

PERCEPTIONS OF STIMULANTS AND BARRIERS TO CREATIVITY IN THE WORK
ENVIRONMENT WITHIN A SCHOOL BUILDING

By

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Abstract

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The purpose of this single case study was to investigate a work climate in a secondary school to determine if work-climate effects produced teacher generated creative outcomes.

Teachers interacted within their school work-environment and formed perceptions about social and contextual influences such as management practices, organizational encouragement, and resources. When teachers perceived work environmental factors as stimulating creativity, their behavior was directed toward creatively solving school problems at the individual, group, and organizational levels. When teachers perceived work environmental factors as a barrier, teacher creativity was thwarted. This study used both quantitative and qualitative approaches.

Quantitative data was collected using the KEYS® survey, which measured work climate variables that produce creative outcomes. Additionally, the KEYS® survey measured the degree to which teachers believed their work was creative and productive. Qualitative data was collected and triangulated to shed additional light on how and why teachers perceived their work-climate as stimulating and impeding their creativity.

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Dedication

This dissertation is dedicated to my mother, Sonia Sue Bronson-Audet. My mother was born in an era when women of grace gave themselves completely to their husband and children rather than to academia and corporate life; it was a time when women's selflessness was considered noble. She decided to stay home and invest her creativity in her family, relishing on their accomplishments and successes instead of her own.

Her intuition was without question the strongest of her abilities; she knew when to push, when to hold and when to let go. She was the pillar and lighthouse of devotion to all her children, and to me especially, as she shared small bits of herself through many hours of conversation and laughter, for that I am very humble and privileged to have shared with her.

My mother knows about creative environments and how they act as stimulants and impede individual and collective creativity. She contributed to this dissertation in spite of her macular degeneration, every inch of the way, chapter by chapter, listening to me while I read to her. She would listen carefully but not quietly, often interrupting with sound advice. As chapters were written, my mother became familiar with this body of knowledge. She routinely cited her favorite creativity researchers while she gave me constructive and critical feedback. This dissertation never would have been completed without her role modeling, support and complete faith in my ability. Because she continuously creates a family environment that stimulates my creativity, I became interested in conducting research on a creative school work-environment that asked and answered important questions for those who are concerned about the creative potential in all children and for that I am eternally grateful.

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Chapter I: Introduction and Historical Background

Introduction

A person thinking about the concept of creativity in schools might conjure up images of talented and gifted students engaging in music and art or the whimsical nature of students playing in the schoolyard. Creative behavior in schools, however, is more than students painting swirls in bright colors and role-playing with imaginary friends. Creativity also occurs in adult work situations that involve teachers working with colleagues across subject domains. Teachers might work with a partner to prepare authentic learning activities that engage students as they encounter and struggle with complex questions and carefully designed tasks. A group of teachers might together design unique learning experiences that reignite interest in twelfth graders who are no longer interested in learning or attending school in the weeks leading to graduation. Regardless of the creative potential, many educators view creativity as frivolous and may not realize its value (Smith & Smith, 2010).

Teachers have enormous responsibilities and creativity may not be a high priority list item (Beghetto, 2010). Creative endeavors can appear disruptive to traditional learning processes. What's more, educators have focused on a narrowed curriculum in an effort to minimize the gap in student proficiency levels (Brooks, Hughes, & Brooks, 2008). Now that we are well into the 21st century, school administrators, teachers and students will increasingly need to generate creative ideas as they solve problems in a world Friedman (2007) described as flat as a metaphor for viewing the world as a level playing field, in terms of commerce, where all competitors have an equal opportunity. When teachers perceive their school work-climate as having high expectations for content expertise and as a stimulant to their creativity, they are more inclined to reframe their work with a wider lens and focus on student skills that include

both essential knowledge and creative problem solving abilities. Provided below is a vignette that situates an actual creative outcome from the school in which this research was conducted.

This school has a work climate that teachers perceive as supportive to their creativity and is based on an actual interview with Jillian, a high school teacher.

Vignette

The Star of India, the world's oldest active sailing ship, rocks gently side to side on the San Diego Bay. This ship became the center of a project in which students learned across curriculums and now that our students' projects are exhibited in her gallows below, I feel inspired and proud. Months of creative planning with four and more teachers, we worked collaboratively so that our students could embark on a voyage of the imagination and to engage with our maritime instructors, raising sails, loading cargo and protecting the vessel from "pirates" while navigating their way. As I sit upon a worn leather stool, gazing out of one of the many copper and bronze portholes, I sense my commitment to this job growing stronger with each project because I have the freedom to choose which project I will teach. Motivated by freedom, our forefathers sailed on this ship and some paid their lives for freedom.

Voices rise and meander down the hatchway to where our students' exhibition waits for curious tourists. Our students from math class made sextants and learned position-fixing techniques between celestial bodies. In addition, our students researched and assumed a character for their humanities class and while in character, wrote in their log journals in math and created original math problems to help solve problems they would have encountered on their ships. We sailed San Diego Bay as our students worked the halyards and helm. While some students navigated the ship, others measured depth of the ocean and reefs we sailed between, calculated weight of cargo, length of masts and sails needed, knots of wind and water. Our students helped to raise 7000 square feet of sail to explore the cross-curricular content, like the physics of sailing while mastering practical knots and maneuvering a 100-ton vessel. During the three-day sailing trip, students snorkeled and collected plankton for the city biologists "it was amazing".

We became so excited about this project that many of us spent our weekends, on site, preparing for our voyage. Our students helped paint the walls in stripes, the art teacher spent a lot of time with our students in conducting research on the era and style of the period-it was a phenomenal exhibit and the kids were so, so proud of it. Because of our creative ideas, our students were immersed intellectually, physically and emotionally in all the shipboard activities, which included hoisting barrels and sails, riding a boatswain's chair, singing chanteys, standing night watch, and swabbing the decks.

As teachers, we gather the collective wisdom of each other's ideas, "how we're going to get this done?" "What I am going to do?" and feeling free to ask, "what do you think?" and "what are the holes I haven't thought of?" The beauty of working at our school is that the teacher doesn't need to know how to do everything. We're willing to help each other persevere through challenging problems and I can really rely on our team members-you have partners that know things that are specific to their subject area and we balance workloads because we trust the other to pull their weight. It's exciting! Every time you do a new project, you're taking a risk and that's what I love about our jobs.

Our school expects creativity at least on the part of the teacher and student and that is important. Without an expectation for creativity, the Star of India would never have been built by people on the stocks at Ramsey Shipyard in the Isle of Man in 1863 because iron ships were experiments of sorts back then, with most vessels still being built of wood. Creativity also means we will fail from time to time, yet there are lessons in failure. That's part of the learning experience and the kids need to learn from us by looking back and learning from their failures.

People, including our school leaders, who came to see the ship gave teachers and students so much recognition for their great exhibit, they loved it and we heard often "Thank you that was so helpful", and for me that's the reward, spreading good work. One teacher from another school loved the character profiles the student's created depicting the life aboard that was especially hard on the emigrants. There is no "competitive thing" among the teachers, I said yes to all her requests "I really like the project you did, can I have it, or do you have any rubrics I can use?" The Star of India was not only our student's exemplary exhibit, but was a challenging adventure that brought out the best in the teachers, where we collaborated while we designed, shared, and learned together.

Jillian's preferred teaching domain is mathematics and she especially enjoys teaching students how to solve problems using operations involved in calculus. Just as important, she is intrinsically motivated to work with partners to design and facilitate student project-based learning. Jillian and her colleagues came alive under certain creative-enhancing forces that invigorated them, and they became better at multiple aspects of their practice because confidence and attitudes improved. Teachers were expected to work in groups to design challenging curriculum and learning activities in creative ways. Jillian perceived her environment as supportive and stimulating when she was given autonomy and freedom to choose work projects, felt safe to risk and fail, viewed top management as supportive and interested, and received necessary resources for her work project. This dissertation research investigated the high school setting where Jillian worked, and the researcher examined climate dimensions that both stimulated and inhibited creativity. This research utilized a mixed-methods single case study that examined 1) the degree to which climate conditions impact creativity through the quantitative analysis of survey data and 2) explanations for how and why creativity of teachers operated in the setting.

This single case study supported findings by Amabile, Conti, Coon, Lazenby, & Herron (1996) about the effects of work environment on employee creativity. Management practices, organizational motivation, and sufficient resources stimulated teacher creativity, whereas organizational impediments and workload pressures impeded creativity. Surprisingly, teachers perceived freedom as having an unusually high stimulating affect, and, just as surprising, when teachers perceived important management behaviors such as the provision of recognition and fair evaluation missing, teachers reported negative comments and were less intrinsically motivated to engage in creativity.

Teachers perceived impediments such as unnecessary politics and harsh criticism from senior staff as an obstacle to creativity. This, in turn, caused some teachers to feel competitive and protective of their ideas and territory. These same tensions produced tremendous workload pressure for teachers to perform because of the real or imagined consequences from other staff members.

Not surprising, most teachers reported the need for more time to accomplish their work. However, teachers generally perceived sufficient resources to complete creative projects. All these contextual and social influences provided for a work environment that produced creative ideas and innovations. The vignette provided earlier is augmented in Chapter 4 with additional details of the kinds of creative outcomes produced as well as other findings from the investigation of perceived stimulants and barriers to a work climate at a public high school.

