113-120.

Nasir, N. S., & Hand, V. M. (2006). Exploring sociocultural perspectives on race, culture, and learning. *Review of Educational Research , 76* (4), 449-475.

Nesbit, T. (2006). What's the matter with social class? *Adult Education Quarterly , 56* (3), 1710-187.

Noddings, N. (2006). What does it mean to educate the whole child? *Educational Leadership , The Best of Educational Leadership 2005-2006*, 2-6.

Noguera, P. A. (2004). Racial isolation, poverty, and the limits of local control in Oakland. *Teachers College Record , 106* (11), 2146-2170.

Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company.* New York: The Oxford University Press.

O'Day, J., Goertz, M. E., & Floden, R. E. (1995). *Building capacity for education reform.* University of Pennsylvania. Philadelphia, PA: Consortium for Policy Research in Education.

Ogawa, R., & Bossert, S. (1995). Leadership as an organizational quality. *Educational Administration Quarterly , 31*, 224-243.

Oldroyd, D., & Hall, V. (1997). Identifying needs and priorities in professional development. In L. Kydd, M. Crawford, & C. Riches (Eds.), *Professional development for educational management* (pp. 130-147). Bristol, PA: Open University Press.

Osberg, D. (2005, December). *Redescribing 'education' in complex terms.* Retrieved October 12, 2007, from Complicity: An International Journal of Complexity and Education: http://www.complexityandeducation.ualberta.ca

Ouston, J. (1999). School effectiveness and school improvement: Critique of a movement. In e. a. Bush (Ed.), *Educational management: Redefining theory, policy and practice* (pp. 166-177). London: Paul Chapman Publishing.

Parents Reaching Out. (2006). Family involvement: Building community partnerships. *Parents Reaching Out Handbook* . Albuquerque, NM.

Patterson, D., & Rolheiser, C. (2004). Creating a culture of change: Ten strategies for developing an ethic of teamwork. *National Staff Development Council , 25* (2), 1-4.

Patton, M. Q. (1997). *Utilization-focused evaluation: The new century text.* Thousand Oaks, CA: Sage.

Paul, J. L., & Marfo, K. (2001). Preparation of educational researchers in philosophical foundations of inquiry. *Review of Educational Research , 71* (4), 525-547.

Payne, R. K. (2001). *A framework for understanding poverty.* aha! Process, Inc, USA.

Peterson, M. F., & Smith, P. B. (2000). Sources of meaning, organizations, and culture: Making sense of organizational events. In N. M. Ashkanasy, C. P. Wilderom, & M. F. Peterson (Eds.), *Handbook of organizational culture & climate* (pp. 101-115). Thousand Oaks, CA: Sage Publications, Inc.

Phelan, A. M. (2004, December). *Rationalism, complexity science and curriculum. A cautionary tale.* Retrieved October 5, 2007, from Complicity: An International Journal of Complexity and Education: http://www.complexityandeducation.ualberta.ca

Placier, M., Hall, P. M., Benson-McKendall, S., & Cockrell, K. S. (2000). Policy as the transformation of intentions: Making multicultural education policy. *Educational Policy , 14* (2), 259-289.

Plsek, P., Lindberg, C., & Zimmerman, B. (1997). *Some emerging principles for managing in complex adaptive systems.* Retrieved January 2, 2009, from Plexus Institute: http://www.plexusinstitute.org/edgeware/archive/THINK/main_filing1.html

Portes, P. R. (2005). The problem of inequality and educational reforms to reduce it [Review of the book No excuses: Closing the racial gap in learning]. *Educational Studies , 37* (2), 171-180.

Powell, S. R., & Ross, M. R. (2003). Building capacity from within: Changing the adult working environment in our schools. In M. J. Elias, H. Arnold, & C. S. Hussey (Eds.), *EQ+IQ=Best leadership practices for caring and successful schools* (pp. 89-99). Thousand Oaks, CA: Corwin Press.

Prensky, M. (2006). Listen to the natives. *Educational Leadership , The Best of Educational Leadership 2005-2006*, 20-23.

Preskill, H., & Torres, R. (1999). *Evaluative inquiry for learning in organizations.* Thousand Oaks, CA: Sage.

Public Agenda. (2007). *A mission of the heart: What does it take to transform a school?* The Wallace Foundation.

Rafaeli, A., & Worline, M. (2000). Symbols in organizational culture. In N. M. Ashkanasy, C. P. Wilderom, & M. F. Peterson (Eds.), *Handbook of organizational culture & climate* (pp. 71-84). Thousand Oaks, CA: Sage Publications, Inc.

Reeves, D. B. (2007). How do you sustain excellence? *Educational Leadership , 65* (3), 86-87.

Renzulli, J. S., Koehler, J. L., & Fogarty, E. A. (2006). Operation Houndstooth intervention theory: Social capital in today's schools. *Gifted Child Today , 29* (1), 14-24.

Romo, J., & Chavez, C. (2006). Border pedagogy: A study of preservice teacher transformation. *The Educational Forum , 70* (2), 142-153.

Rowe, G., & Wright, G. (1999). The Delphi technique as a forecasting tool: Issues and analysis. *International Journal of Forecasting , 15*, 353-375.

Rowland, G. (2007a). Performance improvement assuming complexity. *Performance Improvement Quarterly , 20* (2), 117-136.

Rowland, G. (2007b). The challenge of new science: A primer on complexity. *Performance Improvement Quarterly , 20* (2), 9-20.

Rury, J. L. (2005). *Education and social change.* Mahway, NJ: Lawrence Erlbaum Associates, Publishers.

San Antonio, D. M. (2006). Broadening the world of early adolescents. *Educational Leadership , The Best of Educational Leadership 2005-2006*, 35-39.

Sawler, J. (2007). A classroom demonstration for teaching network effects. *Journal of Economic Education , 38* (2), 153-159.

Schaughency, E., & Ervin, R. (2006). Building capacity to implement and sustain effective practices to better serve children. *School Psychology Review , 35* (2), 155-166.

Schechter, C., & Tischler, L. (2007). Organizational leraning mechanisms and leadership succession: Key elements of planned school change. *Educational Planning , 16* (2), 1-7.

Schein, E. H. (2000). Sense and nonsense about culture and climate. In N. M. Ashkanasy, C. P. Wilderom, & M. F. Peterson (Eds.), *Handbook of Organizational Culture & Climate* (pp. xxiii-xxx). Thousand Oaks, CA: Sage Publications.

Schemo, J. D. (2007, October 16). Failing schools strain to meet U. S. standard. *The New York Times* .

Schlechty, P. C. (2000). Leading a school system through change: Key steps for moving forward. In *Educational Leadership* (pp. 182-201). San Francisco, CA: Jossey-Bass.

Schutz, A. (2006). Home is a prison in the global city: The tragic failure of school-based community engagement strategies. *Review of Educational Research , 76* (4), 691-743.

Scribner, J. P., & Donaldson, J. F. (2001). The dynamics of group learning in a cohort: From nonlinear to transformative learning. *Educational Administration Quarterly , 37* (5), 605-636.

Scribner, J. P., Sawyer, R. K., Watson, S. T., & Myers, S. L. (2007). Teacher team and distributed leadership: A study of group discourse and collaboration. *Educational Aministration Quarterly , 43* (1), 67-100.

Seiler, G., & Elmesky, R. (2007). The role of communal practices in the generation of capital and emotional energy among urban African American students in science classrooms. *Teachers College Record , 109* (2), 391-419.

Semetsky, I. (2005, December). *Not by breadth alone: Imagining a self-organised classroom.* Retrieved October 5, 2007, from Complicity: An International Journal of Complexity and Education: http://www.complexityandeducation.ualberta.ca

Sergiovanni, T. J. (2000). *The lifeworld of leadership: Creating culture, community, and personal meaning in our schools.* San Francisco, CA: Jossey-Bass.

Sergiovanni, T. J., & Starrat, R. J. (1983). The supervisor's educational platform. In *Supervision: Human perspectives.* New York: McGraw-Hill.

Shakeshaft, C., Nowell, I., & Perry, A. (2000). Gender and supervision. In *Educational Leadership* (pp. 257-266). San Francisco, CA: Jossey-Bass.

Shannon, G. S., & Bylsma, P. (2007). *The nine characteristics of high-performing schools: A research-based resource for schools and districts to assist with improving student learning. (2nd Ed.).* Olylmpia, WA: OSPI.

Skrla, L. (2003). In our mother's voice: A native woman's knowing of leadership. In *Reconsidering feminist research in educational leadership* (pp. 243-345). Albany, NY: State University of New York Press.

Skulmoski, G. J., Hartman, F. T., & Krahn, J. (2007). The Delphi method for graduate research. *Journal of Information Technology Education , 6*, 1-21.

Soder, R. (2001). *The language of leadership.* San Francisco, CA: Jossey-Bass.

Sparks, D. (2003). Change agent [Interview with Michael Fullan]. *National Staff Development Council , 24* (1), 55-58.

Stacey, R. D. (1996). *Complexity and creativity in organizations.* San Francisco, CA: Berett-Koehler Publishers.

Starratt, R. J. (2005). Responsible leadership. *The Educational Forum , 69* (2), 124-133.

Stein, R. B., & Short, P. M. (2001). Collaboration in delivering higher education programs: Barriers and challenges. *The Review of Higher Education , 24* (4), 417-435.

Stinson, D. W. (2006). African American male adolescents, schooling (and mathematics): Deficiency, rejection, and achievement. *Review of Educational Research , 76* (4), 477-506.

Stuart, C. A. (1998). Care and concern: An ethical journey in participatory action research. *Canadian Journal of Counseling , 32* (4), 298-314.

Swartz, D. (1997). *Culture and power: The sociology of Pierre Bourdieu.* Chicago, IL: The University of Chicago Press.

Swick, K. J. (2001). Service-learning in teacher education: Building learning communities. *The Clearing House , 74* (5), 261-264.

The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. (1979, April 18). *The Belmont report: Ethical principles and guidelines for the protection of human subjects research.* Retrieved January 10, 2004, from Office of Human Subjects Research: http://ohrp.osophs.dhhs.gov/humansubjects/guidance/belmont.htm

Thomas B. Fordham Foundation. (2003). *Better leaders for America's schools: A manifesto.*

Tierney, W. G. (1988). Organizational culture in higher education: Defining the essentials. *Journal of Higher Education , 59* (1), 2-21.

Turoff, M., & Hiltz, S. R. (1996). *Computer based Delphi processes.* Retrieved October 19, 2007, from http://web.njit.edu/~turoff/Papers/delphi3.html

U. S. Department of Education. (1998). *Turning around low-performing schools: A guide for state and local leaders.* Washington DC: U. S. Department of Education.

Verstegen, D. A. (2006). Savage inequalities revisted: Adequacy, equity, and state high court decisions. *Educational Studies , 40* (1), 60-76.

Waldrop, M. M. (1992). *Complexity: The emerging science at the edge of order and chaos.* New York: Simon & Schuster.

Walk, R. (1998, November 4). Strategies for fixing failing public schools. *Education Week* .

Wat-Aksorn, P. (1999). Pedagogical factors and considerations that should be included in the decision-making process for delivery of an EFL/ESL program through distance education in Thailand: A Delphi study. Unpublished doctoral dissertation: University of Missouri.

Watkins, B. J., & Tisdell, E. J. (2006). Negotiating the labyrinth from margin to center: Adult degree program administrators as program planners within higher education institutions. *Adult Education Quarterly , 56* (2), 134-159.

Watson, S. T., & Scribner, J. P. (2007). Beyond distributed leadership: Collaboration, interaction, and emergent reciprocal influence. *Journal of School Leadership , 17* (4), 443-468.

Watson, S. T., & Scribner, J. P. (2005). Emergent reciprocal influence: Toward a framework for understanding the distribution of leadership within collaborative school activity. In D. C. Thompson, & F. E. Crampton (Ed.), *Democracy in educaitonal leadership: The unfinished journey toward justice* (pp. 1-48). Nashville: University Council for Educational Administration.

Weatherley, R., & Lipsky, M. (1977). Street-level bureaucrats and institutional innovation: Implementing special-education reform. *Harvard Educational Review , 47* (2), 171-197.

Weick, K. E. (1991). The nontraditional quality of organizational learning. *Organizational Science , 2* (1), 116-124.

Weiner, L. (2006). *Challenging deficit thinking: Urban teachers must question unspoken assumptions about the sources of their students' struggles.* Retrieved October 18, 2007, from ASCD Express: http://www.ascd.org

West, J. (2008). *Teams: Harnessing the driving force of school turnaround.* University of Virginia: Darden Business Publishing.

Wheatley, M. (1998). A simpler way: Playing with life's boundless creativity. *Momentum , 29* (4), 26-28.

Wheatley, M. (2005). *How is your leadership changing?* Retrieved February 12, 2009, from The Berkana Institute: http://www.margaretwheatley.com

Wheatley, M. (2006a). *Leadership and the new science: Discovering order in a chaotic world* (3rd ed.). San Francisco: Berrett-Koehler Publishers, Inc.

Wheatley, M. (2006b). *Leadership of self-organized networks: Lessons from the war on terror*. Retrieved February 12, 2009, from The Berkana Institute: http://www.margaretwheatley.com

Wheatley, M. (2002a). Spirituality in turbulent times. *School Administrator , 59* (8), 42-46.

Wheatley, M. (2007). *The unplanned organization: Learning from nature's emergent creativity*. Retrieved February 12, 2009, from The Berkana Institute: http://www.margaretwheatley.com

Wheatley, M. (2002b). *When change is out of our control*. Retrieved February 12, 2009, from The Berkana Institute: http://www.margaretwheatley.com

Wheatley, M., & Crinean, G. (2004). *Solving, not attacking, complex problems: a five-state approach based on an ancient practice*. Retrieved February 12, 2009, from The Berkana Institute: http://www.margaretwheatley.com

Wheatley, M., & Frieze, D. (2007). Beyond networking: How large-scale change really happens. *School Administrator , 64* (4), 35-38.

Wheatley, M., & Frieze, D. (2006a). *How large-scale change really happens--working with emergence.* Retrieved February 12, 2009, from The Berkana Institute: http://www.margaretwheatley.com

Wheatley, M., & Frieze, D. (2006b). *Using emergence to take social innovation to scale.* Retrieved February 12, 2009, from The Berkana Institute: http://www.margaretwheatley.com

Wheatley, M., & Kellner-Rogers, M. (1996). *The irresistible future of organizing*. Retrieved February 12, 2009, from The Berkana Institute: http://www.margaretwheatley.com

Whetten, D. A., & Cameron, K. S. (1985). Administrative effectiveness in higher education. *Review of Higher Education , 9* (1), 35-49.

Wilhelm, W. J. (2001). Alchemy of the oracle: The Delphi technique. *The Delta Pi Epsilon Journal , 43* (1), 6-26.

Willower, D. J., & Licata, J. W. (1997). *Values and valuation in the practice of educational administration.* Thousand Oaks, CA: Corwin Press.

Young, M. D. (2003). Considering (irreconcilable?) contradictions in cross-group feminist research. In M. D. Young, & L. Skrla (Eds.), *Reconsidering feminist research in educational leadership* (pp. 35-79). Albany, NY: State University of New York Press.

Yousuf, M. I. (2007a). The Delphi technique. *Essays in Education , 20* (Spring), 80-89.

Yousuf, M. I. (2007b). Using experts' opinions through Delphi technique. *Practical Assessment Research & Evaluation , 12* (4), 1-8.

Yukl, G. (2002). *Leadership in Organizations.* Upper Saddle River, NJ: Prentice Hall.

Zacharakis, J., & Flora, J. (2005). Riverside: A case study of social capital and cultural reproduction and their relationship to leadership development. *Adult Education Quarterly, 55* (4), 288-307.

APPENDIXES

Appendix A

Glossary of Key Terms and Phrases

Archetype

A metaparadigm, macropattern, framework, or theme. In complex adaptive systems, an archetype is the bounded instability of an attractor, or "potential [or desired] state of behavior, a disposition" (Stacey, 1996, p. 54; Church, 2005; Waldrop, 1992).