This opening chapter provides necessary background for considering creativity in schools and establishes the rationale for the current study. The first part of the chapter provides a background section that introduces the concept of creativity and explains how it operates at the individual, group, and organizational levels. Next, a brief historical perspective of school reform

situates the need for creativity as a school outcome within the accountability context, pointing to the growing desire but also to challenges that prevent this approach from taking hold. The second half of this chapter addresses the purpose of this study, implications for this research, a problem statement, the theoretical framework, dimensions of a creative environment, and the research questions for this investigation.

Creativity and Innovation

Creativity involves the generation of high quality, novel, and elegant solutions concerning procedures and processes appropriate to organizational problems and goals (Hennessey & Amabile, 2010; Mumford, Hester, & Robleo, 2011; Puccio & Cabra, 2010). A creative idea must be original and it must be useful or appropriate for the situation in which it occurs, and it must actually be put to some use (Hennessey & Amabile, 2010).

Creativity is often used interchangeably with innovation. Although innovation and creativity are theoretically and empirically linked, each is a distinct concept. Creativity is the generation of new and valued ideas whereas innovation is a process whereby a group seeks to achieve desired changes (West, 2002). Innovation is the intentional introduction and application of processes and products that change boundaries, job descriptions, and work flows that increase job effectiveness (Paulus & Nijstad, 2003). Innovative outcomes bring about benefits from new ideas and may include different distribution of economic resources, personal growth, increased job satisfaction, improved group cohesion, and productivity gains such as an increase in students' abilities to solve complex problems. Innovation is, therefore, the introduction of new and improved ways of doing things in a school. "Innovative schools are organizations where group creativity is the main driver of new knowledge and innovation" (Puccio & Cabra, 2010, p. 147). Innovation, as an area of inquiry, is beyond the scope of this dissertation.

Major Levels In An Organization At Which Creativity Forces Operate

In past studies on creativity, researchers primarily attempted to understand creativity by examining experiences of people throughout history who were considered highly creative, such as Albert Einstein. Individual creative behavior is a function of antecedent conditions, creativity, personality, knowledge, intrinsic motivation, and cognitive styles (Hennessey & Amabile, 2010, Runco, 2004; Woodman, Sawyer, and Griffin, 1993). Barron & Harrington (1981) summarized the research by indicating that creative individuals have a high valuation of aesthetic qualities in experience, broad interests, attraction to complexity, high energy, independence of judgment, autonomy, intuition, self-confidence, ability to resolve antinomies or to accommodate apparently opposite or conflicting traits in one's self concept, and finally, a firm sense of self as "creative" (Runco 2004). Amabile's model of individual creativity depends on three components within the individual: 1) Expertise: the knowledge and skill in the specific area where the individual is trying to do creative work. 2) Creativity Skills: the techniques for taking new perspectives on problems, for incubating and persevering on difficult problems, and for taking risks with solutions to problems. 3) Task Motivation: the desire to solve the problem or do the task because it is interesting, involving or personally challenging more varied the members of this particular set, the greater the individual's response possibilities. Individuals work in groups to solve problems specific to the school (Shalley & Gilson, 2004). Amabile (1988) viewed individual creativity as a central building block in her organizational theory of creativity.

"Most creative work that gets done in organizations is accomplished by two or more individuals working closely together" (Hennessey & Amabile, 2010, p. 580). The group in which individual creativity occurs establishes the immediate social influences on individual creativity. Proponents of group creativity acknowledge that group creative efforts are best suited

for complex organizational problems with multiple parts that span several domains (Levine & Lezotte, 1995). In addition, group creativity is influenced by group composition (e.g., diversity), group characteristics (e.g., cohesiveness, group size), group processes (e.g., problem-solving strategies, social information processes), and contextual influences stemming from the organization (Woodman, Sawyer, & Griffin, 1993, p. 304).

Woodman et al., (1993) describe organizational creativity as “the creation of a valuable, useful new products, services, ideas, procedures, or processes by individuals working together in a complex social system” (p. 293). Organizations, like individual creativity, have elements from each of the same three components that define creativity: expertise, creativity skills, and task motivation in their work environment. Amabile’s Theory of Creativity and Innovation in Organizations (Amabile, 1988) interact to develop the individual's role in the creative process through three domains: expertise and resources in the task domain, creativity skills and management practices, and task motivation and organizational motivation to innovate.

In summary, scholarly research on creativity is proliferating and creativity researchers hope to address myriad problems facing our schools and medical facilities, our cities and towns, our economy, our nation, and the world (Hennessey & Amabile, 2010). This dissertation focused on a work climate that supports creativity with creative forces nested from the individual level, to the group level, to the organizational level in a school environment. This study investigated work climate dimensions and social influences in a public school that act as stimulant or impediment on the productivity of teacher generated creative ideas and innovation. Future oriented organizations benefit from creative outcomes, especially when those outcomes are aligned with specific missions, beliefs and goals. However, most research has focused on the private sector, citing needs within a highly competitive global market. Research on public school work climates

that produce creative outcomes has been slim, suggesting there is less understanding and value for a school work-environment that produces creative outcomes.

Historical Background

Creative and innovative approaches to school reform are best understood and appreciated within a larger context of school reform, including those within the private sector. The following sections outline a brief historical review of various reform efforts that influenced education, generally, at the federal, state, and local levels and how schools responded to those efforts, including those factors that acted as a stimulant or impediment to innovation and creativity within organizations.

School vision and standardization of practice were topics for school improvement even in the early years. Tyack and Hansot (1986) describe a stream of changes in public schools, beginning with tensions between local autonomy and the federal government's desire to standardize schools. One such early reform effort was The Common School movement, built upon the theory that schools should have a commonality in "beliefs, aspirations and values" Gutek, (1995, p. 456). Reformers such as Mann and Barnard believed common schooling could create good citizens, unite society and prevent crime and poverty (Williams, 2001). As the first Secretary of Education, Mann believed a common school would be the great equalizer of people. Mann hoped that poverty would disappear as a broadened popular intelligence tapped new treasures of natural and material wealth (Williams, 2001), introducing the idea that education could improve life for all children.

In 1966, however, "The Coleman Report" suggested that schooling was less important than students' families, the community in which they live, and their socio-economic status as a primary determinant of their academic potential (Coleman, Campbell, Hobson, McPartland,

Mood, Weinfield, & York, 1966). The student composition of the school, the student's sense of control of his/her environment and future, the verbal skills of teachers, and the student's family background were more important to achievement than the school institution, whether for white or black students.

However, scholars and practitioners refuted the claim that schools have little impact on student achievement. Beliefs in the power of schools led to the debate about equalization, and, soon after the Coleman Report was published, Effective Schools research began. Ronald R. Edmonds, with colleagues, introduced evidence that schools could be changed – reformed – to become effective schools for all students, no matter their cultural or socio-economic background. This research focused on the role of the school principal as primary influence on raising student outcomes (D. U. Levine & Lezotte, 1995). Research by Edmond and others came to the same conclusions: given certain organizing and cultural characteristics found in the researched schools and their districts, all children can be taught the intended curriculum and held to high academic standards and the school controls the factors necessary to assure student mastery of the core curriculum (Edmonds, 1979; Lezotte, 1995; C. E. Shalley, 1995).

Research by Edmonds, Brookover, and Lezotte, in the Effective Schools Movement, replaced a vision of despair for many students in most large cities and rural poor and urban districts with a vision of hope that every student could become successful. Similar research, though in secondary schools, took place under another team of researchers in the United Kingdom (Reynolds et al, 1996) pointing to a set of school attributes that appeared to positively affect student achievement. This research lead to further discourse among North American scholars and practitioners that included variables within schools which could help these become more effective and creative in solving school wide problems, all of which were dependent on the

efforts of effective school leaders. Researchers found that all of these especially-effective schools had strong instructional leadership, a strong sense of mission, demonstrated effective instructional behaviors, held high expectations for all students, practiced frequent monitoring of student achievement, and operated in a safe and orderly manner. These attributes eventually became known as the Correlates of Effective Schools (Levine & Lezotte, 1995).

With much research attention to effectiveness, however, only incremental gains were made across the content domains, and an even larger achievement gap was created among racial lines and students from low socio-economic status (Levine & Lezotte, 1995; Puccio, Murdock, & Mance, 2006). Soon, federal recommendations were issued stating that school systems should improve and standardize what and how students learn. In 1983, "A Nation at Risk: The Imperative for Educational Reform" catalyzed change in the public schools for higher standards, higher graduation requirements, standardized curriculum, increased teacher and student testing, and higher certification requirements for teachers. The report found a "rising tide of mediocrity" that threatened the nation's future (source).

Specifically, the commission recommended tougher high school graduation requirements, more rigorous and measurable standards of student performance and conduct, more time devoted to learning, better teaching and teacher preparation, more effective school leadership, and greater fiscal support. The report elicited criticism of schools from the public and initiated a review of US schooling, subsequently bringing pressure for the development of standards-based-curriculum and instruction. Standards-based tests affected the role of teachers, how they taught curriculum in the classroom, and how administrators assessed teacher performance on the implementation of those standards (Hosford, 1984).