Capacity

"Within the context of systemic reform, capacity is the ability of the education system to help all students meet more challenging standards" (O'Day, Goertz, & Floden, 1995). Fullan describes a system's capacity as partially dependent on its ability to gain material and conceptual resources (Marzano, Waters, & McNulty, 2005).

Capital

Assets or resources that can be exchanged for other assets and resources (Barr & Parrett, 2007; Cohen & Ball, 1999). All forms of capital are resources "that can be drawn on for social advancement" (Rury, 2005, p. 13).

Cultural. "Culture can be thought of as a set of behavioral characteristics or traits that are typical of a social group" (Rury, 2005, p. 9).The cultural resources imparted to students become capital "when they function as a 'social relation of power' by becoming objects of struggle as valued resources" (Swartz, 1997, p. 43); rules of behavior developed by an individual's life experiences that can be interpreted as a form of feedback from the environment. Cultural capital, within the school setting, is the embodiment of the previous experience and learning of a community of people and influences how students accumulate, exchange, and utilize resources they gain from the

school (Cohen & Ball, 1999; Stacey, 1996; Swartz, 1997). Cultural capital is a resource used to gain or maintain power and privilege (Dumais, 2005).

Social. The benefit derived from social networks and organizations, including relationships within family and community, that generate trust and schema to increase the capacity for collaboration (Dumais, 2005; Farmer-Hinton & Adams, 2006; Lee & Bowen, 2006; Rury, 2005; Zacharakis & Flora, 2005).

Sociocultural. Cultural meanings "carried across generations…and created and recreated in local contexts" to mediate "human activity and thought" (Nasir & Hand, 2006, p. 458).

Chaos Theory

Chaos theory is defined by nonlinear, chaotic systems, homogeneous in nature, moving toward strange attractors (Gilstrap, 2005).

Complex Adaptive System

Complex adaptive systems have many parts cooperating and competing. All the systems and agents working together, coadapting and coevolving, actually account for what is happing on local and global scales (Stacey, 1996). Structure cannot be permanent because agents reorganize themselves in response to internal and external stimuli so that renewal is continual (Fels, 2004). Complex adaptive systems are defined by a critical point between high and low order parameters where strange (or chaos) attractors emerge that are paradoxically stable and unstable at the same time (Stacey, 1996). Complex adaptive systems contain both order and disorder resulting in energy crossing boundaries with the external environment where negotiation can cause a split, a bifurcation point, making renewal or emergence to a more complex level possible. In other words, complex systems

hold the potential for transformation (Gilstrap, 2005). In complex adaptive systems such as education, the organism or entity continually evolves becoming increasingly more complex, or "ratcheting up" its complexity based on previous states it has existed in to make successive generations a better fit with the environment. Complex adaptive systems involve so many interacting entities prediction is rendered impossible in the long-term (Stacey, 1996; Waldrop, 1992).

Complexity Science

Complexity science seeks to understand how nonlinear learning systems self-organize, sustain, and co-adapt to and within their environment (Bloch, 2005; Davis & Simmt, 2006; Levin, 2002).

Cultural Reproduction

"Cultural reproduction can be defined as the complex ideological and cultural processes that reproduce social forms such as racism, gender bias, authority structures, attitudes, values, and norms" (Zacharakis & Flora, 2005, p. 293). This reproduction of social schema occurs "across generational boundaries" (Lattuca, 2002, p. 714).

Planned Enculturation. Osberg (2005) described cultural reproduction in complex terms as "planned enculturation." Planned enculturation is a semi-conscious, or completely conscious in some instances, effort of the dominant culture to maintain dominance. The marginalized population goes on unknowingly or without knowledge of how to overcome the systems created for them by the dominant population.

Delphi Method

A research technique based on the collective, iterative opinions of a panel of experts, the Delphi was developed for the purpose of "structuring a group communication process so

that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem" (Linstone & Turoff, 1975/2002, p. 5) and has been applied in education to generate theory and forecast changes in practice (Clayton, 1997; Wilhelm, 2001).

Emergence

Emergence can be understood as "building blocks at one level combining into new building blocks at a higher level….[where] the whole is greater than the sum of its parts" (Waldrop, 1992, pp. 169, 288). Through cooperation and competition, "by constantly seeking mutual accommodation and self-consistency, groups of agents manage to transcend themselves and become something more" (p. 289). Therefore, emergent "global patterns cannot be reduced to individual behavior" (Stacey, 1996, p. 287).

Emergent Leadership

Emergent leadership is informal leadership within an organization created by the need to survive and grow in the face of change and distributed across social networks to capture diverse skill sets and knowledge (Watson & Scribner, 2005; Watson & Scribner, 2007; Wheatley, 2006a).

High-Performing, High-Poverty School (HP2S)

HP2S' "foundational building block [is] an organized, comprehensive capacity to collect, analyze, and monitor data" (Barr & Parrett, 2007, p. 165). HP2S have demonstrated, both before and after the inception of NCLB, that marginalized students, often characterized as hard or impossible to teach, can achieve at high levels (Chenoweth, 2007). HP2S do not focus on a narrow curriculum, but teach art, music, PE, science, history, have field trips, and conduct other myriad activities beyond teaching to the test. Principals have had to

begin to look beyond SES for school-level characteristics that affect achievement (Chenoweth, 2007; Hoy, Tarter, & Woolfolk Hoy, 2006; Reeves, 2007). Increased achievement, decreased drop-out rates, and college attendance for marginalized populations seem to depend on a collaborative school-community environment, relationships between agents, high-expectations, attention to school structures and sociocultural capital, and efforts to build capacity within the school community including leadership capacity (Darling-Hammond, 2006; Fullan, 2006; Mulford & Moreno, 2006; Stinson, 2006). Chenoweth (2007) identified HP2S with the following criteria: 1. A significant population of children living in poverty and/or a significant population of children of color; 2. Either very high rates of achievement or a very rapid improvement trajectory; 3. Relatively small gaps in student achievement in comparison with achievement gaps statewide; 4. At least two years' worth of data; 5. In the case of high schools, high graduation rates and higher-than-state-average promoting power index; 6. Adequate Yearly Progress; 7. Open enrollment for neighborhood children—that is, no magnet schools, no exam schools, no charter schools.

Marginalized

Throughout U. S. history, poor and minority individuals have been pushed to the edges of mainstream society, or "marginalized" (Barr & Parrett, 2007).

Order Parameters

A concept introduced by German physicist Hermann Haken in 1981, order parameters govern the emergence of phenomenon at the global level from complex systems (Goldstein, 1999). They are variables introduced as energy into the system causing bifurcations, or changes in the self-ordering process. As more are introduced, the number

of possible configurations the system could move towards increases distancing the system further from equilibrium and opening the system up to positive feedback (Heylighen, 2002; Waldrop, 1992).

Punctuated Renewal

Equilibrium has to be redefined for complex adaptive systems to mean a state of tension as opposed to a state of rest (Waldrop, 1992). The science of complexity looks at systems as moving through phases of equilibrium and renewal as punctuated equilibrium, but as existing in the phase transition where renewal occurs is more desirable to a complex adaptive system to ensure maximal growth and survivability, successful schools seemingly experiencing punctuated renewal (Brady, 2003).

Schema

Schema consists of both shared system and individual rules simultaneously. Schema is related to cultural capital in that they are rules of behavior developed by an individual's life experiences. Organizational schema is made up of dominant schema and recessive schema. Change occurs in the recessive schema not required for day to day tasks which the dominant schema controls (Stacey, 1996).

Dominant. The legitimate network in an organization plans enculturation and avoids surprises by using the dominant schema to control interactions keeping them linear (uniform, conformed, repetitive) resulting in proportional response to stimuli, balanced input/output, and in the end, the system equals the sum of its parts (Stacey, 1996).

Recessive. The recessive schema "comprises all social and political interactions that are outside the rules strictly prescribed by the legitimate system" (Stacey, 1996, p. 290).

Appendix B

Invitation to Participate and Summary of Proposed Research Study

Dear Outstanding Missouri Principal:

My name is Kevin Goddard. I am a doctoral student at the University of Missouri and an administrator in a Missouri school district. For my dissertation, I am studying high performing, high poverty school leadership practices in the state of Missouri and your school building has been identified as one of the top 20 performing high poverty schools in the state as determined by free and reduced lunch count, county poverty rates, MAP index averages last year, the number of times your school has appeared in the Top 10 MAP schools over the last eight years and other state accolades. Congratulations on this outstanding accomplishment.

Your participation as an expert principal in this study will help school administrators and state officials better understand common leadership practices in high performing, high poverty schools across Missouri. Insight into practices of other expert principals in the state may help you with your own leadership.

The total length of time from the beginning of the study until the end will be approximately four weeks. The study will begin with your responses to a scenario about being a principal in a high poverty school. The initial scenario will take the most time (about an hour) as you reflect on your own practice and apply it to a fictitious school situation that recreates the conditions many struggling principals face. I will compile the collective responses of the other expert principals (panelists) and group them into common categories represented by a statement. Subsequent rounds will be sent out as a survey for you to rate the statements on leadership as “highly unimportant”, “unimportant”, “highly important”, or “critically important”. You will be asked to re-rate the responses in light of the group response until consensus is reached as to whether the statements are important or unimportant. Additionally, you may choose to login to a secure Blackboard site as an anonymous participant in dialogue about some of the responses that I will post to the site allowing additional clarification and insight to occur.

Please open the attached WORD document and sign and return via fax the informed consent agreement to me as soon as possible. Hopefully, all 20 expert principals I am inviting will respond within a few days and I will be able to email you the open-ended scenario with directions for completing it. I will try to contact you by phone to confirm your participation and answer any questions you may have.

I thank you in advance for sharing the knowledge and beliefs that have led to your success as a principal among an above average population of disadvantaged students. A few hours of your time over the next month may lead to great insight into common practices that lead to better educational opportunities for Missouri’s children.

Sincerely,

Kevin T. Goddard, Doctoral Student
Superintendent

Appendix C

Informed Consent

Consent Form for Research on Educational Leadership Practice

You are invited to take part in research on effective educational leadership practice in high performing, high poverty Missouri schools, directed by Kevin Goddard in the College of Education at the University of Missouri. It is your right to decide whether to participate in this research. This form explains the conditions of participation.

Participation in the research includes:
Round One open-ended scenario requiring about one hour of your time;
Round Two survey organized around themes emerging from Round One (about 20 minutes);
Round Three survey will repeat Round Two to reach further consensus between participants (about 20 minutes);
In between rounds, you may choose to log in to a secure Blackboard site for anonymous dialogue with the other principals participating in the study about responses posted by the researcher.
It is unlikely, but possible, that a fourth round will be necessary (about 20 minutes).

INFORMED CONSENT FOR RESEARCH PARTICIPANTS

- I understand that if I volunteer to participate in this research, Kevin Goddard will send an email to me with a MS WORD attachment containing a leadership scenario for me to write a response and return to Kevin Goddard. Additional rounds will also be conducted via email.
- I understand that in order to minimize the risk posed by lack of confidentiality in the research, my name will not appear on any materials accessible to persons other than the researcher. A code or pseudonym will be used to label the responses you provide.
- I understand that the original data will be accessible only to the researcher and his advisor. When the findings are reported to other audiences, in conference papers or publications, my quotations and my institution will not be identifiable.
- I understand that my participation in the research is voluntary. If I choose to participate, I do not have to answer any question I choose not to. I can withdraw from participating at any time and, if I want, all information that I gave will be destroyed.

Note: The researcher must securely maintain copies of all pertinent information from the study, including copies of this written consent form and all other supportive documents, for a period of three (3) years from the date of completion of the study.

My questions about this research have been answered. If I have any further questions, I am to contact Kevin Goddard (573-226-3251ext301, kgoddard@eminence.echalk.com)

or his advisor, Dr. Peggy Placier (573-882-9643, placierp@missouri.edu) at the University of Missouri.

If I have any concerns about my rights as a research participant, I can call the office at the University of Missouri that approved this study: MU Institutional Review Board, 573-882-9585.

I have read this information and agree to allow Kevin Goddard to perform the procedures referred to above, and to report and publish his findings.
Sign and return via fax to (573)226-3250.
Participant Signature_____
Date_____

Appendix D

Round One Directions

Please print and consider the school scenario described in the WORD attachment. Formulate a narrative response. The guiding questions are provided to help stimulate your thinking, but please do not limit yourself to only responding to t hose questions. You will find it helpful to write your response and come back to it a day or two later and edit or add to it before returning it to me via email. You may type the response directly into an email or you may write it in WORD and attach it to your email.

Once all Round One responses have been received, I will analyze them for emergent themes both common and unique within the group as a whole. Once I have some categories for analysis, I will post anonymous quotes from your responses to a secure Blackboard site to which you will be provided a username and password. If you choose, you may log in to this site and anonymously dialogue with the other participant principals about the responses and further clarify your thoughts on the topic of high performing, high poverty schools. This dialogue would help me further understand the depth of your thinking.

Please return your Round One response to the scenario to me via email by Thursday, October 9, 2008.

Thank you in advance for your willingness to devote your precious time to this important study,

Kevin T. Goddard

Appendix E

Round One: Open-ended Scenario with Guiding Questions

The suburban community of Rocky Falls is a bustling Missouri town sitting along the interstate between two off-ramps within an hour of a major metropolitan area. The town serves as a bedroom community and is home to several light industries, fast food restaurants, and local commerce. Because of past success turning around high-poverty, low-performing schools, you have just been hired as principal of the local elementary school to move the building from low-performing to high-performing.

The previous building principal had been in the building since starting as a new teacher, and just retired with half of those years as the principal. An assistant principal hired into the building four years ago was not appointed the head principal when the position came open even though he applied for the job. The staff is unfamiliar with district or building mission statements, vision statements, values, or goals. The staff knows such statements have been created by administration for state accreditation purposes, but are not interested in them, having had no experience with them in the past.

The school is a K-8 elementary school with a population of 600 and a faculty of 40. The student demographic is 70% free and reduced lunch, a mix of 70% white, 25% African-American, and 5% other minority. Student performance is significantly below the state average in math and reading at all grade levels on the MAP and Terra Nova tests. Parent involvement is minimal with parents occasionally coming to open house events or carnivals, volunteering as room parents, and attending parent-teacher conferences with attendance numbers dropping off as students get above the fourth grade.

Within the teacher population, about 50% have advanced degrees in teaching or administration. About 25% of the teaching staff is within 10 years of retirement. Approximately 25% of the teachers are in their first 7 years of teaching. The teaching staff typically shows up 5 to 15 minutes before school begins and the building is largely empty of teaching staff within 15 minutes after school ends. Teachers join committees when they are "appointed" to them by the principal. Professional development days are spent working in classrooms or attending district planned development. Many teachers attend one day conferences at regional professional development centers or attend specific subject area conferences such as physical education, art, or kindergarten teacher conferences. Teachers are absent frequently with substitutes hard to find because of complaints that students are unruly and teacher lesson plans left for substitutes are inadequate.

The building principals in the past have typically waited for the district administration to hand down directives and mandates before changing building policy or practice. The building's master schedule has not changed significantly in 10 years. The curriculum has not been reviewed since the last state accreditation cycle and has not been significantly revised since it was created close to 15 years ago. In any given classroom, the teacher may or may not be able to locate their curriculum binder and most have not opened it

since they were hired. If asked where they are in the curriculum, they will say they have made it to a certain chapter in the book and will get close to the end of the book by the end of the year.

The faculty does not review student data nor collect its own forms of data to analyze student progress. Students are not involved in building or classroom decisions. State level data shows that as a whole, the 30% of students who are not free and reduced lunch perform at higher levels than their disadvantaged counterparts. Teachers view this as "expected" and cite the parents and the "home situation" as the cause of students' problems.

You should assume that there are no unusual constraints on resources or extenuating circumstances that limit leadership behavior. The district administration and the school board desperately want change in the building and view a principal change as the solution to improving student performance.

Describe the approach you would take to facilitate moving the building from a low-performing school to a high-performing school. Articulate the leadership philosophy and platform, culture, approach to creating a change environment, and other relevant, critical information from your experience as a building principal in Missouri that you would utilize to help this building become high-performing. A rich, in-depth, insightful dialogue will provide a wealth of data to compare with other expert principals' being as they are asked to consider the same situation.

As you formulate your response based on successful practices you are currently using and have used in the past, think about, ***but do not limit yourself to*** the following questions:

In the above scenario, how do you decide which areas in the school need improvement and what processes will help you form and accomplish goals for improvement?

In the scenario, how will you help the school build and sustain a capacity for high student performance?

In the scenario, in what ways will you attend to sociocultural boundaries and relationships between diverse people present in the school and school community and what impact will that have on student performance?

In the scenario, how will you create a professional learning environment for staff and how will that environment operate and sustain?

In the scenario, what resources (both tangible and intangible) might you feed into the school system to help the school renew and become high performing?

Appendix F

82 Statements from Round One

Item	Delphi Statement
1	The principal holds all staff accountable for student performance on the MAP.
2	The principal drives change through increased accountability for student performance on the MAP.
3	The principal expects staff to hold each other accountable for high expectations.
4	The principal considers data analysis a priority for improving student performance.
5	The principal actively guides staff in the analysis of data.
6	The principal requires ongoing assessment of student progress toward the goal of proficiency on the MAP test.
7	The principal aligns building policy, procedure, and practice with the purpose of increasing student performance to achieve proficiency on the MAP test.
8	The principal focuses on the performance of all subgroups included in the school population.
9	The principal promotes the recruitment of a diverse group of students and parents to participate in efforts to increase student performance.
10	The principal promotes dialogue vertically and horizontally across the school building.
11	The principal brings diverse community and building representatives together to collaborate on school issues.
12	The principal acts as an equal during team collaboration to influence student learning.
13	The principal identifies and promotes ways for the school to communicate effectively with diverse groups of parents.
14	The principal disseminates vital information in a transparent, proactive manner.
15	The principal works to help the staff believe they have the ability to improve student performance.
16	The principal focuses staff on that which can be improved (i.e. curriculum, instruction, assessment) as opposed to allowing blame for low performance to be placed on student issues and/or ability.
17	The principal fosters an optimistic environment where teachers believe in student ability.
18	The principal promotes the evaluation of the school culture in order to find areas in need of improvement.
19	The principal seeks ways to instill school pride in the school and community.
20	The principal finds ways to welcome the community into the school.
21	The principal promotes a culture of trust within the school.
22	The principal builds positive relationships with, and among, staff.
23	The principal improves morale by celebrating success.
24	The principal encourages calculated risk-taking within the school.
25	The principal seeks to understand connections between low performance and marginalized populations.

26 The principal works to break the cycle of poor student performance in marginalized (eg, poor/working class/poverty class) populations.
27 The principal recruits everyone's participation in the continual increase in student learning and performance.
28 The principal evaluates the school from a holistic or "big picture" perspective.
29 The principal allows change to emerge over time from the particular context and needs of the school.
30 The principal uses current data to predict the necessary changes to improve student performance during the current year.
31 The principal uses current data and information to predict the necessary changes to improve student performance beyond the current year.
32 The principal relies on the help and knowledge of experts to increase student performance.
33 The principal makes staff aware of research on effective schools.
34 The principal keeps the school and community focused on improving student performance.
35 The principal continually reinforces the mission of the school.
36 The principal develops a vision for the direction of the building.
37 The principal includes everyone in developing a vision for the building.
38 The principal helps staff reflect on the values under which the building is and should be operating.
39 The principal helps establish building and personal goals for improving student performance.
40 The principal promotes a professional learning community within the school.
41 The principal eliminates distractions and obstacles when and wherever possible.
42 The principal deals with resistance effectively.
43 The principal encourages and enables staff to continually reflect on current practices in light of available data.
44 The principal continually evaluates past and present performance of personnel with the purpose of increasing student performance.
45 The principal monitors change and continuously adjusts practice to improve student performance.
46 The principal emphasizes the importance of effectively developing and implementing the curriculum.
47 The principal manages the physical environment/building.
48 The principal deals with employee issues and concerns.
49 The principal monitors teacher duties and responsibilities.
50 The principal handles student issues and concerns.
51 The principal emphasizes classroom management and student engagement.
52 The principal seeks more efficient procedures and processes within the building.
53 The principal maintains a positive environment involving all participants.
54 The principal enforces the policies and procedures of the building and district.
55 The principal makes decisions that move the school in his or her desired direction.
56 The principal manages the structure of the staff in the building.
57 The principal overlaps duties of staff in the building to strengthen outcomes.
58 The principal shares leadership with participants.

59 The principal has a sense of awareness of the boundaries that exist between groups within the school community.
60 The principal facilitates conversations across boundaries within the school community.
61 The principal seeks to increase the number and strength of connections between groups within the network embedded in the school community.
62 The principal seeks buy-in to the direction of the building from all participants.
63 The principal shares ownership of the school with other participants.
64 The principal fosters a sense of belonging to the school with participants.
65 The principal involves all stakeholders in the process of improving student performance.
66 The principal seeks innovative ways to involve parents with the school.
67 The principal uses teambuilding to support efforts to improve student performance.
68 The principal promotes relationship building between staff and students.
69 The principal ensures students receive individual attention from staff.
70 The principal models and encourages a caring atmosphere within the school.
71 The principal shows resolve in his or her efforts to affect student performance.
72 The principal presents certain non-negotiable expectations to staff.
73 The principal expects altruistic behavior from self and staff.
74 The principal provides professional development for staff.
75 The principal provides monetary incentives to staff.
76 The principal provides incentives to students for performance.
77 The principal provides classroom resources for staff.
78 The principal provides time for collaboration among staff.
79 The principal provides support resources for students such as tutoring, transportation, equipment, and materials.
80 The principal conveys a sense of urgency in improving student performance.
81 The principal serves as a catalyst for initiating and sustaining improvement in student performance.
82 The principal challenges the status quo within the school.

Appendix G

Round Two Survey

Dear Expert Principal:
The Round Two survey is included below. Eighty two statements emerged based on your responses to the scenario outlined in Round One. The survey will take approximately 40 minutes to complete. Read each statement as a principal acting in a high poverty school trying to increase student performance. Please rate each statement as a 1, 2, 3, or 4 according to the following scale:
4=Critically Important
3=Important
2=Unimportant
1=Highly Unimportant
The statement will be highlighted in red.

☒4=Critically Important	☒3=Important	☒2=Unimportant	☒1=Highly Unimportant
Participant Comments: Particularly salient panelist responses will be included here and identified by participant number to help clarify the statement that was generated from the scenario and relevant research literature.			
Your Comments:After rating the statement 1-4 in the check boxes above, you may choose to add a comment in this section if you wish to clarify or question the statement or panelist comments. You are not expected to provide a comment in every section.			

1. The principal holds all staff accountable for student performance on the MAP.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

2. The principal drives change through increased accountability for student performance on the MAP.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

3. The principal expects staff to hold each other accountable for high expectations.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for questions 1, 2, 3: 1 No one would be safe from scrutiny 2 The principal should be monitoring [teacher use of curriculum] along with the lesson plans 3 If you don't [continually evaluate, assess and make adjustments], then nothing changes and there is no accountability 4 I would stress to all staff that achievement data and MAP scores are EXTREMELY important 5 It will be made clear; the action plan will be a part of the Performance Based Teacher Evaluation 6 From looking at the data you can see what gle's are not being covered well or the question types that aren't being used in class on a regular basis			

7 Once again it is not about the administrator telling everyone what to do, it is about the team as a whole collectively agreeing and holding each other accountable for those high expectations.
Your Comments:

4. The principal considers data analysis a priority for improving student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

5. The principal actively guides staff in the analysis of data.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments for statements 4, 5: 1 I would evaluate the curriculum, the instructional techniques, and the past assessment procedures of the district 2 The teachers can use this data to improve their teaching practices to prepare students for testing 3 I would provide demographic data that shows all sub groups and the progress or lack of progress over the last five years 4 I would began having bi-monthly grade level meetings where grades and data items are reviewed and discussed 5 The first task at hand is to analyze student data, through crystal reports, to determine trends of low performance (school wide) 6 Analyzing data from past test is something easy to do to make some quick changes to help test scores 7 I would want to analyze the amount of student engagement in the classroom, how the individual needs of all students are being met, discipline procedures (students need to be in the classroom in order to learn) and instructional strategies for the under resourced learners.
Your Comments:

6. The principal requires ongoing assessment of student progress toward the goal of proficiency on the MAP test.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

7. The principal aligns building policy, procedure, and practice with the purpose of increasing student performance to achieve proficiency on the MAP test.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments for statements 6, 7: 1 The assessment coordinator...makes sure each teacher is assessing our students in a way to help each student be successful 2 The principal needs to set some goals for increasing student performance 3 But if we evaluate what we do and why we do it and measure it against student success, we can see real progress 4 I would try to steer the goals toward student achievement without taking over the

entire process 5 Performance breakdown is just the beginning to increasing student performance 6 This would be an opportunity to tutor students who are basic or below to help move them to proficient 7 In these action steps-I would expect for the teachers to develop a way to assess the students learning along they way.
Your Comments:

8. The principal focuses on the performance of all subgroups included in the school population.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

9. The principal promotes the recruitment of a diverse group of students and parents to participate in efforts to increase student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments for statements 8, 9: 2 Begin by offering a variety of activities to meet a diverse interest and offering incentives for parents 3 I would provide demographic data that shows all sub groups and the progress or lack of progress over the last five years 5 The committee needs to be a diverse group and not just the small group of students and parents whom participate most of the time.
Your Comments:

10. The principal promotes dialogue vertically and horizontally across the school building.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

11. The principal brings diverse community and building representatives together to collaborate on school issues.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

12. The principal acts as an equal during team collaboration to influence student learning.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments for statements 10, 11, 12: 1 ...promote dialogue both vertically and horizontally and it reinforces the fact that we are all in this together! 2 The principal needs to have all staff members together discuss the district and building mission statements, vision statements, values, and goals 3 The purpose of this group is to share concerns and information from all constituents as it relates to relevant educational expectations 4 I would do this collaboratively with all partners and stakeholders involved 5 The first action is to get parent, teacher, student, and board member representation

on a team to develop a realistic mission and vision for the school 7 To facilitate change in a school that is struggling, it is no longer about the administrator as the boss, but the administrator as part of a team that collaborates to make sure all students are learning.
Your Comments:

13. The principal identifies and promotes ways for the school to communicate effectively with diverse groups of parents.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

14. The principal disseminates vital information in a transparent, proactive manner.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statements 13, 14: 1 Good parental communication and involvement is also very important in this process 2 Communication means informing parents about the positive and the negative, and always start with positive communication 3 I would require teachers to call parents when progress is not adequate and when a student did a great job 5 A well communicated plan that includes the end result sets the expectation.			
Your Comments:			

15. The principal works to help the staff believe they have the ability to improve student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 15: 1 Through PD, and constant reinforcement from administration, each staff member should realize the important role they provide in helping to set the environment for success 2 My philosophy is that the staff is the backbone of your school 3 As the staff grows in confidence they will evaluate student work, teacher lessons and conduct student assessments, which provides valuable feedback on their own teaching methods and how students learn 7 Once again it is not about the administrator telling everyone what to do, it is about the team as a whole collectively agreeing and holding each other accountable for those high expectations.			
Your Comments:			

16. The principal focuses staff on that which can be improved (i.e. curriculum, instruction, assessment) as opposed to allowing blame for low performance to be placed on student issues and/or ability.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statements 16:			

1 If our students are not successful, it's either a curriculum, instruction, or assessment issue 2 Teachers need to remember that many students have had poor home situations and have become very successful 3 As the new principal, I would go in with a positive attitude, no fault and no blame for past failures of the school 5 Teachers must believe in their job and their students in order to have a successful district 7 We would then look for areas to improve on-what concepts overall did the students not understand.
Your Comments:

17. The principal fosters an optimistic environment where teachers believe in student ability.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 17: 2 If staff members don't feel great about their school, they are not going to be excited about teaching the students...Children will succeed if you believe in them and guide them along the way 5 Teachers must believe in their job and their students in order to have a successful district 7 Take the time to celebrate the good-because we can build off of that.			
Your Comments:			

18. The principal promotes the evaluation of the school culture in order to find areas in need of improvement.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

19. The principal seeks ways to instill school pride in the school and community.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

20. The principal finds ways to welcome the community into the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

21. The principal promotes a culture of trust within the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

22. The principal builds positive relationships with, and among, staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statements 18, 19, 20, 21, 22: 1 I would first of all evaluate the entire educational setting of this school 2 The community will become proud of the school if the school will give to the community by being involved in projects 3 The school belongs to the community and the school needs to be that welcoming			

environment that attracts the entire community 4 Building trust and rapport would be the number one agenda item 5 Building pride in the school can be the biggest attribute to school improvement 7 Culture, Culture, Culture-a leader needs to create a positive culture for the students and the staff.
Your Comments:

23. The principal improves morale by celebrating success.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 23: 2 Students will achieve more if they know that the school cares 3 Every month at faculty meetings...Another teacher or teachers would nominate a teacher that has gone above and beyond regular expectations in support of students or staff 4 The grants would enable me to pay staff well to attend such events that greatly enhances teacher attitude and staff buy-in 5 Teacher morale is the fulcrum in which a school district's direction balances 7 Celebrations would occur for what we are doing right-It is always important to celebrate with our team .			
Your Comments:			

24. The principal encourages calculated risk-taking within the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 24: 7 Let the staff know that it is okay to try new researched based instructional strategies-mistakes are okay. Just like our students need to understand mistakes are okay.			
Your Comments:			

25. The principal seeks to understand connections between low performance and marginalized populations.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 25: 5 With 70% free and reduced, most students will be classified as high-risk.			
Your Comments:			

26. The principal works to break the cycle of poor student performance in marginalized (eg, poor/working class/poverty class) populations.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 26: 3 If this cycle is not broken then students fall further behind become frustrated and can become discipline problems.			
Your Comments:			

27. The principal recruits everyone's participation in the continual increase in student learning and performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 27: 1 ...this is a very organized team effort utilizing everyone's strengths to make sure we are giving our student's the best chance for success 2 It takes everyone working together to make these ideas successful 3 As the staff grows in confidence they will evaluate student work, teacher lessons and conduct student assessments, which provides valuable feedback on their own teaching methods and how students learn.			
Your Comments:			

28. The principal evaluates the school from a holistic or "big picture" perspective.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 28: 1 I would first of all evaluate the entire educational setting of this school 2 The school in your scenario has many areas that need improvement.			
Your Comments:			

29. The principal allows change to emerge over time from the particular context and needs of the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 29: 3 But with change, you must continually evaluate, assess and make adjustments...For this to be effective it will evolve over a three to five year period of time 4 ...our goals...would be long term and a building process 5 Performance is obviously an issue...All stakeholder must realize this is a slow process and miracles will not happen over night 6 It helped them see what was working and allowed them to change things that didn't work as well 7 This change is a process-not something that could happen overnight.			
Your Comments:			

30. The principal uses current data to predict the necessary changes to improve student performance during the current year.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

31. The principal uses current data and information to predict the necessary changes to improve student performance beyond the current year.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statements 30, 31:			

5 The first task at hand is to analyze student data, through crystal reports, to determine trends of low performance (school wide).
Your Comments:

32. The principal relies on the help and knowledge of experts to increase student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 32: 1 immediately put people in positions where they have the greatest ability to be successful 2 Invite professionals to your school to speak to everyone instead of just sending a few staff members to workshops outside the district 3 The experts provide the research, data and rational for changes that are needed, provide guidance and develop the framework for the curriculum 4 I would push for an academic coach to be hired for the district to begin work on curriculum revisions based on MAP/Terra Nova scores and to begin the work of common assessments 5 Title I money will be used for supplemental resources such as: reading and math resources, reading and math coaches, and equipment (i.e. manipulatives, projectors, etc.) 7 I would begin by having the teachers view successful teaching teams and giving them the opportunity to visit other schools that have seen success.			
Your Comments:			

33. The principal makes staff aware of research on effective schools.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 33: 4 Before we did this I would want to do some training on what makes an effective school, thus, trying to get insignificant things like parking spots and lunch schedules off the agenda before we get to work 7 Let the staff know that it is okay to try new researched based instructional strategies-mistakes are okay. Just like our students need to understand mistakes are okay.			
Your Comments:			

34. The principal keeps the school and community focused on improving student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 34: 1 It's very important for everyone to know that our main goal with all of this is the improvement of instruction for OUR students! 2 This school needs to set goals to improve with everyone sharing their ideas...The school should be a professional place where learning and caring are promoted by the entire staff 3 The central focus the principal must keep in the forefront is what is best for			

students 4 I would build on our strengths (maybe experiences teaching staff) while setting up 2-3 manageable goals 5 The principal needs to provide direction to all staff to set parameters and expectations for the day 6 Get the staff Involved in development of the mission statement, vision, values, and goals of the district and the building 7 These four questions would continue to guide a work-so it is not about adding something to do-it is about focusing on the right issue-student learning.
Your Comments:

35. The principal continually reinforces the mission of the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 35: 1 I would evaluate the mission, philosophy, and goals of the district 2 The principal needs to have all staff members together discuss the district and building mission statements, vision statements, values, and goals 5 The first action is to get parent, teacher, student, and board member representation on a team to develop a realistic mission and vision for the school.			
Your Comments:			

36. The principal develops a vision for the direction of the building.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

37. The principal includes everyone in developing a vision for the building.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statements 36, 37: 2 All the staff would need to be participants in forming the new groundwork for school improvement 3 As a new principal taking over the helm, I would have a vision of where Rocky Falls should be academically and professionally over a four to five year period of time 5 The first action is to get parent, teacher, student, and board member representation on a team to develop a realistic mission and vision for the school 7 The entire staff would develop a vision together. This would take input from the staff. Teachers need to have ownership in this vision.			
Your Comments:			

38. The principal helps staff reflect on the values under which the building is and should be operating.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 38: 2 The principal needs to have all staff members together discuss the district and building mission statements, vision statements, values, and goals.			