In 2001, the No Child Left Behind (NCLB) Act solidified this approach, emphasizing student achievement, increasing teacher accountability to improve student learning and prioritizing data from standardized testing as an educational outcome. Since the passage of NCLB, states created or expanded their testing and accountability systems. Districts and schools revised their curricula, expanded programs for struggling students, and reorganized instructional time to meet the law's Adequate Yearly Progress (AYP) requirements. Teachers changed how they teach, and students take more tests than ever before (Center on Education Policy, 2007). At the Federal level, there are now content standards for student knowledge, performance standards regarding levels of student mastery, and opportunity-to-learn standards governing conditions of learning. States reinforce the new standards through equally new performance accountability systems composed of various public reporting requirements and performance tests, some tied to school rewards, sanctions, or state interventions to assist failing schools. NCLB adopted a systemic perspective on education change, pursuing greater coherence across the gamut of learning goals, curriculum changes, professional development, accountability assessment, and governance arrangements. Simultaneously, other governance concerns spawned unrelated experiments with charter schools, contracting, and forms of privatization (Plank & Ginsberg, 1990). Although charter schools and other private schools expanded during this time, public schools remained bound with work conditions that stifled the motivation that could potentially help lead to creative problem solving (Amabile, Conti, Coon, Lazenby, & Herron, 1996).

A recent educational policy emphasizes the importance of teachers' ideas and how they contribute to school improvement. In 2009, President Barack Obama and U.S. Secretary of Education Arne Duncan announced that states leading the way on school reform would be eligible to compete for \$4.35 billion in Race to the Top competitive grants to support education

reform and innovation in classrooms. This latest reform effort puts even more importance, or accountability, on state test scores and administrators and staff face removal from their schools when school performance is consistently low. A highlight of the policy is the linking of student performance to teacher evaluation, and the question for many researchers and practitioners is the possible adverse consequences of this linkage. The reform effort may make current standardized tests of basic skills more important than ever, and schools interested raising scores might devote even more time and resources. NCLB may narrow the curriculum even more because of the link among wages, employment or termination, and scores. “Teachers will teach to the test. There will be more cheating, more gaming the system” (“Race to the Top’s Impact How Well Is the Program Working?,” 2012).

There is much in the public discourse emphasizing higher stakes for educators as a result of global competition. Tom Perriello, President and CEO of the Center for American Progress Action Fund, said “The global economy we face today [requires] a level of creativity and innovation within our education system, one that we believe that our principals, our teachers, and our parents are up to if we create the incentives and the opportunities for that kind of innovation to take place (“Race to the Top’s Impact How Well Is the Program Working?,” 2012). How might it be possible for educational policy, such as Race to the Top, to imbue a school climate or environment with incentives for change, creativity and innovation, when the consequences of not meeting measurable, standardized goals could be detrimental to such an organization? This is the dilemma that this research explores. One possible way to facilitate a school climate conducive to creativity is to adjust the organization’s approach to motivation, specifically by creating the necessary environmental climate factors so that teachers can help shape the way their organization functions. The result could be a workplace where people feel better and are

more intrinsically motivated to engage in creative problem solving processes and goal attainment (Deci & Ryan, 2008). To design a creative organization where there is successful implementation of new programs, new product introductions, or new services, will depend on a group or team approach where the organization can learn and develop good ideas beyond their initial state.

Recent research concentrates on the creative work-environments in a multitude of organizations in the private sector (Gumusluoglu & Ilsev, 2009; Jung, 2001), yet a need exists for research to expand investigations in school environments. Researchers began to examine collective creativity and the creative environment, yet there remain few empirical articles and scholarly books specifically on the subject of organizational creativity (Albert, 1969; Feist & Runco, 1993; Guilford, 1950). The central concern cited by private business for its interest in creativity is the organization's survival and competitiveness (Gong, Huang, & Farh, 2009; Gumusluoglu & Ilsev, 2009; Jung, 2001; Lee, 2008). Access to information that empowers customers to demand product features, higher quality, better service, and favorable price/cost ratios are examples of businesses looking for an advantage in a globalized economic environment. The central concern for schools might be creating a work-environment that stimulates teacher creativity to solve school-wide problems including creative learning activities for students. When leaders and followers share and improve creative ideas that solve school-wide problems, outcomes ranging from incremental improvements to organizational breakthroughs are more likely to occur (Nijstad & Levine, 2007). Given the potential impact of collective creative efforts, time is well spent improving the relationship between the organizational context and creativity (Paulus, 2000).

The historical review of legislated and recommended reform mentioned highlights various school conditions that improve student learning outcomes, including shared mission, strong leadership, high expectations for students, effective instruction aligned to standards, frequent monitoring and accountability for results. Even with research support for some approaches (and as the result of unintended consequences of some approaches), educators have not arrived at a formula for schooling that works in all contexts and for all students.

Increasingly, there is policy encouragement for the opening of charter schools – either as stand-alone schools or as part of a network of schools – to serve students and communities, often for the most at-risk populations. Charter schools often take an innovative approach to schooling in support of a well-defined mission. The charter school that is the subject of study in this dissertation embraces a creative approach to teacher and student work. The site was chosen because it was a likely setting for exploring the extent and character of its work climate. A creative work-climate encourages intrinsic motivation, meaning that teachers are self-motivated. In the vignette at the start of this chapter, the teacher perceived her environment as supportive and stimulating when she was given autonomy and freedom to choose her own work projects, felt safe to risk and fail, viewed top management as supportive, interested, and forthcoming with authentic recognition and received necessary resources for her work project.

Although research and models of creative work-environments exist, we face challenges scaling the research from the private sector to the public sector and from one school to another. The work-environment, comprised of variables identified in school reform, has a major influence on whether creativity will either be perceived as stimulating or inhibiting, thus creative outcomes will either be creative or repetitious (Mumford, Scott, Gaddis, & Strange, 2002).

Challenges to Creativity

Creative and innovative pursuits in education are often at odds with traditional school improvement efforts. Creative schools are managed differently; creative ideas in traditional schools are often discouraged and undervalued; knowledge about creativity (its definition and constraints) is surprisingly slim; and limited research guides the development of a creative school work-environment. Additionally, a body of knowledge suggests that unintended consequences of NCLB provide many schools with a step in the wrong direction when considering the impact on work climate and teacher morale.

There are two models that provide theoretical frameworks for creative work environments, but the assessment of school-work-environments for creativity is slim (Amabile, 1988; Woodman, Sawyer, Griffin, 1993). These two conceptual models of creativity argue that, first, creative individuals provide the basis for a creative work group (Woodman, Sawyer, and Griffin (1993) and, second, the social environment and the work environment can influence the creativity of individuals and teams (Amabile, 1983, 1988).

In the first model, Woodman, Sawyer, and Griffin (1993) presented an Interactionist model of creativity, which was based on earlier work by Woodman and Schoenfeldt (1990). In this model, they describe creativity as "complex interaction of person and situation ... repeated at each level of analysis" (Woodman et al. 1993, p. 296). Their model further describes the "social influences" and "contextual influences" that affect creativity at the individual, group, and organization levels. The second model was developed by The Center for Creative Leadership and Dr. Teresa Amabile, who studied 186 groups in over 200 organizations using the KEYS® survey, but their only measurements in education resulted in the study of 11 employees in a county educational organization, 17 employees who work for a family foundation, 168 employees who work for a state education department, and 37 employees who work in a

university group. In a variety of settings, Amabile's study (1983) found that "the intrinsic motivation principle [is] the cornerstone of the social psychology of creativity" (1983, p.15) and that personal interests in creative actions can be diminished if an individual attends to extrinsic rewards and/or evaluations linked to creative performance during a behavior episode (Amabile, et al, 2007)).

A growing body of literature suggests unintended consequences from this top-down orientation as having a negative effect on school leaders and teachers (Shaker & Heilman, 2008). Teachers spend a major part of their adult lives in school activities and, for many, the job of teaching is more than earning an income. Teaching can either be rewarding, self-fulfilling and challenging or tiring and burdensome (Bandura, 1997). A teacher's sense of wellbeing is largely determined by the organization's goals (Brophy, 2004) and, when given the chance, people typically choose courses of action that bring satisfaction and sense of self-worth. However, NCLB goals are prescribed for public, and charter schools, teachers and their leaders are held accountable, with threats of sanctions, to close achievement gaps between minority and majority populations.

In a two-year case study on teachers' response to the pressures of NCLB, in a single public high school, findings suggest teachers experienced alienation in the forms of powerlessness, meaninglessness, isolation and estrangement (Brooks et al., 2008). Moller and Deci (2010) suggest two important conceptual patterns: (1) the relation between the experience of interpersonal control and a tendency toward interpersonal violence; and (2) the relation between experiencing interpersonal control and the experience of dehumanization. Further, they introduced evidence for an important new conceptual connection relating the experience of interpersonal control to the experience of dehumanization. The policies and reports mentioned in

this research, such as The Coleman Report, The Effective Schools Research, A Nation at Risk, and NCLB, were intended to improve some aspect of American Education. These policies and reports did change, and, in most cases, improved the educational landscape and what goes on in the classroom, yet none addressed the intrinsic motivation that provides teachers the freedom to choose their own work projects, feel challenged by their work, be recognized for their creativity and productivity, feel supportive by their boss, and encouraged to solve problems and to take risks.

Problem Statement

Creative and innovative pursuits in education seem to be at odds with the notion of traditional schooling. Well-intended policies have identified important variables inside a work environment and have unintentionally shifted focus away from creativity and toward the political agendas that arose from concerns of the time. Even now, national standards and high-stakes tests encourage teachers and students to spend more time on subjects in the core, and what distinguishes high performing schools from low performing schools is the proportion of students mastering content knowledge. Creativity values novelty more than conformity, but, rather than viewing the relationship between traditional schooling and 21st Century learning as being at odds with each other, another view can be that that each approach is complementary to the other.

Purpose of this Study

The purpose of this study is to investigate work climate dimensions and social influences in a public school that stimulate or impede the productivity of teacher generated creative ideas and innovation. Future-oriented organizations benefit from creative outcomes especially when these are aligned with specific missions, beliefs and goals. However, most research has focused on private sector work environments citing the need to compete in a highly competitive global

market. Research on public school work climates that produce creative outcomes has been slim, which suggests there is less understanding and value for a school work-environment that produces creative outcomes.

Beghetto (2010) suggests that educators need to prepare today's children for tomorrow's world by providing the skills requisite to competing in an economy that prizes innovation: critical thinking, problem solving, communication, collaboration, and creativity. To do that, educators must explore and clarify the connection between learning and creativity, which is particularly important given that student learning is the core responsibility of teachers. However, in order to sustain creativity in classrooms throughout a school, the work environment must be perceived by teachers as supportive of their own creativity.

Amabile identified management practices, organizational motivation, and resources as three empirically tested work climate dimensions that positively and/or negatively affect creativity in the work place. In this single case study, the work climate was investigated to determine the effect on teachers' abilities to generate creative ideas and innovation within a secondary school. Although a variety of researchers (Amabile, 1996; Beghetto, 2010; Florida, 2003; Kaufman & Beghetto, 2009; Kaufman & Sternberg, 2010; Plucker & Makel, 2010; Runco, 2004; Sawyer, 2007) noted a need for creativity in the classroom, additional elaboration and empirical testing of a supportive work environment is needed. Unless educators, policymakers, and the general public can make a clear connection between creativity and learning, school work environments will continue to produce student outcomes measured by test scores without students' using their knowledge to solve complex problems in creative ways.

Theoretical and Conceptual Framework

The principle foundations of this study came from two theories of creativity. The first was Amabile's (1988) model of creativity and innovation, which served as the conceptual foundation for examining the impact of the work environment on organizational creativity. The second theory came from the system model of Woodman, Sawyer, and Griffin (1993), which introduced the perspective of interactional psychology with the integration of person, process, situation, and product into a comprehensive theory of organizational creativity. Woodman et al., (1993) and Amabile (1988) suggest the work climate is comprised of a conglomerate of variables within contextual and social influences and it is the climate effect that produces creative outcomes. Additionally, the Interactionist perspective explains human behavior in complex social settings. Woodman et al., (1993) contribute to this research by explaining that creative outcomes at the organizational level influence creativity at the group or team level, which, in turn, influences creative work at the individual level, and these influences extend to creative efficacy. Therefore, a creative outcome is the teacher's response to contextual and social influences as well as creative efficacy.

The purpose of this study is to investigate work climate dimensions and social influences in a public school that stimulate or impede the productivity of teacher generated creative ideas and innovation. Results from survey items were standardized and compared to the norm group, which was comprised of other highly creative organizations from several types of industries. A conceptual framework for this dissertation resulted from the integration of two existing conceptual models of creativity. First, creative individuals provide the basis for a creative work group (Woodman, Sawyer, and Griffin (1993) and, second, the social environment, the work environment in this case, can influence the creativity of individuals and teams (Amabile, 1983, 1988). This model (Figure 1, Appendix A) represents an Interactionist perspective on

organizational creativity. The selected dimensions of the work environment included stimulants and obstacles to creativity. Stimulants to creativity were organizational encouragement, sufficient resources, challenging work, freedom, work group supports, and supervisory encouragement. Obstacles to creativity were organizational impediments and workload pressure.

This model describes the ways in which creativity can be influenced by the intra-organizational environment. Amabile et al. (1996) created the survey that assesses the work environment for creativity by measuring employee perceptions of work environment dimensions. This same survey was purchased by the Center for Creative Leadership (CCL) and is referred to in this study as the KEYS® survey. Amabile's theoretical model proposes that creativity within an organization depends on four organizational components, each of which includes several specific aspects of the work environment (1988). In her model are the components for organizational management practices, organizational motivation to innovate, resources in the task domain, and creative outcomes (Amabile & N. Gryskiewicz, 1989). Her model depicts stages of the organizational creative process, including the initiation stage in which new ideas or products are generated. Figure 1 (Appendix A) is a representation of the conceptual framework, includes each of the two models, and displays the relationship between the four climate dimensions from Amabile's theoretical model and the interactions among individuals, groups and the organization. Additionally, the model includes attention to teacher perceptions of organizational creativity within the internal work environment, which is the focus of the study proposed here.

From a system perspective, creativity is nested within the organization. The Interactionist model shown in Figure 1 (Appendix A) organizes literature and research that focuses on individual creativity, group creativity, and organizational creativity. Teachers interact with their

work environment and contextual social influence found within management practices, resource allocation, and organizational motivation, which can either facilitate or inhibit creative outcomes. When teachers perceive their work environment as supportive of creative behaviors, creativity is stimulated and the behavioral potential for creative outcomes increases at the individual, group, and organizational levels.

This research gathered empirical data in order to examine the perceptions of teachers regarding the creative environment and those characteristics on organizational creativity that either contributed to and/or inhibited creativity within a school environment to help that organization solve problems in ways that were both novel and useful. Stimulants to creativity were organizational encouragement, sufficient resources, challenging work, freedom, organizational motivation, work group supports, and supervisory encouragement. The obstacles to creativity were organizational impediments, lack of resources, and workload pressure (Amabile et al., 1995).

Significance of the Study

The significance of conducting this research is to provide a clearer picture of the stimulants and barriers within the school's internal environment that can either promote or inhibit creativity within a work group or school organization in creating useful and novel ways to solve problems. That internal environment greatly influences a teacher's ability to be creative. The value of this research lies in its capacity to accurately identify necessary environmental conditions so others can intentionally plan and take action to support individual and group creative work, at least in the minds of teachers. When school leaders seek original ways to reach school-wide goals that are not readily apparent or previously established, teachers may or may not be inclined to participate (Amabile et al., 1996). The difference might rest on whether

several factors coincide to create conditions conducive to successful group creative efforts, and school leaders often can make that difference (Sternberg, 2006).

Research Questions

The work climate is a result of the personalities, policies, and interactions of people, from the principal to the teachers in workgroups. Creativity within the organization depends on MANAGEMENT PRACTICES (allowing freedom and autonomy in the practice of work; providing challenge; specifying clear strategic goals and forming work teams comprised of individuals with diverse skills and perspectives); ORGANIZATIONAL MOTIVATION (organizational encouragement and lack of organizational impediments); RESOURCES (everything the organization has available to aid in the area targeted for innovation, including time, funding, information and materials); and, CREATIVE OUTCOMES (creativity and productivity) (Amabile et al., 1995). This study addresses the following Overarching Research Question:

Overarching Research Question

How can school organizations create conditions where creativity-enhancing forces successfully operate and motivate teachers to help solve organizational problems by generating novel and useful ideas (Hennessey & Amabile, 2010)? A series of sub questions relating to the various domains of creative work guide the design and conduct of the study.

RQ#1: Management Practices. How and to what degree do school principal management practices impact a work environment where teachers perceive they have a sense of control over their work, work with challenging goals and important projects, are provided school leader (principal/school director) encouragement, and are provided work groups that are committed to generating creative ideas?

RQ#2: Organizational Motivation. How and to what degree does organizational motivation stimulate or impede creativity in a school organization? First, how and to what degree do teachers perceive organizational encouragement as stimulating or impeding individual and group creativity and how and to what degree do teachers perceive a lack of organizational impediments as stimulating or impeding individual and group creativity?

RQ#3: Resources. How and to what degree do resources stimulate or impede creativity in a school organization? First, how and to what degree do teachers perceive resources as sufficient to individual and group creativity and how and to what degree do teachers perceive realistic workload pressures as stimulating or impeding to individual and group creativity?

RQ#4: Creative Outcomes. How and to what degree do teachers perceive their ability to produce creative outcomes? First, how and to what degree do teachers perceive their ability to generate creative ideas and second, how and to what degree do teachers believe they and their organization are efficient and productive when working together to solve individual, group, and building-wide problems?

Organization of the Study

Chapter 1 of the study presents the introduction, the statement of the problem, the historical background of the study, the purpose of the study, the significance of the study, research questions, and the theoretical framework.

Chapter 2 presents a review of literature on relevant topics: Motivational theory, creativity, characteristics of a work environment including Management Practice (freedom, challenging work, managerial encouragement, work group supports), Organizational Motivation (organizational encouragement, lack of organizational impediments), Resources (sufficient resources, realistic workload pressures), Creative Outcomes (creativity, productivity). Chapter 3

illustrates the conceptual framework, the research methodology used in the study, the study's design and its related weaknesses, case study information, description of the instruments, the data collection procedures, the methods of analysis of the obtained data, description of the sample, and issues relating to study validity and reliability. Chapter 4 presents the findings of the study. Chapter 5 presents analysis, discussion, the significance of the study, implications for practice as well as conclusions and recommendations.