Your Comments:

39. The principal helps establish building and personal goals for improving student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 39: 1 The second thing I would do, and have done, is to cooperatively set a goal and philosophy with the staff 2 This school needs to set goals to improve with everyone sharing their ideas 4 I would try to work collaboratively with the staff to set up goals 5 Once content and goal process standard have been identified, each teacher will create a classroom action plan to be implemented throughout the year in classrooms 7 This then would lead to the development of our Learning Improvement Plan, (Building Improvement Plan) which would include SMART goals and action steps.			
Your Comments:			

40. The principal promotes a professional learning community within the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 40: 7 The development of Professional Learning Communities is a valuable process in order to facilitate change in a school. .			
Your Comments:			

41. The principal eliminates distractions and obstacles when and wherever possible.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 41: 4 Before we did this I would want to do some training on what makes an effective school, thus, trying to get insignificant things like parking spots and lunch schedules off the agenda before we get to work.			
Your Comments:			

42. The principal deals with resistance effectively.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 42: 1 Sometimes this does not go over well with personnel because they have their "favorite" things to teach 2 Staff members need to feel some ownership in the school and it is evident that it is just a place that they go to work, put in their time, and draw a paycheck 2 Parent involvement can be difficult 3 Obviously, the culture of this school must change and change can be painful 5 Some of the older, nearing retirement teachers will be less than enthusiastic to get involved, as well as some of the parents			

5 Plans and strategies will be met with opposition. Tenured teachers will mostly be resistant to change 5 A portion of the public will be critical of new ideas and programs 6 Find out what staff members you need to work on to get them on board.
Your Comments:

43. The principal encourages and enables staff to continually reflect on current practices in light of available data.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

44. The principal continually evaluates past and present performance of personnel with the purpose of increasing student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

45. The principal monitors change and continuously adjusts practice to improve student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments for statements 43, 44, 45: 1 I would evaluate who the personnel are and what they've previously been asked to do 2 The teachers can use this data to improve their teaching practices to prepare students for testing 3 With ongoing assessment, measurement and evaluation great things can happen 3 But with change, you must continually evaluate, assess and make adjustments 5 Performance breakdown is just the beginning to increasing student performance 6 It helped them see what was working and allowed them to change things that didn't work as well 7 The staff needs to spend time on learning about the other professionals in the building, including their strengths and weaknesses and they "think."
Your Comments:

46. The principal emphasizes the importance of effectively developing and implementing the curriculum.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments for statement 46: 1 I would evaluate the curriculum, the instructional techniques, and the past assessment procedures of the district 2 The teachers should be using their curriculums every week in the classroom 3 There would need to be experts in the field of curriculum development to work with our teachers in developing appropriate age and subject curriculum and the benefits of these guides and resources to them as well as the students 6 I have and would encourage my teachers to develop their own curriculum guide books 7 What do want students to know: Development of a working curriculum and

curriculum maps.
Your Comments:

47. The principal manages the physical environment/building.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

48. The principal deals with employee issues and concerns.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

49. The principal monitors teacher duties and responsibilities.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

50. The principal handles student issues and concerns.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments for statements 47, 48, 49, 50: 1 I've found that if an administrator uses good respected people in these positions, there is very little animosity among the staff depending upon the way the administrator handles items of concern 2 As the leader of a school, the principal should strive for everyone to get on board with this philosophy 5 What is the condition of the facilities? Are classrooms in good repair? Are hallways, bathrooms, teacher workrooms in need of attention? A little paint can give a school a fresh, new look 6 Teachers need to keep their plan books three weeks ahead that way if they are absent we know were they are and keep going with class 7 I would want to analyze the amount of student engagement in the classroom, how the individual needs of all students are being met, discipline procedures (students need to be in the classroom in order to learn) and instructional strategies for the under resourced learners.
Your Comments:

51. The principal emphasizes classroom management and student engagement.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments for statement 51: 3 Professional development in the area of classroom management would be available to all teachers, but specifically we would focus on teachers in their first five years 7 I would want to analyze the amount of student engagement in the classroom, how the individual needs of all students are being met, discipline procedures (students need to be in the classroom in order to learn) and instructional strategies for the under resourced learners.
Your Comments:

52. The principal seeks more efficient procedures and processes within the building.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 52: 1 Personnel has to sit on multiple committees and have more job titles so time has to be planned and utilized more effectively 5 Workdays need to be done as a team and teachers need to be charged with a specific task for the day. Spending the day working in classrooms is a waste of the day in regard to student instruction 6 Teachers need to keep their plan books three weeks ahead that way if they are absent we know were they are and keep going with class 7 The staff would understand that this is no longer a time to take about duties, field trips, or management issues-these teams would focus on these four questions.			
Your Comments:			

53. The principal maintains a positive environment involving all participants.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 53: 1 The custodians can begin to realize that clean learning environments are important to OUR kids 1 Cooks can understand how important good nutritious and friendly meals help kid's mental capacities 1 Bus drivers can have an understanding that a good friendly ride to school can set the tone to some children for the entire day! 3 The school belongs to the community and the school needs to be that welcoming environment that attracts the entire community 5 As Rocky Falls principal I would start by evaluating the environment 7 Once those relationships are formed-we can begin to work on creating an environment of success for the teachers and the students.			
Your Comments:			

54. The principal enforces the policies and procedures of the building and district.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 54: 1 I would evaluate the curriculum, the instructional techniques, and the past assessment procedures of the district 2 The principal is going to have to set some rules about attendance. Arrival and dismissal times should be stated in the faculty handbook and the principal needs to ensure that these rules are followed or take appropriate measures. Teachers should not have the option of leaving inadequate lesson plans. Evidently the teacher does not reprimand their class upon returning about their unruly behavior for a substitute 3 I would hold teachers to the times in the contract, usually to be at school for 30 minutes before and after school 6 Teachers need to keep their plan books three weeks ahead that way if they are absent we know were they are and keep going with class.			

Your Comments:

55. The principal makes decisions that move the school in his or her desired direction.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 55: 7 This leadership team would consist of individuals who I have hand picked to serve as teacher leaders.			
Your Comments:			

56. The principal manages the structure of the staff in the building.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 56: 1 First, in a K-8 setting reality suggests that everyone has to do more than one job 2 My philosophy is that the staff is the backbone of your school.			
Your Comments:			

57. The principal overlaps duties of staff in the building to strengthen outcomes.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 57: 1 First, in a K-8 setting reality suggests that everyone has to do more than one job 2 The counselor should review all the data with the teachers who will relay this information to parents and students 5 This committee may be the CSIP committee or a different group.			
Your Comments:			

58. The principal shares leadership with participants.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 58: 2 All the staff would need to be participants in forming the new groundwork for school improvement 3 With teacher participation in the planning and implementation process, consensus can be achieved 4 I would try to steer the goals toward student achievement without taking over the entire process 5 The first action is to get parent, teacher, student, and board member representation on a team to develop a realistic mission and vision for the school 6 Get the staff Involved in development of the mission statement, vision, values, and goals of the district and the building 7 To facilitate change in a school that is struggling, it is no longer about the administrator as the boss, but the administrator as part of a team that collaborates to make sure all students are learning.			
Your Comments:			

59. The principal has a sense of awareness of the boundaries that exist between groups within the school community.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 59: 2 Then it has that trickle-down effect to parents and the community 3 The school belongs to the community and the school needs to be that welcoming environment that attracts the entire community 4 I would address sociocultural boundaries and relationships by parent involvement activities 5 The committee needs to be a diverse group and not just the small group of students and parents whom participate most of the time 7 The staff needs to spend time on learning about the other professionals in the building, including their strengths and weaknesses and they "think." .			
Your Comments:			

60. The principal facilitates conversations across boundaries within the school community.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 60: 1 Parents need to know exactly why they are important in this process 2 Again, this is inviting ownership into your school 3 I would require teachers to call parents when progress is not adequate and when a student did a great job.			
Your Comments:			

61. The principal seeks to increase the number and strength of connections between groups within the network embedded in the school community.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 61: 1 The communication must be specific and must have a community purpose and it must flow from all directions 2 Test scores will improve if teachers put time into their lesson plans, incorporate activities to make learning fun, stay after school or come early to help students that are struggling, and communicate with parents on a regular basis 3 It is vital that the principal reach out to the staff, students and community in building positive relationships 3 Many local universities can also provide assistance and training for teachers in reading assessment instruction 4 I would allow teachers to visit other schools to pick up ideas and resources and also work on grants to obtain tangible items 5 The first action is to get parent, teacher, student, and board member representation on a team to develop a realistic mission and vision for the school			

7 I would begin by having the teachers view successful teaching teams and giving them the opportunity to visit other schools that have seen success.
Your Comments:

62. The principal seeks buy-in to the direction of the building from all participants.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 62: 1 The success of every student at this school depends on getting the personnel to understand that we're all in this together for the benefit of all students 2 If teachers feel that they have written a working curriculum instead of something written for the district because one has to be in place, they again will take ownership in this document 3 The challenge for the principal is to be able to articulate this vision, provide a roadmap of how this can be achieved and involve the staff in the planning process 4 The grants would enable me to pay staff well to attend such events that greatly enhances teacher attitude and staff buy-in 6 Find out what staff members you need to work on to get them on board. 7 Once again it is not about the administrator telling everyone what to do, it is about the team as a whole collectively agreeing and holding each other accountable for those high expectations.			
Your Comments:			

63. The principal shares ownership of the school with other participants.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 63: 1 The teacher's need to know it's nothing personal, because we are all in this together and we are there as a support, not a hindrance to them 2 This will bring the diversity of the school together to promote a feeling of ownership and pride so that students will want to do better and their parents will want them to do better 3 I would ask for parent volunteers to work in offices, classrooms, teacher work room, etc. so they feel a connectedness to the school 5 Tasks assigned to him/her need to make the assistant feel ownership as part of an administrative team 7 The entire staff would develop a vision together. This would take input from the staff. Teachers need to have ownership in this vision.			
Your Comments:			

64. The principal fosters a sense of belonging to the school with participants.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 64: 1 Through PD, and constant reinforcement from administration, each staff member should realize the important role they provide in helping to set the environment for			

success 2 If teachers aren't excited then students aren't going to be excited 3 I would ask for parent volunteers to work in offices, classrooms, teacher work room, etc. so they feel a connectedness to the school 4 I would begin these as Family Fun Nights which center around games and prizes.
Your Comments:

65. The principal involves all stakeholders in the process of improving student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 65: 1 Overall, this school needs to COMMUNICATE with everyone involved 3 The purpose of this group is to share concerns and information from all constituents as it relates to relevant educational expectations 4 I would do this collaboratively with all partners and stakeholders involved 5 Performance is obviously an issue at Rocky Falls. All stakeholder must realize this is a slow process and miracles will not happen over night.			
Your Comments:			

66. The principal seeks innovative ways to involve parents with the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 66: 1 Good parental communication and involvement is also very important in this process 2 Parent involvement can be difficult 4 I would address sociocultural boundaries and relationships by parent involvement activities 5 Successful sports teams and clubs are a good ways to gain parent involvement and public support.			
Your Comments:			

67. The principal uses teambuilding to support efforts to improve student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 67: 1 Once again, the concept that this is a TEAM effort and everyone has to be on board to make this school a success is ALL important. 2 Invite professionals to your school to speak to everyone instead of just sending a few staff members to workshops outside the district 3 The membership would be made up of community members, business leaders, a diverse parent representation, staff, teachers and students 4 My first approach would be to set up some fun, team building activities with staff 5 Workdays need to be done as a team and teachers need to be charged with a			

specific task for the day. Spending the day working in classrooms is a waste of the day in regard to student instruction 7 This would include teambuilding activities, relationship building, and trust.
Your Comments:

68. The principal promotes relationship building between staff and students.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 77: 2 Students will achieve more if they know that the school cares 3 It is vital that the principal reach out to the staff, students and community in building positive relationships 3 I am a strong proponent of the work of Dr. James Comer at Yale University. His main precept for student learning is "No significant learning occurs, without a significant relationship." 5 As teachers are preparing rooms for the start of the school year, a principal should get to each classroom and talk with each teacher (in their classroom) and through informal visitation, try to gain knowledge of their concerns, philosophy, and thoughts on morale, student performance, leadership and school atmosphere 6 It would also motivate teachers to spend more time at school with students 7 The relationships that we build within our staff and with our students is the number one way to facilitate change in a low achieving school.			
Your Comments:			

69. The principal ensures students receive individual attention from staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 79: 1 Good instructional aides can be utilized to individually work with kids who need the help 2 Test scores will improve if teachers put time into their lesson plans, incorporate activities to make learning fun, stay after school or come early to help students that are struggling, and communicate with parents on a regular basis 3 Students could be given more one on one help during these times by teachers 7 I would want to analyze the amount of student engagement in the classroom, how the individual needs of all students are being met, discipline procedures (students need to be in the classroom in order to learn) and instructional strategies for the under resourced learners.			
Your Comments:			

70. The principal models and encourages a caring atmosphere within the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 80: 2 I feel that all the people employed at a school district should treat the students as if they were their own children			

2 The school should be a professional place where learning and caring are promoted by the entire staff.
Your Comments:

71. The principal shows resolve in his or her efforts to affect student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 81: 1 No one would be safe from scrutiny 2 The principal is going to have to set some rules about attendance. Arrival and dismissal times should be stated in the faculty handbook and the principal needs to ensure that these rules are followed or take appropriate measures. Teachers should not have the option of leaving inadequate lesson plans. Evidently the teacher does not reprimand their class upon returning about their unruly behavior for a substitute 3 I would hold teachers to the times in the contract, usually to be at school for 30 minutes before and after school 4 I would stress to all staff that achievement data and MAP scores are EXTREMELY important 5 The new principal must go into the district with a clear plan and goals 7 I would not want to wait until the MAP test to determine if our students were learning or not.			
Your Comments:			

72. The principal presents certain non-negotiable expectations to staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 82: 1 They work under my direction so if there are any uncooperative staff members, they would have to answer to me, not them 2 The principal is going to have to set some rules about attendance. Arrival and dismissal times should be stated in the faculty handbook and the principal needs to ensure that these rules are followed or take appropriate measures. Teachers should not have the option of leaving inadequate lesson plans. Evidently the teacher does not reprimand their class upon returning about their unruly behavior for a substitute.			
Your Comments:			

73. The principal expects altruistic behavior from self and staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 83: 1 The success of every student at this school depends on getting the personnel to understand that we're all in this together for the benefit of all students 2 It appears that the staff has some experience and knowledge in their background but have become sedentary and complacent 3 The central focus the principal must keep in the forefront is what is best for students			

5 Student performance is why educators go to work.
Your Comments:

74. The principal provides professional development for staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

75. The principal provides monetary incentives to staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

76. The principal provides incentives to students for performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

77. The principal provides classroom resources for staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

78. The principal provides time for collaboration among staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

79. The principal provides support resources for students such as tutoring, transportation, equipment, and materials.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments for statements 85, 86, 87, 88, 89, 90: 1 Through PD, and constant reinforcement from administration, each staff member should realize the important role they provide in helping to set the environment for success 2 Again offer incentives for the class with the best attendance for parent-teacher conferences, parent-teacher organizations or booster meetings 3 This does not happen over night because it takes continued conscious effort by the principal to provide the training, resources and trust building so that together we can achieve great things 4 The grants would enable me to pay staff well to attend such events that greatly enhances teacher attitude and staff buy-in 5 Improving facilities is only a small part of the big task of increasing teacher morale 6 I would check into career ladder and after school tutoring pay for teachers 7 I would begin by asking the Board of Education (hopefully with support from the superintendent) about allowing time for the teachers to meet collaboratively 7 Teachers need to agree upon what the needs are based on the data and align their professional development to those needs.
Your Comments:

80. The principal conveys a sense of urgency in improving student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments for statement 91:

1 Everything would immediately have to be looked at in an objective and constructive way to change this trend 2 It appears that the staff has some experience and knowledge in their background but have become sedentary and complacent 7 What will we do for students who do not understand: Response to Intervention, Double and Triple Dosing for skills, Guided Study Hall, Success Rooms, NOT LEARNING IS A CRISIS! .
Your Comments:

81. The principal serves as a catalyst for initiating and sustaining improvement in student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statement 92: 1 The success of every student at this school depends on getting the personnel to understand that we're all in this together for the benefit of all students 2 Leadership would be very important 3 If you don't do this, then nothing changes and there is no accountability 6 Also it will give you a chance to see what staff members you can count on to help you in the change 7 I would not demand that teachers change-I would work with them to find the ways in order to improve student learning.			
Your Comments:			

82. The principal challenges the status quo within the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments for statements 93, 94: 1 the administrator must be the initiator of this communication 3 This is no small task, since you are challenging the status quo and providing a change in direction and purpose for Rocky Falls 5 Performance is obviously an issue at Rocky Falls. All stakeholder must realize this is a slow process and miracles will not happen over night 6 I believe that you need to not go in and make a bunch of changes until you have had a chance to see how things work to get a better idea of what things need changed 7 This school is struggling and I would facilitate changed in a slow manner but have high expectations for student learning.			
Your Comments:			

Appendix H

Round Three Survey

Dear Expert Principal:
The Round Three survey is included below. 31 statements do not have consensus and need to be re-rated. 36 statements were in high consensus and are included in the second half of the survey—you may re-rate these if the group response influences your original decision. 13 statements were found to have critical consensus and re-rating them will not change the level of consensus, but you may re-rate the statements if the group response changes your mind. Two statements from Round Two were found to have 100% consensus. These statements do not need to be re-rated. I have included the responses from all six participants still involved in the study. Participant 4 chose to not respond to Round 2. Please re-rate the statements in light of the feelings of the expert principals who are also in schools performing as highly as yours. You may choose the original rating you gave the statement, or you may change the rating if you feel influenced by the other expert opinions. The survey should take approximately 30 to 45 minutes to complete depending on the time you spend commenting on the items. Read each statement as a principal acting in a high poverty school trying to increase student performance. Please rate each statement as a 4, 3, 2, or 1 according to the following scale:
4=Critically Important
3=Important
2=Unimportant
1=Highly Unimportant
The statement will be highlighted in red.

☒4=Critically Important	☒3=Important	☒2=Unimportant	☒1=Highly Unimportant
Participant Comments: Panelist responses from Round 2 will be included here and identified by participant number.			
Round 2 Response: The round two responses will be listed here so you may see how the group voted in comparison to your vote. Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 1 2 1 3 1 2			
Your Comments:After rating the statement 4-1 in the check boxes above, you may choose to add a comment in this section if you wish to clarify or question the statement or panelist comments. You are not expected to provide a comment in every section.			

Please start the survey on the next page:

Round 2 Survey: The following 31 statements DO NOT have consensus and need to be re-rated. You may choose the same answer you chose before, or change your selection based on the comments and the choices of the other expert principals participating in the study. Please provide commentary where possible to enrich the depth of research. I suggest you save the survey to your desktop before starting, then save your work often so as to not lose your answers.

8.The principal focuses on the performance of all subgroups included in the school population.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 3 Panelist 2: 3 Panelist 3: 4 Panelist 5: 4 Panelist 6: 3 Panelist 7: 4			
Your Comments:			

9.The principal promotes the recruitment of a diverse group of students and parents to participate in efforts to increase student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: P3— It is hard to argue with facts. We held meetings with our African American parents and students. We explained the whole process and asked for suggestions and support from them. We initiated some of their suggestions and merged with our own to come up with a plan that brought some success.			
Round 2 Response: Panelist 1: 3 Panelist 2: 3 Panelist 3: 4 Panelist 5: 3 Panelist 6: 2 Panelist 7: 4			
Your Comments:			

10.The principal promotes dialogue vertically and horizontally across the school building.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 4 Panelist 2: 3 Panelist 3: 4 Panelist 5: 3 Panelist 6: 3 Panelist 7: 4			
Your Comments:			

12.The principal acts as an equal during team collaboration to influence student learning.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 2 3 3 3 4
Your Comments:

14.The principal disseminates vital information in a transparent, proactive manner.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: P3— This is where real growth occurs. When staff and students can see the building of positive relationships and a willingness to go the extra mile, it is a win win for everyone.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 4 4 2 3			
Your Comments:			

18.The principal promotes the evaluation of the school culture in order to find areas in need of improvement.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 3 4 2 4			
Your Comments:			

20.The principal finds ways to welcome the community into the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 3 4 4 3 2 4			
Your Comments:			

23.The principal improves morale by celebrating success.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 4 3 3 4			
Your Comments:			

Your Comments:

25.The principal seeks to understand connections between low performance and marginalized populations.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 4 Panelist 2: 3 Panelist 3: 4 Panelist 5: 3 Panelist 6: 2 Panelist 7: 4			
Your Comments:			

26.The principal works to break the cycle of poor student performance in marginalized (eg, poor/working class/poverty class) populations.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 3 Panelist 2: 3 Panelist 3: 4 Panelist 5: 3 Panelist 6: 2 Panelist 7: 4			
Your Comments:			

31.The principal uses current data and information to predict the necessary changes to improve student performance beyond the current year.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 3 Panelist 2: 4 Panelist 3: 4 Panelist 5: 3 Panelist 6: 3 Panelist 7: 4			
Your Comments:			

32.The principal relies on the help and knowledge of experts to increase student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 4 Panelist 2: 3 Panelist 3: 4 Panelist 5: 3 Panelist 6: 3 Panelist 7: 4			
Your Comments:			

36.The principal develops a vision for the direction of the building.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 4 4 2 1			
Your Comments:			

37.The principal includes everyone in developing a vision for the building.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 4 3 3 4			
Your Comments:			

38.The principal helps staff reflect on the values under which the building is and should be operating.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 4 3 3 4			
Your Comments:			

40.The principal promotes a professional learning community within the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 4 3 2 4			
Your Comments:			

46.The principal emphasizes the importance of effectively developing and implementing the curriculum.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7			

4	3	3	4	3	4

Your Comments:

51.The principal emphasizes classroom management and student engagement.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: P3— Three and four minute random walk-throughs can give you good informantion on student engagement, instruction and classroom management.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	4	3	3	4

Your Comments:

52.The principal seeks more efficient procedures and processes within the building.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
3	2	3	3	2	4

Your Comments:

53.The principal maintains a positive environment involving all participants.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	3	4	3	4

Your Comments:

55.The principal makes decisions that move the school in his or her desired direction.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	4	3	3	2

Your Comments:

56.The principal manages the structure of the staff in the building.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.					
Round 2 Response:					
Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	4	4	3	2
Your Comments:					

58.The principal shares leadership with participants.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response:			
Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	4	3	3	4
Your Comments:					

61.The principal seeks to increase the number and strength of connections between groups within the network embedded in the school community.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response:			
Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
3	3	4	3	2	4
Your Comments:					

64.The principal fosters a sense of belonging to the school with participants.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response:			
Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
3	3	4	4	2	4
Your Comments:					

66.The principal seeks innovative ways to involve parents with the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response:			
Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
3	3	4	3	2	4
Your Comments:					

67.The principal uses teambuilding to support efforts to improve student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 3 Panelist 2: 3 Panelist 3: 4 Panelist 5: 3 Panelist 6: 2 Panelist 7: 4			
Your Comments:			

72.The principal presents certain non-negotiable expectations to staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 4 Panelist 2: 4 Panelist 3: 3 Panelist 5: 3 Panelist 6: 2 Panelist 7: 2			
Your Comments:			

74.The principal provides professional development for staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 3 Panelist 2: 2 Panelist 3: 4 Panelist 5: 4 Panelist 6: 3 Panelist 7: 4			
Your Comments:			

76.The principal provides incentives to students for performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 3 Panelist 2: 2 Panelist 3: 3 Panelist 5: 4 Panelist 6: 4 Panelist 7: 3			
Your Comments:			

80.The principal conveys a sense of urgency in improving student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: P3— If the principal does not exhibit a true concern that things must improve, then no one is going to.			
Round 2 Response:			

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	4	4	2	3

Your Comments:

High Consensus: YOU DO NOT HAVE TO RERATE THE FOLLOWING STATEMENTS; HOWEVER, YOU MAY RE-RATE THE STATEMENT IF YOU CHOOSE AFTER VIEWING THE GROUP RESPONSE.

3.The principal expects staff to hold each other accountable for high expectations.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
3	3	3	3	4	4

Your Comments:

6.The principal requires ongoing assessment of student progress toward the goal of proficiency on the MAP test.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	4	4	3	4

Your Comments:

7.The principal aligns building policy, procedure, and practice with the purpose of increasing student performance to achieve proficiency on the MAP test.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	4	4	3	4

Your Comments:

11.The principal brings diverse community and building representatives together to collaborate on school issues.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
3	3	4	3	3	4

Your Comments:

13.The principal identifies and promotes ways for the school to communicate effectively with diverse groups of parents.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
3	3	3	3	2	4

Your Comments:

16.The principal focuses staff on that which can be improved (i.e. curriculum, instruction, assessment) as opposed to allowing blame for low performance to be placed on student issues and/or ability.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: P3— I agree that all three areas must be looked at to achieve maximum results.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	4	4	3	4

Your Comments:

17.The principal fosters an optimistic environment where teachers believe in student ability.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	4	4	2	4

Your Comments:

21.The principal promotes a culture of trust within the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	4	4	3	4

Your Comments:

22.The principal builds positive relationships with, and among, staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: P3— You must have a passion for students and staff. Building positive relationships develops mutual trust and respect.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 4 4 3 4			
Your Comments:			

24.The principal encourages calculated risk-taking within the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 3 2 3 3 3 4			
Your Comments:			

27.The principal recruits everyone's participation in the continual increase in student learning and performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 3 3 3 4			
Your Comments:			

28.The principal evaluates the school from a holistic or "big picture" perspective.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 3 3 3 4			
Your Comments:			

33.The principal makes staff aware of research on effective schools.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.					
Round 2 Response:					
Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	3	3	3	4
Your Comments:					

35.The principal continually reinforces the mission of the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response:			
Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
3	3	4	3	3	4
Your Comments:					

39.The principal helps establish building and personal goals for improving student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response:			
Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	3	3	3	4
Your Comments:					

41.The principal eliminates distractions and obstacles when and wherever possible.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response:			
Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	2	4	4	3	4
Your Comments:					

42.The principal deals with resistance effectively.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: P3— Look at your leader teachers for assistance in bringing needed change to your school.			
Round 2 Response:			
Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	4	4	3	4
Your Comments:					

43.The principal encourages and enables staff to continually reflect on current practices in light of available data.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 4 4 3 4			
Your Comments:			

44.The principal continually evaluates past and present performance of personnel with the purpose of increasing student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 4 4 3 4			
Your Comments:			

45.The principal monitors change and continuously adjusts practice to improve student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 4 4 3 4			
Your Comments:			

48.The principal deals with employee issues and concerns.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 4 3 3 3			
Your Comments:			

50.The principal handles student issues and concerns.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 3 2 3 4 3 3
Your Comments:

57.The principal overlaps duties of staff in the building to strengthen outcomes.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 3 3 3 3 2 2			
Your Comments:			

59.The principal has a sense of awareness of the boundaries that exist between groups within the school community.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 3 3 3 3 2 4			
Your Comments:			

60.The principal facilitates conversations across boundaries within the school community.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 3 3 3 3 2 4			
Your Comments:			

62.The principal seeks buy-in to the direction of the building from all participants.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: P3— The principal must continually check their attitude and receptivity to all groups, so as to not isolate but listen even when they do not agree.			
Round 2 Response: Panelist 1 Panelist 2 Panelist 3 Panelist 5 Panelist 6 Panelist 7 4 3 4 4 3 4			

Your Comments:

63.The principal shares ownership of the school with other participants.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 4 Panelist 2: 3 Panelist 3: 3 Panelist 5: 3 Panelist 6: 3 Panelist 7: 4			
Your Comments:			

68.The principal promotes relationship building between staff and students.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 3 Panelist 2: 3 Panelist 3: 4 Panelist 5: 3 Panelist 6: 3 Panelist 7: 4			
Your Comments:			

69.The principal ensures students receive individual attention from staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 3 Panelist 2: 4 Panelist 3: 3 Panelist 5: 3 Panelist 6: 3 Panelist 7: 4			
Your Comments:			

70.The principal models and encourages a caring atmosphere within the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 4 Panelist 2: 4 Panelist 3: 4 Panelist 5: 3 Panelist 6: 3 Panelist 7: 4			
Your Comments:			

71.The principal shows resolve in his or her efforts to affect student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response:			

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	4	4	3	2	4

Your Comments:

73.The principal expects altruistic behavior from self and staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
3	3	4	3	3	2

Your Comments:

75.The principal provides monetary incentives to staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
3	2	2	2	3	2

Your Comments:

77.The principal provides classroom resources for staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	4	4	3	4

Your Comments:

79.The principal provides support resources for students such as tutoring, transportation, equipment, and materials.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	3	3	3	3	4

Your Comments:

82.The principal challenges the status quo within the school.

☐4=Critically	☐3=Important	☐2=Unimportant	☐1=Highly

Important			Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 3 Panelist 2: 3 Panelist 3: 4 Panelist 5: 3 Panelist 6: 3 Panelist 7: 4			
Your Comments:			

THE FOLLOWING STATEMENTS HAD CRITICAL CONSENSUS OF LESS THAN 100% DURING ROUND 2. IT WILL NOT CHANGE THE STATUS OF THE STATEMENT TO RE-RATE IT; HOWEVER, IF YOU DECIDE TO CHANGE YOUR ANSWER IN RESPONSE TO THE RESPONSE OF THE OTHER EXPERT PRINCIPALS, YOU MAY DO SO.