Statement of Intent

The purpose and intent of this study is to provide a clear “picture” of the work climate within a school work group or school organization. That climate, also known as the work environment, greatly influences employees' ability to be creative. The value of using both qualitative and quantitative data analysis lies in its capacity to accurately identify the conditions necessary for creativity and innovation to occur. The KEYS® survey tool is a reliable, valid, research-based tool that measures work environment characteristics that have an impact on employee creativity. KEYS® assesses perceptions of stimulants and impediments to employee creativity and employee beliefs about their creativity and productivity.

Chapter Summary

Early stages in the evolution of creativity research focused attention on the lone inventor's intelligence, personality traits, domain specific knowledge, and intrinsic motivation. Hennessey & Amabile (2010) explain that, in 1998, the *Creativity Research Journal* was the one periodical dedicated to the study of creativity. Since then, a variety of additional journals reporting new theoretical models, emerging, and expanding empirical investigations have also proven to be important for creativity research. Over time, conceptual models of creativity, ranging from the neurological unit of analysis to a systems approach were developed. Recent

research, including the organizational environment and the role the school leader, has emerged. These investigations concerned the organizational environment and the contextual variables in which people interact.

Deliberate climate creation will become a responsibility for school leaders as they incorporate collective creativity in their schools. Shalley & Gilson, (2004) suggest leaders within all organizations already create climate, whether deliberately or not. Creating a school environment that encourages creative behavior may be one of the greatest opportunities for principals who are interested in a creative response to external pressures and school improvement. School leaders have a variety of levers with which they can influence the environment: values and norms encourage creativity; the ways in which mistakes are handled in an organization determine whether teachers feel free to act creatively; and school organizations that reward success and acknowledge or celebrate failures will build a culture where people are willing to take risks and engage in creative efforts.

A work climate includes a number of variables with tensions among them. The climate must have high expectations for creativity and productivity yet allow employees the freedom to choose their own work projects. The leader needs to give constructive feedback and build trust. Additionally, creative people need recognition, but recognition and rewards are capable of killing creativity (Amabile, 1998). Tensions often need balance and creative organizations call for creative leaders who are experienced and wise. Too much or too little of anything is not a good thing. When management practices, organizational encouragement, and necessary resources are provided in the right amounts, a creative work-environment emerges, and teachers are more likely to be intrinsically motivated and committed to work with others to design challenging learning opportunities and solve complex building-wide problems.

Chapter II: Review of the Literature

Introduction

This chapter is a review of related literature that focuses on the various work environment dimensions that stimulate and impede creative work by teams of individuals. It examines the psychological context of creativity, the teachers' perceptions of the work environment in a school building that influence the creative work carried out in an organization (Amabile et al., 1996). Work environments have ten dimensions and this chapter is ordered in the same sequence as they are presented in the KEYS® survey, an instrument that measures the degree to which employees perceive their work-environment as stimulating and impeding their creativity: Freedom, Challenging Work, Managerial Encouragement, Work Group Supports, Organizational Encouragement, Organizational Impediments, Resources, Workload Pressure, Creativity and Productivity. This chapter concludes by synthesizing the related literature on the various work environment dimensions that stimulate or impede creative project work by teams of individuals.

Florida (2003) suggests that most everyone has creative potential and is occasionally involved in spontaneously satisfying activities because they are interesting, enjoyable, or positively challenging. This is the intrinsic motivation principle of creativity: "Intrinsic motivation, defined as the drive to do something for the sheer enjoyment, interest, and personal challenge of the task itself is conducive to creativity" (Hennessey & Amabile, 2010, p. 581).

The school setting, however, complicates motivational challenges. The nature of working in a high school context mandates that school leaders of innovation manage conflicts between the dual goals of content knowledge and the creative process. Teachers are expected to accept the goals of the organization and seek to develop strategies and solutions regardless of whether or not they enjoy the activities or would choose to engage in them given alternatives. Contextual

influences, such as class size, bell schedules, rewards and recognition systems, and the availability of resources affect morale and teacher motivation. Another complication is social influences on individuals as they engage in group-work while they solve problems of practice and school wide issues. The leadership challenge for an innovative school is to create conditions for an optimal work-climate that stimulates the initiation, direction, intensity, persistence, and quality of creative behavior and reduce barriers that impede them. To meet this challenge, effective leaders will balance the organization's needs with the basic human needs and create conditions that stimulate teacher creativity, minimize impediments to creativity, and reduce extrinsic motivators.

Innovation requires leader or management behaviors that are perceived as responsive to teacher needs. Behaviors, feelings, and attitudes distinguish life in an organization in that "each organization member perceives that climate, and can describe it in light of his or her own perceptions" (Ekvall, 1983, p. 2). At the individual level of analysis, the concept is called psychological climate. At this level, the concept of climate refers to the individual perceptions of the patterns of behavior. When aggregated, the concept is called organizational climate (Ekvall, 1996). According to contextual theories of organizational creativity, it is the psychological meaning of environmental events that largely influences creative behavior (Woodman et al., 1993). The theoretical issue of interest in this study is to identify and measure the degree to which and reasons why a school environment is able to stimulate people to make a choice to be creative; a conscious act that requires a leap from the known to alternatives (Pickard, 1990).

Management Practices

Management practices – freedom. Research suggests that creativity and innovation are fostered by a number of environmental stimulants. A particularly powerful stimulant comes from

the provision of employee freedom to decide what to do or how to accomplish a task. Closely related to freedom is autonomy, which is described as having a sense of control over one's own work and ideas, has received the most attention from researchers and theorists (e.g., Abbey & Dickson, 1983; Albrecht & Hall, 1991; Amabile & S. Gryskiewicz, 1987; Andrews & Farris, 1967; Bailyn, 1985; Ekvall, 1983; Monge & Cozzens, 1992; Pelz & Andrews, 1966; Paolillo & Brown, 1978; Siegel & Kaernrnerer, 1978; West, 1986). When employees perceive they have the freedom to decide what projects or work they are to do, they perceive their work climate as stimulating to their creativity. Therefore, it is important that leaders of innovative schools relate to individuals, encouraging self leadership, being responsive to their thoughts, questions, and initiatives and supporting the sense of choice (Amabile & Gryskiewicz, 1987).

Historically, researchers explained intrinsic and extrinsic motivation in units or amounts. Self Determination Theory (SDT) describes motivation as autonomous or controlled. Amabile et al., (1996) conducted a study of investment banking companies and suggested that managers who were more supportive of autonomy had employees who experienced greater basic psychological needs satisfaction, were more engaged in their work, sensed little pressure to meet some else's expectations, and had a greater sense of control over their own work, evidenced by greater well-being, and they had higher performance ratings than did employees without autonomy supportive managers (Baard, Deci, & Ryan, 2004). Woodman et al. (1993) cited that the creative performance of individuals in a complex social setting is a function of the sense of autonomy of individuals and the social influences that enhance or constrain individual creativity (e.g., group norms), along with the contextual influences that enhance or constrain individual creativity (e.g., organizational reward structure).

According to Deci and Ryan (2000), autonomous motivation is described as allowing people to participate in their own goal pursuit, which concerns peoples' ability to satisfy their basic psychological needs as they pursue and attain their valued outcomes. A full understanding of goal-directed behavior, psychological development, and wellbeing cannot be achieved without addressing the needs that give goals their psychological potency. Three psychological needs for competence, relatedness, and autonomy are considered essential for understanding content and processes of goal pursuits. Thus, for people to feel autonomous and to want to be willing participants in the organization's goals and attainment, they must have a sense of control over their work (Ryan, Kuhl, & Deci, 1997). People will pursue goals, domains, and relationships that allow or support their need satisfaction. To the extent that they are successful in finding such opportunities, they will experience positive psychological outcomes. If, however, need satisfaction is not forthcoming while they are acting, non-optimal or dysfunctional consequences may typically follow (Amabile & Khaire, 2008).

Conditions supporting SDT are believed to foster the highest quality forms of motivation and engagement for activities, including enhanced performance, persistence, and creativity (Deci & Ryan, 2008). In addition, when individual's or group's psychological needs are unsupported or thwarted within a social context will have a robust impact on wellness and people will lose their sense of freedom and sense of control over their own work and/or projects (Ryan, Deci, 2000). Research shows that autonomous motivation predicts persistence and adherence and is advantageous for effective performance, especially on complex tasks that involve deep information processing of creativity.

When teachers find an activity either interesting (intrinsic motivation) or important (well-internalized extrinsic motivation), they are influenced by their prior experiences of need

satisfaction versus thwarting. However, doing what one finds interesting or important does not have the explicit intent of satisfying the basic needs in the immediate situation. A person, for example, who sits at a keyboard and begins to play a piece of music may become lost in its beauty and experience great pleasure, yet s/he would not experience the pleasure if coerced to play, or if s/he felt unable to master the music. Thus, need satisfaction is necessary for the enjoyment of the activity, yet the explicit purpose is not likely to be need satisfaction. S/he would be doing what interests her/him, and s/he would experience spontaneous pleasure as long as the activity was self-organizing and the task appropriately challenging (Strauss & Ryan, 1987; Deci & Ryan, 2000). All this implies that in order for creativity to flourish, teachers must be provided freedom and autonomy to choose interesting and meaningful goals that satisfy their intrinsic needs as well as the organization's goals.

However, it does not appear that freedom and autonomy are necessarily a universal good. Pelz and Andrews (1976, 1966) used survey techniques to assess the degree of “looseness versus tightness” exhibited by the managers of scientists. They found that both overly loose and overly tight control tended to inhibit innovation with productivity and caused motivation to peak at moderate levels of control (Mumford et al., 2002). SDT recognizes, however, that people can also be alienated and mechanized, or passive and disaffected. Worse, independence means functioning alone and not relying on others or within a work group, thus stifling creativity within that organizational climate. SDT accounts for the social contexts and individual differences that support satisfaction of the basic needs that facilitate natural growth processes, including intrinsically motivated behavior and integration of extrinsic motivations (Ryan & Deci, 2000).

Research on extrinsic motivation and creativity is mixed with some concluding that extrinsic motivation hampers creativity (e.g., Amabile, 1985; Kruglanski, Friedman, & Zeeyi,

1971) and others suggesting the relationship is more complex (e.g., Baer, Oldham, & Cummings, 2003; Mumford & Hunter, 2005). Amabile (1983) and Deci and Ryan (1985) conclude that extrinsic motivation lessens creativity by reducing intrinsic task or project interest. What is clear, however, is that, while extrinsic rewards may hamper innovation, intrinsic motivation plays a strong positive role in creative performance.

Management practices – challenging work. Amabile and Kramer (2007) affirmed, in their study *The Big Deal Project*, that people performed better when their workday experiences included more positive emotions, stronger intrinsic motivation (passion for the work), and more favorable perceptions of their work, their team, their leaders, and their organization, and when they felt a sense that they had challenging and important projects. When Amabile and Kramer (2007) compared people's best days with their worst, the most important differentiator was being able to make progress in their work. Positive emotion was tied to higher creativity, and negative emotion was tied to lower creativity. Across all 26 teams studied, people were over 50% more likely to have creative ideas on the days they reported the most positive moods than on other days. This finding was based not on people's self-ratings of creativity, but on evidence in the diary narratives collected, and, from the evidence of these diaries, people in this organization actually did creative thinking that day. Employees who face creative challenges on a daily basis have a high level of self-efficacy; the belief in one's ability to solve a problem.

When employees are tasked with working hard on challenging and important projects self-efficacy has a direct influence on task completion. In addition, self-efficacy expectations determine how much effort people will expend and how long they will persist in the face of obstacles and aversive experiences. A stronger perception of self-efficacy leads to more active efforts (Bandura et al., 2010; Bandura et al., 1975). Psychological procedures, whatever their

form, alter the level and strength of self-efficacy. Bandura (1977) suggests that personal efficacy is derived from four principal sources of information: performance accomplishments, vicarious experience, verbal persuasion, and physiological states. The more dependable the experiential sources, the greater are the changes in perceived self-efficacy. Amabile and Kramer (2007) extended Bandura's theory by including an affective response in tandem with a perceptual response; "these effects of emotion and perception on motivation make perfect sense: if people are sad or angry about their work, they won't care about doing it well" (pg. 79) and "If they are happy and excited about it, they will leap to the task and put great effort behind it. The same goes for perception. If people perceive the work, and themselves, as having high value, their motivation will be high.

There is a long-standing debate among scholars on how work performance is influenced by people's subjective experiences at work. One side says that people perform better when they are happier and internally motivated by love of the work. Others assert that people do their best work under pressure and when externally motivated by deadlines and competition with peers. There is research evidence to support each of these positions. It is evident, though, from this research that creative organizations have climates where teachers perceive they give their best efforts when involved in challenging and important work.

Management practices – managerial encouragement. Teachers become involved in school activities for a number of reasons. On the one hand, teachers may be intrinsically motivated because they have freedom and autonomy to choose their own work projects. On the other hand, teachers may be extrinsically motivated and involve themselves in activities because they fear what will happen if they do not, or they expect that they are able to accomplish the goal and they value the reward that follows. Brophy (2004) describes the motivational challenge in

schools as a paradox, creating optimal conditions where, as often as possible, people are given freedom and autonomy in an organizational context that insists on goal directed behavior. In addition, intrinsic motivation occurs when the boss serves as a good work model, sets goals appropriately, supports the work group, values individual contributions, and shows confidence in the work group. Managerial encouragement for creativity and innovation relies more on evoking feelings of being intrinsically motivated rather than being controlled, which evokes feelings of being extrinsically motivated. This requires a manager who is perceptive of his/her capabilities, team dynamics, and organizational maneuvering. Successful managers engage in a number of complex social, technical, and decision-making activities. The successful management of the “paradoxes, constraints, and tensions within organizational creativity requires thoughtful and painstaking work toward their resolution – often shifting, changing, and adjusting tactics as necessary” (Hunter et al., 2011, p. 63). All this implies that school leaders motivate teachers by continuously striving to create the optimal work-climate.

The reality is that managers already contribute to the work-climate, whether deliberately or not (Shalley & Gilson, 2004), and those that deliberately create climates conducive to creativity face a number of tensions in the organization: providing rewards and recognition without teachers feeling the pressures of extrinsic motivation; being cautious in providing direction so as to allow the perception that a solution has not already been imagined, with the realization that how the solution is derived will be an evolving process; reducing stress and ambiguity while simultaneously maximizing challenge and risk taking; encouraging exploration while ensuring timely production of a viable product; and, encouraging individual initiative, while promoting integration of group activities (Mumford et al., 2002). In many cases,

innovation in schools lives or dies on the ability to create a supportive work-environment (Byrne, Mumford, Barrett, & Vessey, 2009; Puccio, Murdock, & Mance, 2006; Sternberg, 2007).

Managerial encouragement – effective goals and clear expectations. People need effective goals, clear expectations in order for the organization to realize a reasonable level of performance and quality (Anderson & West, 1998). Goals motivate employees by increasing attention and effort by providing clear targets toward which to direct energy. Goals affect what people pay attention to, how hard they work, and how long they persist on a task (Brophy, 2004).

Setting goals cues employees as to what is needed for their job and what is valued by the organization (Shalley & Gilson, 2004). For example, Amabile & Gryskiewicz (1987) suggest that having clear organizational goals was a critical factor for high levels of organizational creativity. In contrast, when no clear goals were given, lower levels of creativity resulted (Amabile & Kramer, 2007).

Goals directly and indirectly motivate people to use creative strategies as a way of obtaining desired outcomes (Runco, 2004). Self-regulatory activities are triggered when the goal is seen as challenging and levels of individual and collective efficacy are high enough for individuals working in teams to perceive themselves as possessing the abilities to achieve the goal through hard work (Bandura, 1997; Locke & Latham, 1990). During a qualitative investigation, Amabile & Kramer (2007) reported that when clear goals were provided in a timely fashion, motivation increased. When goals and expectations were less clear, motivation suffered. For example, when goals were ambiguous, work proceeded in wrong directions and performance suffered. Less directly, frustration over-rode the motivational impact that challenging work provides leading to lower motivation (Amabile & Kramer, 2007). Clear communication is important to an innovative organization's success, and in instances when goals

were set and communication was clear, progress improved. Clear communication leads to higher levels of inspiration (positive mental attitude, crediting others, trust).

Innovative organizations provide goals and expectations that are in alignment with creative efforts, whereas a top-down organization develops goals and expectations that promote compliance. In a series of studies, Shalley (1991, 1995) found that assigned creativity goals effectively enhanced creative performance. A creativity goal can be that an individual's output should be creative (i.e., novel and appropriate) or individuals should attempt to engage in activities that could lead to creative outcomes (e.g., flexible thought, playing with ideas). Effective goals, focused on creativity, influence motivation through impact on self-regulatory mechanisms and cause individuals to aspire to be creative.

Successful organizations acknowledge desired behavior by not only celebrating successes but by celebrating failures (McNabb & Sepic, 1995). Having an opportunity to openly discuss failures and focusing on successes helps promote creativity and risk-taking. Moreover, leaders who allow for risks without harm and provide appropriate rewards help shape efficacy beliefs such as confidence-building behavior (Lee, 2008).

Managerial encouragement – interpersonal skills. Teachers do not leave their feelings at the schoolhouse door and emotions, perceptions, and motivation are dynamics that affect creative performance (Amabile & Kramer, 2007). School leaders who know how to read the social landscape and appreciate the value of culture and climate are more likely to appropriately interact with their teachers in ways that will establish favorable climate conditions (Amabile & Khaire, 2008). A personal approach that cultivates authentic relationships combined with a policy approach that integrates creative climate, helps build and maintain a work life that

determines the ability of an organization to become and remain creative (McNabb & Sepic, 1995).

Tensions can be reduced through the use of humor. Humor dimension focuses on the degree to which spontaneity and ease are displayed within the workplace. A relaxed atmosphere where good-natured jokes and frequent laughter occur is indicative of this dimension. The opposite climate is characterized by gravity and seriousness. These kinds of social skills are critical for successful school leaders of creative groups. The need for persuasion in the leadership of creative efforts is, in part, attributable to the nature of creative people – people who are, more often than not, diverse individuals with strong egos. Due to their autonomy and professionalism, as well as their critical nature, creative people are not easily persuaded (Mumford et al., 2002). Leaders must know when, who, and how to persuade—all requirements that place a premium on social perceptiveness and on wisdom (Sternberg, 2007).