1.The principal holds all staff accountable for student performance on the MAP.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: P3—There has to be teacher buy in that what we are doing is best for students. Each department has to develop lesson plans related to course gle's that are not being met on MAP.			
Round 2 Response: Panelist 1: 4 Panelist 2: 4 Panelist 3: 4 Panelist 5: 4 Panelist 6: 4 Panelist 7: 3			
Your Comments:			

2.The principal drives change through increased accountability for student performance on the MAP.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 4 Panelist 2: 4 Panelist 3: 4 Panelist 5: 4 Panelist 6: 4 Panelist 7: 3			
Your Comments:			

5.The principal actively guides staff in the analysis of data.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: P3— This is something we did religiously with the entire staff. At first it was difficult for them to understand all the results. They worked together as a team with an interdisciplinary approach. Then each department would meet and come up with a book of activities that supported goal and process standards. We analyzed every sub-group and used a pull out system to focus on African American, Hispanic, etc.			
Round 2 Response:			

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	4	4	4	4	3

Your Comments:

15.The principal works to help the staff believe they have the ability to improve student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	4	4	4	3	4

Your Comments:

19.The principal seeks ways to instill school pride in the school and community.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	4	4	4	2	4

Your Comments:

29.The principal allows change to emerge over time from the particular context and needs of the school.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: P3— The principal must be a change agent and open to ideas that are good for students.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
3	3	3	3	3	4

Your Comments:

30.The principal uses current data to predict the necessary changes to improve student performance during the current year.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant

Participant Comments: No Comments were made in Round 2.

Round 2 Response:

Panelist 1	Panelist 2	Panelist 3	Panelist 5	Panelist 6	Panelist 7
4	4	4	4	3	4

Your Comments:

34.The principal keeps the school and community focused on improving student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: P3— You can't be afraid of change but embrace change if data and research tells you it will benefit students. The principal does not have a monopoly on ideas for change. You must empower your staff to be risk takers and if they have ideas that have merit then don't stand in the way.			
Round 2 Response: Panelist 1: 4 Panelist 2: 4 Panelist 3: 4 Panelist 5: 4 Panelist 6: 3 Panelist 7: 4			
Your Comments:			

47.The principal manages the physical environment/building.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 3 Panelist 2: 3 Panelist 3: 4 Panelist 5: 3 Panelist 6: 3 Panelist 7: 3			
Your Comments:			

49.The principal monitors teacher duties and responsibilities.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 3 Panelist 2: 3 Panelist 3: 4 Panelist 5: 3 Panelist 6: 3 Panelist 7: 3			
Your Comments:			

65.The principal involves all stakeholders in the process of improving student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 4 Panelist 2: 4 Panelist 3: 4 Panelist 5: 4 Panelist 6: 2 Panelist 7: 4			
Your Comments:			

78.The principal provides time for collaboration among staff.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 3 Panelist 2: 3 Panelist 3: 3 Panelist 5: 3 Panelist 6: 3 Panelist 7: 4			
Your Comments:			

81.The principal serves as a catalyst for initiating and sustaining improvement in student performance.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 4 Panelist 2: 4 Panelist 3: 4 Panelist 5: 4 Panelist 6: 3 Panelist 7: 4			
Your Comments:			

THE FOLLOWING STATEMENT HAD CRITICAL CONSENSUS OF 100% DURING ROUND 2. THIS STATEMENT WILL NOT BE RE-RATED.

4.The principal considers data analysis a priority for improving student performance.

☒4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 4 Panelist 2: 4 Panelist 3: 4 Panelist 5: 4 Panelist 6: 4 Panelist 7: 4			
Your Comments:			

54.The principal enforces the policies and procedures of the building and district.

☐4=Critically Important	☐3=Important	☐2=Unimportant	☐1=Highly Unimportant
Participant Comments: No Comments were made in Round 2.			
Round 2 Response: Panelist 1: 3 Panelist 2: 3 Panelist 3: 3 Panelist 5: 3 Panelist 6: 3 Panelist 7: 3			
Your Comments:			

Appendix I

Complete List of Panelist Comments from Rounds Two and Three

Statement	Round	Panelist 3	Panelist 7
1	2	There has to be teacher buy in that what we are doing is best for students. Each department has to develop lesson plans related to course GLEs (Grade Level Expectations) that are not being met on MAP.	
5	2	This is something we did religiously with the entire staff. At first it was difficult for them to understand all the results. They worked together as a team with an interdisciplinary approach. Then each department would meet and come up with a book of activities that supported goal and process standards. We analyzed every sub-group and used a pull out system to focus on African American, Hispanic, etc.	
8	2	It is hard to argue with facts. We held meetings with our African American parents and students. We explained the whole process and asked for suggestions and support from them. We initiated some of their suggestions and merged with our own to come up with a plan that brought some success.	
8	3	It is important to address the needs of all students. You should especially focus on the minority groups within your school.	
9	3	It all depends on the demographic makeup of your school and their level of engagement in the school and community.	
10	3	This is very important for a principal if it's not a top priority then you're not as effective as you could be.	
12	3	It is the responsibility of the principal to provide the data on student learning as to what is working and not working, ask critical questions, and solicit responses and their suggestions and be prepared to give your own suggestions.	
14	2	This is where real growth occurs. When staff and students can see the building of positive relationships and a willingness to go the extra mile, it is a win-win for everyone.	
14	3	I think this is one of the areas where leadership needs to take the lead. If it's not important to you, it's not important to you staff or student achievement.	
20	2	You must have a passion for students and staff. Building positive relationships develops mutual trust and respect.	
20	3	The principal needs to be seen as the biggest advocate and cheerleader for his or her school. Getting the public into the school to see all the good things that went on, offering the services of the school for group meetings, booster club and community meetings does more to promote good will than anything I know. It is the community pride and ownership in the school.	

22	3	For you to be as efficient as you could be and for the school to be effective, you have to operate as a team and build those relationships. James Comer: no significant learning occurs without a significant relationship.	
23	3	I ranked “4” because in high poverty schools success does not always come easily. But when you celebrate, it becomes a rallying point of pride and success.	
26	3	If you don't then nothing changes and we accept mediocrity.	
29	2	The principal must be a change agent and open to ideas that are good for students.	
32	3	I realize that in some schools the extra expert assistance may not be available but if you can access help you should.	
34	2	You can't be afraid of change but embrace change if data and research tells you it will benefit students. The principal does not have a monopoly on ideas for change. You must empower your staff to be risk takers and if they have ideas that have merit then don't stand in the way.	
35	3	You have to keep that in front of them all the time	
36	3	If you don’t' have a vision and direction, who else does?	The principal does not develop the vision-the staff as a team creates the vision for student success.
40	3	This is one of the best ways proven to increase teacher growth and student performance.	
42	2	Look at your leader teachers for assistance in bringing needed change to your school.	
46	3	I should have checked “4” the first time. It is like the old saying, you measure what you monitor.	
51	2	Three and four minute random walk-throughs can give you good information on student engagement , instruction and classroom management.	
52	3		Change to a 3-some of these ideas need to come from the staff.
53	3	You do so when at all possible. You can’t allow a few naysayers to corrupt marginal or new teachers. I’ve had to say a few times, “This is where the school is going. You need to buy a ticket or get off the train.”	
55	3	I felt I was being a little over the top and a 3 is better to allow open input.	The principal facilitates the decision making process.
58	3	I do believe we need to empower teachers to take leadership and ownership within the school. Because they grow and feel better in the process when they have ownership in the process.	
62	2	The principal must continually check their attitude and receptivity to all groups, so as to not isolate but listen even when they do not agree.	
64	3	I can't overstate how important this is to the school's growth and success.	
69	3	The principal needs to try to provide all available opportunities and options for students to have a choice.	

75	3	Provide more budget money to help neglected, but important programs instead of wasting money on things that don't directly impact kids.
76	3	It really works for us to get students motivated and competitive with each other.
80	2	If the principal does not exhibit a true concern that things must improve, then no one is going to.

Appendix J

Panelist Demographic Questions

Delphi Panelist Demographics
1.What is your gender?
2. What is your race/ethnicity?
3.What is your age?
4.How many years have you been an educator?
5.How many years have you served as principal?
6.Is your building located in a rural (small town/primarily agricultural), suburban (near urban or metropolitan), urban (Springfield, Columbia, Jefferson City, etc), or metropolitan (KC or St. Louis) area?
7.What is the highest degree you have achieved?
8.How many different schools and/or districts have you served as principal?
9.What has been your role in reforming low-performing schools? Please indicate which schools and what position you were involved in reforming low-performing schools. This information will be kept confidential.

Appendix K

Overview of Findings

All statements begin “The principal…”*

Table 21: Overview of Findings

Intersect	Critical Consensus		High Consensus			No Consensus	
Domain/Stage	Critically Important	Highly Important	Critically Important	Highly Important	Unimportant	Critically Important	Highly Important
D1/S0: Identity; No Stage							* presents certain non-negotiable expectations to staff. *makes decisions that move the school in his or her desired direction *develops a vision for the direction of the building.
D1/S1: 3rd Order Change (Emergent Property)				* facilitates conversations across boundaries within the school community.		* recruits everyone’s participation in the continual increase in student learning and performance.	
D1/S2: Commitment to the Identity of the Organization	*emphasizes the importance of effectively developing and implementing the curriculum. *improves morale by celebrating success. *keeps the school and community focused on improving student performance.* helps staff reflect on the values under which the building is and should be operating.* serves as a catalyst for initiating and sustaining improvement in student performance.* seeks ways to instill school pride in the school and community.* eliminates distractions and obstacles when and wherever possible.	* allows change to emerge over time from the particular context and needs of the school.* manages the physical environment/ building.* monitors teacher duties and responsibilities.* enforces the policies and procedures of the building and district.	* requires ongoing assessment of student progress toward the goal of proficiency on the MAP test.* aligns building policy, procedure, and practice with the purpose of increasing student performance to achieve proficiency on the MAP test.* deals with resistance effectively.* seeks buy-in to the direction of the building from all participants.* shows resolve in his or her efforts to affect student performance.* conveys a sense of urgency in improving student performance.* manages the structure of the staff in the building.	* continually reinforces the mission of the school. *helps establish building and personal goals for improving student performance.		* focuses on the performance of all subgroups included in the school population.	

D1/S3: Strengthening the Identity of the Organization	* includes everyone in developing a vision for the building.			* has a sense of awareness of the boundaries that exist between groups within the school community.			
D2/S0: Information; No Stage					* provides monetary incentives to staff.		
D2/S1: Information Flow within Networks			* promotes dialogue vertically and horizontally across the school building.	* disseminates vital information in a transparent, proactive manner.* identifies and promotes ways for the school to communicate effectively with diverse groups of parents.			
D2/S2:Critical Praxis: Continual Evaluation of Information within the Diverse Network of a Community of Practice (Emergent Property)	* considers data analysis a priority for improving student performance.* uses current data to predict the necessary changes to improve student performance during the current year.* uses current data and information to predict the necessary changes to improve student performance beyond the current year.* provides classroom resources for staff.	* challenges the status quo within the school.	* encourages and enables staff to continually reflect on current practices in light of available data.* continually evaluates past and present performance of personnel with the purpose of increasing student performance.* monitors change and continuously adjusts practice to improve student performance.* provides professional development for staff.* seeks to understand connections between low performance and marginalized populations.	* works to break the cycle of poor student performance in marginalized (eg, poor/working class/poverty class) populations.* evaluates the school from a holistic or "big picture" perspective.* seeks more efficient procedures and processes within the building.		* promotes the evaluation of the school culture in order to find areas in need of improvement.	* makes staff aware of research on effective schools.
D2/S3: Diversification of Information	* actively guides staff in the analysis of data.			* provides support resources for students such as tutoring, transportation, equipment, and materials.			

D3/S1: Networking Builds Relationships	* relies on the help and knowledge of experts to increase student performance.* maintains a positive environment involving all participants.* builds positive relationships with, and among, staff.* involves all stakeholders in the process of improving student performance.			* promotes the recruitment of a diverse group of students and parents to participate in efforts to increase student performance.			
D3/S2: Commitment to Others in a Community of Practice	* holds all staff accountable for student performance on the MAP.* focuses staff on that which can be improved (i.e. curriculum, instruction, assessment) as opposed to allowing blame for low performance to be placed on student issues and/or ability.* promotes a culture of trust within the school.	* expects altruistic behavior from self and staff.	* drives change through increased accountability for student performance on the MAP.* fosters an optimistic environment where teachers believe in student ability.* promotes a professional learning community within the school.	* expects staff to hold each other accountable for high expectations.* acts as an equal during team collaboration to influence student learning.* uses teambuilding to support efforts to improve student performance.* provides incentives to students for performance.			
D3/S3: High-Capacity Building: Strengthening and Diversifying Connections within Relationships in the Network of a Community of Practice (Emergent Property)	* emphasizes classroom management and student engagement.* works to help the staff believe they have the ability to improve student performance.* fosters a sense of belonging to the school with participants.	* brings diverse community and building representatives together to collaborate on school issues.* seeks to increase the number and strength of connections between groups within the network embedded in the school community.* seeks innovative ways to involve parents with the school.* promotes relationship building between staff and students.* provides time for collaboration among staff.* overlaps duties of staff in the building to strengthen outcomes.	* shares leadership with participants.* models and encourages a caring atmosphere within the school.	* finds ways to welcome the community into the school.* deals with employee issues and concerns.* shares ownership of the school with other participants.* ensures students receive individual attention from staff.* encourages calculated risk-taking within the school.* handles student issues and concerns.			

Appendix L

Scenario Statement Analysis

The following table represents the categorization and analysis of the statement's comments to the scenario. All of the sentences or phrases were taken from the Word response and collapsed together in an Excel document. As the analysis progressed and questions or statements were generated, groups were collapsed to create a succinct a group of statements as possible. Hopefully this table will help interested researchers see how this process was accomplished.

Table 22: Scenario Statement Analysis

Group	Panelist	Response
Accountability		combined "Excellence" with accountability
	1	No one would be safe from scrutiny
	2	The principal should be monitoring [teacher use of curriculum] along with the lesson plans
	3	If you don't [continually evaluate, assess and make adjustments], then nothing changes and there is no accountability
	4	I would stress to all staff that achievement data and MAP scores are EXTREMELY important
	5	It will be made clear; the action plan will be a part of the Performance Based Teacher Evaluation
	6	From looking at the data you can see what gle's are not being covered well or the question types that aren't being used in class on a regular basis
	7	Once again it is not about the administrator telling everyone what to do, it is about the team as a whole collectively agreeing and holding each other accountable for those high expectations
	Question	The principal holds all staff accountable for student performance on the MAP.
	Question	The principal drives change through increased accountability for student performance on the MAP.
	Question	The principal relies on staff holding each other accountable for high expectations.
Data Analysis		comined 3rd question with first question to narrow to 2 questions
	1	I would evaluate the curriculum, the instructional techniques, and the past assessment procedures of the district
	2	The teachers can use this data to improve their teaching practices to prepare students for testing
	3	I would provide demographic data that shows all sub groups and the progress or lack of progress over the last five years
	4	I would began having bi-monthly grade level meetings where grades and data items are reviewed and discussed
	5	The first task at hand is to analyze student data, through crystal reports, to determine trends of low performance (school wide)
	6	Analyzing data from past test is something easy to do to make some quick changes to help test scores
	7	I would want to analyze the amount of student engagement in the classroom, how the individual needs of all students are being met, discipline procedures (students need to be in the classroom in order to learn) and instructional strategies for the under resourced learners