Managerial encouragement – values and has confidence in individual and work group contributions. Teachers are closest to ideas about student learning and are well equipped to help shape a system whose first job is increasing student learning, but only if the teachers themselves are personally committed to its success (Amabile & Khair, 2008). Amabile & Kramer, (2007), in a qualitative study, investigated inner-work life among employees in the corporate world. Their investigation was the first comprehensive look at what employees are thinking and feeling as they go about their work. After reading and decoding nearly 12,000 diary entries, they discovered important levers, which many managers miss. Employees often commented on how “big deal projects” motivated them, especially if the project included difficult, complex tasks. Employees positively described how they endured long 15-hour days with a high functioning team. They were motivated when the boss engaged in sense making because it gave them a

perception of the extreme importance of their work and increased their confidence in problem solving capabilities. All of this implies that when school leaders learn to appreciate their teachers' perceptions, they will realize the number of levers they have at their disposal for influencing climate and cultural factors and provide teachers the necessary confidence in their contributions, thus increasing the motivation necessary for creativity.

Most managers are extremely busy and feel pressure from their bosses to produce results. In the case of school leaders, principals may feel pressure to produce increasingly higher student test scores. In private schools, a pressure to create an image that will help market the school may serve as a pressure. It is, therefore, easy for them to not demonstrate value and confidence and let praise for creative efforts, successful and unsuccessful, fall by the wayside. One step managers can take is to model for teachers the different ways to help the learner, students and teachers, feel valued when they contribute to their own and the school's success.

Managerial encouragement – good work model. Role modeling by supervisors can influence employee creativity (Shalley & Gilson, 2004). Over time, genuine and repeated leader behavior within the organization is more likely to enhance creativity (Gong et al., 2009). Modeling by the leader also strengthens group cohesion (Jausi & Dionne, 2003). Leading for creativity is a matter of talking the talk and walking the walk because teachers, like employees in other types of organizations, are unlikely to follow a leader who says one thing and does another (Puccio & Cabra, 2010). Influencing employees by walking the walk, however, requires leaders to have substantial knowledge and technical expertise along with creative problem-solving skills (Mumford et al., 2002).

School leaders may have substantial knowledge in the area in which they work and will need that technical expertise, but they also need expertise in creative problem solving in order to

effectively represent teachers who are participating in creative efforts (Byrne et al., 2009). For example, researchers have found that highly creative individuals have often studied under highly creative people or have been exposed to creative role models (Shalley & Gilson, 2004). Another example can be found in problem finding, an important component of the creative process (Okuda, Runco, & Berger, 1991). Problem finding is the group's ability to construct problems that relate to organizational problems (Hu, Shi, Han, Wang, & Adey, 2010). When leaders model problem finding, employees tend to raise new questions and regard old problems through a different lens (Reiter-Palmon et al., 1997). Once problems have been identified, the process of problem solving begins and often involves risk and failure.

Learning from failure is a critical part of organizational learning. A creative climate allows for teachers to learn and feel comfortable in missteps that are part of experimentation with new ideas. A willingness to take risks, trying new things and implementing empowering policies are tangible behaviors that have been shown to increase efficacy (Edmondson, 1999). Even leader behaviors that seem odd, such as standing on desks while speaking with employees, can increase efficacy and stimulate risk taking and creativity. Jaussi and Dionne (2003) examined these unconventional leader behaviors and further research along these lines may likely prove beneficial to understanding the impact leader behaviors have when modeling the learning process, including the willingness to experiment with new ideas.

Developing requisite competencies about educational leadership does not require direct experience and understanding of organizational theory if the school leader models the kinds of values and skills needed for organizational adequacy (Bandura, 1997). Teachers are capable of perceiving role modeling as empowering and are more likely to engage in effective leadership activities once they observe effective leader behaviors and reflect on their ability to replicate the

practice rather than learning formal leadership training programs. Teachers may have considerable confidence and control in their classrooms but will need to work interdependently and learn from their formal school leaders while involved in activities at the organizational level, especially when the work-environment expects creative outcomes.

Creativity is not common to school leadership development programs and a challenge to school leaders of innovative schools is gaining domain specific expertise in creativity while obtaining requisite leadership skills necessary for managing people in the school (Hunter et al., 2011). It is imperative for these leaders to know what they are up against; leaders of creative efforts should understand their own strengths and weaknesses, as well as the complexity of how those strengths and weaknesses facilitate the task of supporting and leading others like them in an organizational environment (Hunter et al., 2011).

Managerial encouragement – open to new ideas. Mumford et al., (2002) suggest that three types of support are involved in the leadership of creative efforts: 1) idea support, 2) work support, and 3) social support. If the leader provides premature criticism when ideas are still in the formative stage, the consequence may be that people will withdraw. Therefore, leaders must time feedback, especially if it is critical, shelter ideas from premature evaluations by peers, and serve as advocates of new ideas. What leaders say and do, day by day, leads people to perceive that they do or do not have his/her support (Amabile et al., 2004).

Leaders of innovation serve as the gatekeepers of ideas – backing those ideas that are most advantageous for the team and organization (Mumford et al., 2003). Isaksen (2007) suggests that idea-support is determined by the way new ideas are treated. In the idea-supportive climate, ideas and suggestions are received in an authentically caring way. When leaders and their employees encourage ideas and listen to each other, more potential exists for creative

ideation because employees perceive support. When idea-support is low, people expect the automatic “no” from the boss.

In an empirical investigation of perceived leader support for work groups, four leader behaviors – monitoring, consulting, supporting, and recognizing – were perceived as relationship-oriented behaviors, and in turn these behaviors were perceived as support from the leader (Amabile et al., 2004). Task-oriented behaviors, such as monitoring work progress, were often negatively perceived. For instance, monitoring was perceived as checking up on someone. This suggests the importance of a delicate balance between relationship-oriented behaviors and task-oriented behaviors. The support provided by immediate supervisors exerts an influence on subordinates’ creativity through direct and indirect support.

Indirect support can come in the form of social support and attention to employee emotions. Again, Amabile & Kramer’s (2007) investigation on the impact of daily events on people’s emotions showed that employees often commented on seemingly trivial but much appreciated support. One example was when an upper manager brought refreshments to the team. When a high-level executive delivered bottled water and pizza to the people working after hours, it caused people on the project to perceive their work and themselves as important and valued, which evoked additional positive emotions. Proctor & Gamble, on the other hand, took a different approach by “shelving” ideas if they did not appear relevant. By placing an idea on the shelf, the organization ensures a backlog of unique ideas, but also sends the message to employees that all ideas are valuable, just maybe not viable at the present time (Hunter et al., 2011).

Leader support comes from a variety of behaviors, all of which should be carefully enacted while keeping a balance between tensions in mind. Idea feedback may be critical, and, in

order for the feedback to realize its full positive potential, it must be provided at the right time in a supportive manner. Leaders of innovative organizations will have high expectations for quantity and quality of ideas being generated and be willing respond to bad ideas in a constructive and useful manner. Work groups need support, and the slightest difference can determine whether the support is perceived as helpful or controlling regardless of the leader's intention. Finally, when people think of support, they often think of it as direct and visible, but even seemingly insignificant support can be perceived as "a big deal" and serve surprisingly, as a high motivator. When the team perceives that their ideas are valued as important and significant to the organization, and when constructive feedback is added to the mix, group interactions improve and group creativity is enhanced (Hunter et al., 2011).

Managerial encouragement – constructive feedback. Leader feedback is often evaluative or corrective information about some sort of action, event, or process. "Feedback guides, motivates, and reinforces effective behaviors and reduces or stops ineffective behaviors" (London, 2003, p. 1). School leaders typically provide feedback on teaching performance, but feedback can also help teachers working in groups (London & Sessa, 2006). A teacher group can learn from feedback, but a distinction about the feedback domain is important. Typical principal feedback helps teachers solve problems of practice such as teaching pedagogy, whereas feedback for creative efforts helps teachers improve their ability to generate creative outcomes.

Leader feedback processes build a team's awareness of their technical capabilities for accomplishing the creative work and encourages the team to assess their social interactions. When leaders evaluate the ideas of creative people, technical expertise and creative problem-solving skills may represent critical cognitive influences (Mumford et al., 2000). A second reason feedback is valuable is that it facilitates interpersonal processes that enable teams to

function more effectively (Taggar, 2002). The implication is that goals are more likely to be attained when people are committed to their goals and are given feedback concerning their progress in relation to their goals (Shalley & Gilson, 2004).

Given the complexity and constraints between novelty and usefulness, it may be difficult to evaluate ideas and provide feedback to followers when leaders lack expertise and creative problem-solving skills (Mumford et al., 2000). Generally, creativity researchers recognize the value of expertise. In one study, managers from a large international consumer goods manufacturer participated in a field experiment in which they learned and applied a process of creative thinking to solve real management problems. One of the findings suggests that people must possess creative problem-solving skills to effectively evaluate creative ideas (Basadur, Runco, & Vega, 2000). Feedback helps the group calibrate what it is capable of achieving, and the leader of innovative schools must have the requisite knowledge and technical expertise to not only provide feedback, but, just as important, be perceived as a credible source from which information is valued (Amabile et al., 2004). Along with providing technical feedback, feedback can also serve as an important social function.