	Question	The principal makes data analysis a priority for improving student performance.
	Question	The principal guides staff in the analysis of data.
Student Achievement		eliminated questions 2 and 3 because they were redundant with "Goals" section
	1	The assessment coordinator...makes sure each teacher is assessing our students in a way to help each student be successful
	2	The principal needs to set some goals for increasing student performance
	3	But if we evaluate what we do and why we do it and measure it against student success, we can see real progress
	4	I would try to steer the goals toward student achievement without taking over the entire process
	5	Performance breakdown is just the beginning to increasing student performance
	6	This would be an opportunity to tutor students who are basic or below to help move them to proficient
	7	In these action steps-I would expect for the teachers to develop a way to assess the students learning along they way
	Question	The principal requires ongoing assessment of student progress toward the goal of profiency on the MAP test.
	Question	The principal aligns building policy, procedure, and practice with student performance to increase proficiency on the MAP test.
Diversity		eliminated question 2 because redundant with "Time"
	2	Begin by offering a variety of activities to meet a diverse interest and offering incentives for parents
	3	I would provide demographic data that shows all sub groups and the progress or lack of progress over the last five years
	5	The committee needs to be a diverse group and not just the small group of students and parents whom participate most of the time
	Question	The principal focuses on the performance of all subgroups included in the school population.
	Question	The principal promotes the recruitment of a diverse group of students and parents to participate in efforts to increase student performance.
Collaboration		combined with "Dialogue"
	1	...promote dialogue both vertically and horizontally and it reinforces the fact that we are all in this together!
	2	The principal needs to have all staff members together discuss the district and building mission statements, vision statements, values, and goals
	3	The purpose of this group is to share concerns and information from all constituents as it relates to relevant educational expectations
	4	I would do this collaboratively with all partners and stakeholders involved
	5	The first action is to get parent, teacher, student, and board member representation on a team to develop a realistic mission and vision for the school
	7	To facilitate change in a school that is struggling, it is no longer about the administrator as the boss, but the administrator as part of a team that collaborates to make sure all students are learning
	Question	The principal promotes dialogue vertically and horizontally across the school building.
	Question	The principal brings diverse community and building representatives together to collaborate on school issues.
	Question	The principal acts as an equal during team collaboration to influence student learning.
Communication		eliminated question 2 because redundant with "Parent Involvement" and merged with "Public Relations"
	1	Good parental communication and involvement is also very important in this process

	2	Communication means informing parents about the positive and the negative, and always start with positive communication
	3	I would require teachers to call parents when progress is not adequate and when a student did a great job
	5	A well communicated plan that includes the end result sets the expectation
	Question	The principal finds ways for the school to communicate effectively with diverse groups of parents.
	Question	The principal disseminates vital information in a transparent, proactive manner.
Collective Efficacy		
	1	Through PD, and constant reinforcement from administration, each staff member should realize the important role they provide in helping to set the environment for success
	2	My philosophy is that the staff is the backbone of your school
	3	As the staff grows in confidence they will evaluate student work, teacher lessons and conduct student assessments, which provides valuable feedback on their own teaching methods and how students learn
	7	Once again it is not about the administrator telling everyone what to do, it is about the team as a whole collectively agreeing and holding each other accountable for those high expectations
	Question	The principal works to help the staff believe they have the ability to improve student performance.
Non-Deficit Thinking		revised question 1 for clarification
	1	If our students are not successful, it's either a curriculum, instruction, or assessment issue
	2	Teachers need to remember that many students have had poor home situations and have become very successful
	3	As the new principal, I would go in with a positive attitude, no fault and no blame for past failures of the school
	5	Teachers must believe in their job and their students in order to have a successful district
	7	We would then look for areas to improve on-what concepts overall did the students not understand
	Question	The principal reminds staff that low performance comes from curriculum, instruction, and/or assessment as opposed to student issues.
	Question	The principal focuses staff on what can be improved as opposed to blaming student ability for low performance.
Optimism		
	2	If staff members don't feel great about their school, they are not going to be excited about teaching the students...Children will succeed if you believe in them and guide them along the way
	5	Teachers must believe in their job and their students in order to have a successful district
	7	Take the time to celebrate the good-because we can build off of that
	Question	The principal fosters an optimistic environment where teachers believe in student ability.
Culture		combined "Community Involvement" and "Trust" into this category
	1	I would first of all evaluate the entire educational setting of this school
	2	The community will become proud of the school if the school will give to the community by being involved in projects
	3	The school belongs to the community and the school needs to be that welcoming environment that attracts the entire community
	4	Building trust and rapport would be the number one agenda item
	5	Building pride in the school can be the biggest attribute to school improvement

	7	Culture, Culture, Culture-a leader needs to create a positive culture for the students and the staff
	Question	The principal evaluates the school culture in order to find areas in need of improvement.
	Question	The principal seeks ways to instill school pride in the school and community.
	Question	The principal finds ways to welcome the community into the school.
	Question	The principal builds a culture of trust within the school.
	Question	The principal builds positive relationships with staff.
Morale		Questions 2 and 3 deleted because of redundancy with "Resources" and "Caring"
	2	Students will achieve more if they know that the school cares
	3	Every month at faculty meetings...Another teacher or teachers would nominate a teacher that has gone above and beyond regular expectations in support of students or staff
	4	The grants would enable me to pay staff well to attend such events that greatly enhances teacher attitude and staff buy-in
	5	Teacher morale is the fulcrum in which a school district's direction balances
	7	Celebrations would occur for what we are doing right-It is always important to celebrate with our team
	Question	The principal improves morale by celebrating success.
Enthusiasm		
	2	If teachers aren't excited then students aren't going to be excited
	Question	The principal generates excitement within the school.
Risk-taking		
	7	Let the staff know that it is okay to try new researched based instructional strategies-mistakes are okay. Just like our students need to understand mistakes are okay
	Question	The principal encourages calculated risk-taking within the school.
Cultural Reproduction		
	3	If this cycle is not broken then students fall further behind become frustrated and can become discipline problems
	Question	The principal works to break the cycle of poor student performance in marginalized (eg, poor/working class/poverty class) populations.
Planned Enculturation		
	5	A criteria for teachers to be eligible for tutoring should be based on PBTE
	Question	The principal works to improve opportunities for marginalized (eg, poor/working class/poverty class) populations.
Achievement Gaps		
	3	For the students that are two-three years behind in grade level I would create small specialized classes that would focus on core subject areas
	5	Title I money will be used for supplemental resources such as: reading and math resources, reading and math coaches, and equipment (i.e. manipulatives, projectors, etc.)
	Question	The principal addresses gaps in performance between marginalized and dominant student populations.
Marginalization		
	5	With 70% free and reduced, most students will be classified as high-risk
	Question	The principal seeks to understand connections between low performance and marginalized populations.

Dynamic Synergy		
	1	...this is a very organized team effort utilizing everyone's strengths to make sure we are giving our student's the best chance for success
	2	It takes everyone working together to make these ideas successful
	3	As the staff grows in confidence they will evaluate student work, teacher lessons and conduct student assessments, which provides valuable feedback on their own teaching methods and how students learn
	Question	The principal helps everyone contribute to the continual increase in student learning and performance.
Holistic		
	1	I would first of all evaluate the entire educational setting of this school
	2	The school in your scenario has many areas that need improvement
	Question	The principal evaluates the school from a holistic perspective.
Emergence		
	3	But with change, you must continually evaluate, assess and make adjustments...For this to be effective it will evolve over a three to five year period of time
	4	...our goals...would be long term and a building process
	5	Performance is obviously an issue...All stakeholder must realize this is a slow process and miracles will not happen over night
	6	It helped them see what was working and allowed them to change things that didn't work as well
	7	This change is a process-not something that could happen overnight
	Question	The principal allows change to emerge over time from the context of the school.
Prediction		merge with "Time" questions
	5	The first task at hand is to analyze student data, through crystal reports, to determine trends of low performance (school wide)
	Question	The principal uses current data to predict the necessary changes to improve student performance over the next year.
	Question	The principal uses current data to predict the necessary changes to improve student performance over the next three to five years.
	Question	The principal uses current data to predict the necessary changes to improve student performance over more than five years.
Expertise		
	1	immediately put people in positions where they have the greatest ability to be successful
	2	Invite professionals to your school to speak to everyone instead of just sending a few staff members to workshops outside the district
	3	The experts provide the research, data and rational for changes that are needed, provide guidance and develop the framework for the curriculum
	4	I would push for an academic coach to be hired for the district to begin work on curriculum revisions based on MAP/Terra Nova scores and to begin the work of common assessments
	5	Title I money will be used for supplemental resources such as: reading and math resources, reading and math coaches, and equipment (i.e. manipulatives, projectors, etc.)
	7	I would begin by having the teachers view successful teaching teams and giving them the opportunity to visit other schools that have seen success
	Question	The principal relies on the help and knowledge of experts to increase student performance.

Effective Schools Research		
	4	Before we did this I would want to do some training on what makes an effective school, thus, trying to get insignificant things like parking spots and lunch schedules off the agenda before we get to work
	7	Let the staff know that it is okay to try new researched based instructional strategies-mistakes are okay. Just like our students need to understand mistakes are okay
	Question	The principal makes staff aware of research flowing out of effective schools.
Focus		combined with "Learning"
	1	It's very important for everyone to know that our main goal with all of this is the improvement of instruction for OUR students!
	2	This school needs to set goals to improve with everyone sharing their ideas...The school should be a professional place where learning and caring are promoted by the entire staff
	3	The central focus the principal must keep in the forefront is what is best for students
	4	I would build on our strengths (maybe experiences teaching staff) while setting up 2-3 manageable goals
	5	The principal needs to provide direction to all staff to set parameters and expectations for the day
	6	Get the staff Involved in development of the mission statement, vision, values, and goals of the district and the building
	7	These four questions would continue to guide a work-so it is not about adding something to do-it is about focusing on the right issue-student learning
	Question	The principal keeps the school and community focused on improving student performance.
Mission		
	1	I would evaluate the mission, philosophy, and goals of the district
	2	The principal needs to have all staff members together discuss the district and building mission statements, vision statements, values, and goals
	5	The first action is to get parent, teacher, student, and board member representation on a team to develop a realistic mission and vision for the school
	Question	The principal continually reinforces the mission of the school.
Vision		
	2	All the staff would need to be participants in forming the new groundwork for school improvement
	3	As a new principal taking over the helm, I would have a vision of where Rocky Falls should be academically and professionally over a four to five year period of time
	5	The first action is to get parent, teacher, student, and board member representation on a team to develop a realistic mission and vision for the school
	7	The entire staff would develop a vision together. This would take input from the staff. Teachers need to have ownership in this vision
	Question	The principal develops a vision for the direction of the building over a five year period.
	Question	The principal includes everyone in developing a vision for the building.
Values		
	2	The principal needs to have all staff members together discuss the district and building mission statements, vision statements, values, and

		goals
	Question	The principal helps staff reflect on the values under which the building is operating.
Goals		
	1	The second thing I would do, and have done, is to cooperatively set a goal and philosophy with the staff
	2	This school needs to set goals to improve with everyone sharing their ideas
	4	I would try to work collaboratively with the staff to set up goals
	5	Once content and goal process standard have been identified, each teacher will create a classroom action plan to be implemented throughout the year in classrooms
	7	This then would lead to the development of our Learning Improvement Plan, (Building Improvement Plan) which would include SMART goals and action steps
	Question	The principal helps establish building and personal goals for improving student performance.
PLC		
	7	The development of Professional Learning Communities is a valuable process in order to facilitate change in a school.
	Question	The principal establishes a professional learning community within the school.
Distractors		
	4	Before we did this I would want to do some training on what makes an effective school, thus, trying to get insignificant things like parking spots and lunch schedules off the agenda before we get to work
	Question	The principal eliminates distractors from the environment where and whenever possible.
Resistance		
	1	Sometimes this does not go over well with personnel because they have their “favorite” things to teach
	2	Staff members need to feel some ownership in the school and it is evident that it is just a place that they go to work, put in their time, and draw a paycheck
	2	Parent involvement can be difficult
	3	Obviously, the culture of this school must change and change can be painful
	5	Some of the older, nearing retirement teachers will be less than enthusiastic to get involved, as well as some of the parents
	5	Plans and strategies will be met with opposition. Tenured teachers will mostly be resistant to change
	5	A portion of the public will be critical of new ideas and programs
	6	Find out what staff members you need to work on to get them on board
	Question	The principal deals with resistance effectively.
Critical Praxis		merge with "Continuous Improvement"
	1	I would evaluate who the personnel are and what they’ve previously been asked to do
	2	The teachers can use this data to improve their teaching practices to prepare students for testing
	3	With ongoing assessment, measurement and evaluation great things can happen
	3	But with change, you must continually evaluate, assess and make adjustments

	5	Performance breakdown is just the beginning to increasing student performance
	6	It helped them see what was working and allowed them to change things that didn't work as well
	7	The staff needs to spend time on learning about the other professionals in the building, including their strengths and weaknesses and they "think."
	Question	The principal causes staff to continually reflect on current practices in light of available data.
	Question	The principal continually evaluates past and present performance of personnel against the purpose of increasing student performance.
	Question	The principal monitors change and continously adjusts practice to improve student performance.
Curriculum		
	1	I would evaluate the curriculum, the instructional techniques, and the past assessment procedures of the district
	2	The teachers should be using their curriculums every week in the classroom
	3	There would need to be experts in the field of curriculum development to work with our teachers in developing appropriate age and subject curriculum and the benefits of these guides and resources to them as well as the students
	6	I have and would encourage my teachers to develop their own curriculum guide books
	7	What do want students to know: Development of a working curriculum and curriculum maps
	Question	The principal emphasizes the importance of effectively developing and implementing the curriculum.
Time		Question 1, 3, and 4 merged into "Resources" and "Prediction"
	1	I would evaluate who the personnel are and what they've previously been asked to do
	2	It appears that the staff has some experience and knowledge in their background but have become sedentary and complacent
	3	I would provide demographic data that shows all sub groups and the progress or lack of progress over the last five years
	3	This does not happen over night because it takes continued conscious effort by the principal to provide the training, resources and trust building so that together we can achieve great things
	3	For this to be effective it will evolve over a three to five year period of time
	5	The assistant principal can be a good resource to find out what has or has not worked in the past
	6	Analyzing data from past test is something easy to do to make some quick changes to help test scores
	7	I would begin by asking the Board of Education (hopefully with support from the superintendent) about allowing time for the teachers to meet collaboratively
	7	This change is a process-not something that could happen overnight
	Question	The principal evaluates student performance by looking into the past, at the present, and into the future.
Management		
	1	I've found that if an administrator uses good respected people in these positions, there is very little animosity among the staff depending upon the way the administrator handles items of concern
	2	As the leader of a school, the principal should strive for everyone to get on board with this philosophy
	5	What is the condition of the facilities? Are classrooms in good repair? Are hallways, bathrooms, teacher workrooms in need of attention? A little paint can give a school a fresh, new look
	6	Teachers need to keep their plan books three weeks ahead that way if they are absent we know were they are and keep going with class

	7	I would want to analyze the amount of student engagement in the classroom, how the individual needs of all students are being met, discipline procedures (students need to be in the classroom in order to learn) and instructional strategies for the under resourced learners
	Question	The principal manages the physical environment/building.
	Question	The principal deals with employee issues and concerns.
	Question	The principal monitors teacher duties and responsibilities.
	Question	The principal handles student issues and concerns.
Classroom		Added the word "student"
	3	Professional development in the area of classroom management would be available to all teachers, but specifically we would focus on teachers in their first five years
	7	I would want to analyze the amount of student engagement in the classroom, how the individual needs of all students are being met, discipline procedures (students need to be in the classroom in order to learn) and instructional strategies for the under resourced learners
	Question	The principal focuses on classroom management and student engagement.
Efficiency		
	1	Personnel has to sit on multiple committees and have more job titles so time has to be planned and utilized more effectively
	5	Workdays need to be done as a team and teachers need to be charged with a specific task for the day. Spending the day working in classrooms is a waste of the day in regard to student instruction
	6	Teachers need to keep their plan books three weeks ahead that way if they are absent we know were they are and keep going with class
	7	The staff would understand that this is no longer a time to take about duties, field trips, or management issues-these teams would focus on these four questions
	Question	The principal seeks more efficient procedures and processes within the building.
Environment		
	1	The custodians can begin to realize that clean learning environments are important to OUR kids
	1	Cooks can understand how important good nutritious and friendly meals help kid's mental capacities
	1	Bus drivers can have an understanding that a good friendly ride to school can set the tone to some children for the entire day!
	3	The school belongs to the community and the school needs to be that welcoming environment that attracts the entire community
	5	As Rocky Falls principal I would start by evaluating the environment
	7	Once those relationships are formed-we can begin to work on creating an environment of success for the teachers and the students
	Question	The principal maintains a positive environment involving all participants.
Policy and Procedure		
	1	I would evaluate the curriculum, the instructional techniques, and the past assessment procedures of the district
	2	The principal is going to have to set some rules about attendance. Arrival and dismissal times should be stated in the faculty handbook and the principal needs to ensure that these rules are followed or take appropriate measures. Teachers should not have the option of leaving inadequate lesson plans. Evidently the teacher does not reprimand their class upon returning about their unruly behavior for a substitute
	3	I would hold teachers to the times in the contract, usually to be at school for 30 minutes before and after school
	6	Teachers need to keep their plan books three weeks ahead that way if they are absent we know were they are and keep going with class

	Question	The principal enforces the policies and procedures of the building and district.
Manipulation		
	7	This leadership team would consist of individuals who I have hand picked to serve as teacher leaders
	Question	The principal makes decisions to mold the building in his or her desired direction.
Structure		
	1	First, in a K-8 setting reality suggests that everyone has to do more than one job
	2	My philosophy is that the staff is the backbone of your school
	Question	The principal manages the structure of the staff in the building.
Redundancy		Deleted question 1
	1	First, in a K-8 setting reality suggests that everyone has to do more than one job
	2	The counselor should review all the data with the teachers who will relay this information to parents and students
	5	This committee may be the CSIP committee or a different group
	Question	The principal overlaps duties of staff in the building to strengthen outcomes.
Participatory Leadership		
	2	All the staff would need to be participants in forming the new groundwork for school improvement
	3	With teacher participation in the planning and implementation process, consensus can be achieved
	4	I would try to steer the goals toward student achievement without taking over the entire process
	5	The first action is to get parent, teacher, student, and board member representation on a team to develop a realistic mission and vision for the school
	6	Get the staff Involved in development of the mission statement, vision, values, and goals of the district and the building
	7	To facilitate change in a school that is struggling, it is no longer about the administrator as the boss, but the administrator as part of a team that collaborates to make sure all students are learning
	Question	The principal shares leadership with participants.
Boundary Awareness		
	2	Then it has that trickle-down effect to parents and the community
	3	The school belongs to the community and the school needs to be that welcoming environment that attracts the entire community
	4	I would address sociocultural boundaries and relationships by parent involvement activities
	5	The committee needs to be a diverse group and not just the small group of students and parents whom participate most of the time
	7	The staff needs to spend time on learning about the other professionals in the building, including their strengths and weaknesses and they "think."
	Question	The principal has a sense of awareness of the boundaries that exist between groups within the school community.
Boundary Conversations		
	1	Parents need to know exactly why they are important in this process
	2	Again, this is inviting ownership into your school
	3	I would require teachers to call parents when progress is not adequate and when a student did a great job

	Question	The principal facilitates conversations across boundaries within the school community.
Boundary Spanning		
	1	This can be a wonderful way to promote dialogue both vertically and horizontally and it reinforces the fact that we are all in this together!
	1	The communication must be specific and must have a community purpose and it must flow from all directions
	2	Test scores will improve if teachers put time into their lesson plans, incorporate activities to make learning fun, stay after school or come early to help students that are struggling, and communicate with parents on a regular basis
	3	It is vital that the principal reach out to the staff, students and community in building positive relationships
	4	I would allow teachers to visit other schools to pick up ideas and resources and also work on grants to obtain tangible items
	5	The first action is to get parent, teacher, student, and board member representation on a team to develop a realistic mission and vision for the school
	7	I would begin by having the teachers view successful teaching teams and giving them the opportunity to visit other schools that have seen success
	Question	The principal forges paths through boundaries into groups within the school community.
Networking		
	1	The communication must be specific and must have a community purpose and it must flow from all directions
	3	Many local universities can also provide assistance and training for teachers in reading assessment instruction
	7	I would begin by having the teachers view successful teaching teams and giving them the opportunity to visit other schools that have seen success
	Question	The principal seeks to increase the size and strength of the number of connections within the network embedded within the school community.
Partnerships		
	1	They also need to know why their support of the school is important
	2	Communication means informing parents about the positive and the negative, and always start with positive communication
	3	Many local universities can also provide assistance and training for teachers in reading assessment instruction
	3	I would work on establishing a business partnership with a few local businesses that can in some way assist in working with us to meet our goals and objectives
	4	I would do this collaboratively with all partners and stakeholders involved
	Question	The principal pursues partnerships with other entities within the school community.
Buy-In		
	1	The success of every student at this school depends on getting the personnel to understand that we're all in this together for the benefit of all students
	2	If teachers feel that they have written a working curriculum instead of something written for the district because one has to be in place, they again will take ownership in this document
	3	The challenge for the principal is to be able to articulate this vision, provide a roadmap of how this can be achieved and involve the staff in the planning process

	4	The grants would enable me to pay staff well to attend such events that greatly enhances teacher attitude and staff buy-in
	6	Find out what staff members you need to work on to get them on board
	Question	The principal seeks buy-in to the direction of the building from all participants.
Ownership		
	1	The teacher's need to know it's nothing personal, because we are all in this together and we are there as a support, not a hindrance to them
	2	This will bring the diversity of the school together to promote a feeling of ownership and pride so that students will want to do better and their parents will want them to do better
	3	I would ask for parent volunteers to work in offices, classrooms, teacher work room, etc. so they feel a connectedness to the school
	5	Tasks assigned to him/her need to make the assistant feel ownership as part of an administrative team
	7	The entire staff would develop a vision together. This would take input from the staff. Teachers need to have ownership in this vision
	Question	The principal turns ownership of the school over to participants.
Consensus		
	1	This can be a wonderful way to promote dialogue both vertically and horizontally and it reinforces the fact that we are all in this together!
	3	With teacher participation in the planning and implementation process, consensus can be achieved
	7	Once again it is not about the administrator telling everyone what to do, it is about the team as a whole collectively agreeing and holding each other accountable for those high expectations
	Question	The principal builds consensus for decisions with participants.
Sense of Belonging		
	1	Through PD, and constant reinforcement from administration, each staff member should realize the important role they provide in helping to set the environment for success
	2	If teachers aren't excited then students aren't going to be excited
	3	I would ask for parent volunteers to work in offices, classrooms, teacher work room, etc. so they feel a connectedness to the school
	4	I would begin these as Family Fun Nights which center around games and prizes
	Question	The principal fosters a sense of belonging to the school with participants.
All Stakeholders		
	1	Overall, this school needs to COMMUNICATE with everyone involved
	3	The purpose of this group is to share concerns and information from all constituents as it relates to relevant educational expectations
	4	I would do this collaboratively with all partners and stakeholders involved
	5	Performance is obviously an issue at Rocky Falls. All stakeholder must realize this is a slow process and miracles will not happen over night
	Question	The principal involves all stakeholders in the process of improving student performance.
Parent Involvement		
	1	Good parental communication and involvement is also very important in this process
	2	Parent involvement can be difficult
	4	I would address sociocultural boundaries and relationships by parent involvement activities

	5	Successful sports teams and clubs are a good ways to gain parent involvement and public support
	Question	The principal seeks innovative ways to involve parents with the school.
Teamwork		
	1	Once again, the concept that this is a TEAM effort and everyone has to be on board to make this school a success is ALL important.
	2	Invite professionals to your school to speak to everyone instead of just sending a few staff members to workshops outside the district
	3	The membership would be made up of community members, business leaders, a diverse parent representation, staff, teachers and students
	4	My first approach would be to set up some fun, team building activities with staff
	5	Workdays need to be done as a team and teachers need to be charged with a specific task for the day. Spending the day working in classrooms is a waste of the day in regard to student instruction
	7	This would include teambuilding activities, relationship building, and trust
	Question	The principal uses teambuilding to support efforts to improve student performance.
Relationships		
	2	Students will achieve more if they know that the school cares
	3	It is vital that the principal reach out to the staff, students and community in building positive relationships
	3	I am a strong proponent of the work of Dr. James Comer at Yale University. His main precept for student learning is "No significant learning occurs, without a significant relationship."
	5	As teachers are preparing rooms for the start of the school year, a principal should get to each classroom and talk with each teacher (in their classroom) and through informal visitation, try to gain knowledge of their concerns, philosophy, and thoughts on morale, student performance, leadership and school atmosphere
	6	It would also motivate teachers to spend more time at school with students
	7	The relationships that we build within our staff and with our students is the number one way to facilitate change in a low achieving school
	Question	The principal promotes relationship building between staff and students.
Alliances		
	1	They also need to know why their support of the school is important
	5	The assistant will have allies (most likely the older teachers) and he/she can be a productive asset or a pot stirrer. He/she needs to be handled with finesse and caution
	6	Also it will give you a chance to see what staff members you can count on to help you in the change
	Question	The principal builds and monitors alliances that exist within the building.
Individual Attention		
	1	Good instructional aides can be utilized to individually work with kids who need the help
	2	Test scores will improve if teachers put time into their lesson plans, incorporate activities to make learning fun, stay after school or come early to help students that are struggling, and communicate with parents on a regular basis
	3	Students could be given more one on one help during these times by teachers
	7	I would want to analyze the amount of student engagement in the classroom, how the individual needs of all students are being met, discipline procedures (students need to be in the classroom in order to learn) and instructional strategies for the under resourced learners

	Question	The principal ensures students receive individual attention from staff within the building.
Caring		
	2	I feel that all the people employed at a school district should treat the students as if they were their own children
	2	The school should be a professional place where learning and caring are promoted by the entire staff
	Question	The principal encourages a caring atmosphere within the school.
Resolve		
	1	No one would be safe from scrutiny
	2	The principal is going to have to set some rules about attendance. Arrival and dismissal times should be stated in the faculty handbook and the principal needs to ensure that these rules are followed or take appropriate measures. Teachers should not have the option of leaving inadequate lesson plans. Evidently the teacher does not reprimand their class upon returning about their unruly behavior for a substitute
	3	I would hold teachers to the times in the contract, usually to be at school for 30 minutes before and after school
	4	I would stress to all staff that achievement data and MAP scores are EXTREMELY important
	5	The new principal must go into the district with a clear plan and goals
	7	I would not want to wait until the MAP test to determine if our students were learning or not
	Question	The principal shows resolve in his or her efforts to affect student performance.
Non-negotiable		
	1	They work under my direction so if there are any uncooperative staff members, they would have to answer to me, not them
	2	The principal is going to have to set some rules about attendance. Arrival and dismissal times should be stated in the faculty handbook and the principal needs to ensure that these rules are followed or take appropriate measures. Teachers should not have the option of leaving inadequate lesson plans. Evidently the teacher does not reprimand their class upon returning about their unruly behavior for a substitute
	Question	The principal presents certain non-negotiable expectations to staff.
Altruism		
	1	The success of every student at this school depends on getting the personnel to understand that we're all in this together for the benefit of all students
	2	It appears that the staff has some experience and knowledge in their background but have become sedentary and complacent
	3	The central focus the principal must keep in the forefront is what is best for students
	5	Student performance is why educators go to work
	Question	The principal has and expects altruistic behavior from self and staff.
Sense of Purpose		rewrote question
	5	Student performance is why educators go to work
	Question	The principal fosters student performance as the sense of purpose among participants within the school and community.
Resources		combined with "Professional Development" and "Time"
	1	Through PD, and constant reinforcement from administration, each staff member should realize the important role they provide in helping to set the environment for success
	2	Again offer incentives for the class with the best attendance for parent-teacher conferences, parent-teacher organizations or booster meetings

	3	This does not happen over night because it takes continued conscious effort by the principal to provide the training, resources and trust building so that together we can achieve great things
	4	The grants would enable me to pay staff well to attend such events that greatly enhances teacher attitude and staff buy-in
	5	Improving facilities is only a small part of the big task of increasing teacher morale
	6	I would check into career ladder and after school tutoring pay for teachers
	7	I would begin by asking the Board of Education (hopefully with support from the superintendent) about allowing time for the teachers to meet collaboratively
	7	Teachers need to agree upon what the needs are based on the data and align their professional development to those needs
	Question	The principal provides professional development for staff.
	Question	The principal provides monetary incentives to staff.
	Question	The principal provides incentives to students for performance.
	Question	The principal provides classroom resources for staff.
	Question	The principal provides time for collaboration among staff.
	Question	The principal provides support resources for students such as tutoring, transportation, equipment, and materials.
Urgency		
	1	Everything would immediately have to be looked at in an objective and constructive way to change this trend
	2	It appears that the staff has some experience and knowledge in their background but have become sedentary and complacent
	7	What will we do for students who do not understand: Response to Intervention, Double and Triple Dosing for skills, Guided Study Hall, Success Rooms, NOT LEARNING IS A CRISIS!
	Question	The principal conveys a sense of urgency in improving student performance.
Catalyst		
	1	The success of every student at this school depends on getting the personnel to understand that we're all in this together for the benefit of all students
	2	Leadership would be very important
	3	If you don't do this, then nothing changes and there is no accountability
	6	Also it will give you a chance to see what staff members you can count on to help you in the change
	7	I would not demand that teachers change-I would work with them to find the ways in order to improve student learning
	Question	The principal serves as a catalyst for initiating and sustaining change.
Change Agent		combined "Challenge the status quo" into this category
	1	the administrator must be the initiator of this communication
	3	This is no small task, since you are challenging the status quo and providing a change in direction and purpose for Rocky Falls
	5	Performance is obviously an issue at Rocky Falls. All stakeholder must realize this is a slow process and miracles will not happen over night
	6	I believe that you need to not go in and make a bunch of changes until you have had a chance to see how things work to get a better idea of what things need changed

	7	This school is struggling and I would facilitate changed in a slow manner but have high expectations for student learning
	Question	The principal acts as a change agent driving necessary improvement in student performance.
	Question	The principal challenges the status quo within the school.

VITA

Kevin Travis Goddard was born in Springfield, Missouri on May 17, 1975 to Walter, Jr. and Carol Goddard. Kevin attended Republic R-3 School District from kindergarten through high school graduation in 1993. Kevin went on to attend the following institutions and earn the following degrees:

- B. A. in English and Secondary Education with Honors in 1997 from Drury University in Springfield, Missouri.
- M. S. in Education in Secondary Administration in 2001 from Missouri State University in Springfield.
- Ed. D. in Educational Leadership and Policy Analysis with an emphasis in the school superintendency from the University of Missouri in Columbia, Missouri.

In 1997, Kevin began teaching art in grades seven through twelve in Mountain View, Missouri where he met his wife, Melanie, and began a family. Kevin also taught secondary art in Licking, Missouri. In 2001, Kevin took his first middle school principal position in Linn, Missouri in grades 6 through 8. In 2003, Kevin accepted a middle school principal position in St. Clair, Missouri and began working on his doctorate. In 2006, Kevin moved his family to the Zuni Indian Reservation, New Mexico to live in the Zuni Pueblo and serve as the intermediate principal grades 5 and 6. In 2007, Kevin accepted the superintendency in Eminence, Missouri and moved his family back to the area where his wife was born. Kevin and Melanie have 8 children, 5 of which have been born during Kevin's doctoral studies. During Kevin's time in the classroom and principalship, he worked with many marginalized students from low-income families and conducted trips during the summers to Chicago, Washington D.C., and Santa Fe, New

Mexico to help those students and families build sociocultural capital which ultimately led to the study of emergent leadership in high-performing, high-poverty Missouri schools. At the finish line, with less than a week's worth of writing and revisions to be done over Christmas Break, on Christmas Day 2009 at 12:08 p.m. a mile away from a family dinner, the Goddard ten hit a patch of ice and rolled their van two and half times and came to rest upside down. Everyone walked away from that wreck despite concussions, cuts, bruises, and other bodily damage and the van being totaled. This study would not be complete without acknowledging that God is good and miracles do happen.

Upon completion of his Doctor of Education degree, Kevin T. Goddard plans to pursue a superintendency in a metropolitan, high-poverty district while his wife finishes her college education to become the first person in her family with a bachelor's degree. Kevin will apply his understanding of leadership policy, analysis, and emergence in complex learning systems to foster the capacity for emergent leadership within Missouri's public schools.