Groups are a unique social setting in which the interaction among members may be a major contributor to the quality of group creativity. Providing feedback that includes effective conflict management should improve coordination, resulting in improved group creativity and improved motivation (Taggar, 2002). Group interaction may include holding a discussion or making a decision. During this interaction, members have a shared objective and will generally feel connected to each other. They work interdependently with a high degree of coordinated interaction with assigned roles and specific tasks and members' awareness of group closeness

and interaction. When the leader provides feedback to the group, these interactions are strengthened and the resulting outcome potential is a creative outcome (Mumford et al., 2002).

Successful management of the paradoxes identified requires a wise leader who appreciates solutions presented in a “both–and” rather than “either–or” orientation. While an effective principal must have domain expertise in the learning and teaching process, s/he must also have requisite knowledge of the technical and social domains in creative processes. Given the nature of operating in a unique environment in which they work (i.e., ambiguous, involving risk, and fluid), it is important that they not only understand organizational dynamics, but also how they can maneuver through it to execute innovative goals (Hunter et al., 2011). Thus, the school leader who is task oriented, directs with clarity, values participation and interaction, can positively impact a climate that encourages creativity.

Management practices – work group support. Group creative work is a complex process involving much more than a simple gathering of teachers at a table talking about how best to creatively solve problems or coming up with new ideas. Individuals and groups bring their creative talents and ideas with them and can decide to engage or disengage in creative processes, depending on the cues from others on their work-team. A team or group can be defined as two or more individuals who socially interact, possess one or more common goals, are brought together to perform organizationally relevant tasks, exhibit interdependencies with respect to workflow, goals, and outcomes, and have different roles and responsibilities, with boundaries and linkages to the broader system context and task environment (Kozlowski & Bell, 2003). A team or group creative process is defined as individuals working together in such a manner that they link ideas from multiple sources, delve into unknown areas to find better or unique approaches to a problem, or seek out novel ways of performing a task (Amabile, 1996;

Woodman et al., 1993). A creative work-climate includes management practices that support a diversely skilled work group in which people communicate well, are open to new ideas, constructively challenge each other's work, trust and help each other, and feel committed to the work they are doing (Amabile et al., 1996). Therefore, the organizational work climate strongly affects individual and group choices as to whether or not to engage in creative processes, (Gilson, 2004).

Workgroup support – good team. Motivation increases when group members are allowed to choose their own team because members' identify with others and they begin to place the team's identification first. They feel a certain sense of belonging with the group and, in turn, are more intrinsically motivated to contribute to the development of new ideas or solving organizational problems (Hirst, van Dick, & van Knippenberg, 2009). The more individuals identify with their team and socialized when rites and roles are enacted (Bettenhausen & Murnighan, 1991), the more they will work towards achieving the goals of the team (Hirst et al., 2009). Researchers found that perceptions of teams working towards goals and problem-solving tasks required high levels of creativity and were easily influenced by their team members and the social information given by their team members (Paulus & Nijstad, 2003).

Workgroup support – good blend of skills. Due to the social information and its impact on enhancing or diminishing creativity, it is important as well that groups actively recruit members who have diverse perspectives and skills that can emphasize the value and importance of creativity during socialization, which can encourage critical thinking (i.e., active sense-making and problem finding) and creative intentions as group norms can activate goals, emotions, and receptivity beliefs that facilitate creative behavior and innovation. The benefits of having diverse skills in a work group is that each person serves as the sole source of variation

and information from themselves to others, which in turn, helps to establish good interpersonal relationships (Gardner, 1993). In small groups, teachers' positive experiences can facilitate receptivity and creativity capability beliefs, improving the use of knowledge upon which innovations may be based and creative goals are more like to be established (Ford, 1996). Having a diverse set of skills and individuals, teams can approach problem solving in particular ways that will facilitate their creativity – they can explore multiple options, challenge assumptions, seek different perspectives, combine different viewpoints, and actively evaluate different options (Shalley & Smith, 2008).

In addition to having a team with diverse skills, research shows that having open groups with rotating members produced more ideas and a greater variety of ideas than closed groups (Klijn & Welko, 2010). Newcomers had a positive effect on the group and increased the levels and complexity of productivity, and groups that experienced membership change on a regular basis were more focused on their tasks (Choi & Thompson, 2005). The reason for groups to introduce new members is that membership change could diversify the knowledge base and infuse new ideas and perspectives (Levine & Moreland, 2004; Woodman et al., 1993), especially in light of creating a work climate that is conducive towards innovation, introducing new ideas, and problem solving. As an example, teachers from one department or grade level could transfer their knowledge, not only in the group but also across groups. This reinforces previous research which showed that groups whose members had been working together for a long time are less likely to be creative because longevity can lead to familiarity and common ways of thinking (Choi & Thompson, 2005). It is well known that, when a newcomer has a dissenting opinion or questions group norms, old members are stimulated and tend to engage in

divergent thinking processes, which in turn results in better performance (Choi & Thompson, 2005).

Workgroup support – open to new ideas. In a school setting, group success depends on teachers being motivated to contribute and engage in processes and produce quality work that blends the skills and ideas from each member of the team. In addition to contributing towards innovative solutions to goals, groups do best when members are dependent on each other for both recourses and outcomes (Brophy, 2006). Team members not only rely upon one another for new ideas and motivation, but they also can challenge one another to ensure that each is a contributing and accountable member of the team. However, a good team does not necessarily require that all of their teachers be creative or open to new ideas and experiences. Although the role of personality or set of skills, and in particular openness to experience, has been examined for individual creativity (Runco, 2004), there is limited research on its relationship to team creativity (Schilpzand, Herold, & Shalley, 2010). Of the big five dimensions, openness to experience can be most closely linked to individual creativity both conceptually and empirically (Hennessey & Amabile, 2010). Openness to experience and new ideas is defined as the “disposition to be imaginative, nonconforming, and unconventional” (Judge, Bono, Ilies, & Gerhardt, 2002, p. 765). Schilpzand et al., (2010) suggest that teams that consist of people who have the same levels of openness to new ideas or experiences are not conducive in creating a work climate that is creative, and this is particularly important since schools have wide variance in teachers’ openness to experience.

In schools and other organizations, individuals and team members often spend much of their time discussing problems and trying to find solutions to those problems. This is critical since the joint capabilities of the individuals in the group should exceed that of a particular

individual (Pauhus, Dzindolet, Poletes, & Camacho, 1993). Sharing ideas with others in a team can increase the chances of producing quite novel ideas, but this requires that each member show respect to each individual member and their ideas so that the climate remains conducive and supportive of a creative work climate (Paulus & Yang, 2000). When information and influence over decision-making are shared within teams and there is a high level of interaction among team members, the cross-fertilization of perspectives on how to solve problems can spawn creativity and innovation between individuals and within the group. Moreover, higher participation levels in decision-making results in less resistance to change, and, therefore, the likelihood of innovations being implemented increases (West, 2002).

Workgroup support – commitment. Individuals within the organization not only need to have varying degrees of perspectives, but also must be committed to the vision and goals of the organization and be willing to set aside their own beliefs, not ideas. The team's ability to have a varying perspective is often difficult to achieve in groups, since the psychology and sociology to communicate a pragmatic view of creative action recognizes that people are creatures of habit. Schools have creative talent and ideas all the time, yet the challenges for leaders are to engage their staff in innovation, to consistently empower the individual processes that facilitate creative action while holding the temptations that draw people toward habitual responses at bay (Ford, 1996). These social and contextual influence either positively or negatively affect individual and group creativity.

Collective creativity takes place in moments when any one individual does not hold all the necessary knowledge to construct a creative solution and the potential creative solution requires the domain-relevant skills of multiple participants (Hargadon, Bechky, 2006). In a qualitative study, Hargadon and Bechky (2006) identified four sets of interrelated behavior

patterns that moved teams beyond the insights of individuals: (a) help seeking, (b) help giving, reflective reframing, and (d) reinforcing. The practical application for education is that, when teachers do not have the expertise and ability to generate creative solutions independently, they may find ways collectively to produce creative outcomes. Teachers who are passionate about a particular organizational problem may find themselves in a group with others whom they respect and with whom they share similar values. In these situations, Hargadon & Bechky (2006) found participants engaged in help seeking, help giving, reflective reframing, reinforcing, and having a high degree of commitment to solving the problem(s). During these momentary social interactions, groups were able to produce useful creative solutions and the participants became mindful of this interaction and allowed this process to shape subsequent creativity-relevant skills of individuals working alone. Effective teams are comprised of members who willingly engage in creative ideation and are willing to help and support each other.

There is an abundance of research that refers to supportive team behavior, termed as Backup Behavior. Backup is defined as assisting team members to perform their tasks, which may occur by “(1) providing a teammate verbal feedback or coaching, (2) assisting a teammate behaviorally in carrying out actions, or (3) assuming and completing a task for a teammate. This dimension includes the provision of feedback and task-related support and the seeking of help from teammates when necessary” (Marks, Mathieu, & Zaccaro, 2001, p. 367). Backup behaviors require that team members be aware of what is required of other team members and how they contribute to the overall effort of the team, thus giving colleagues and themselves a sense of commitment to the vision and goals of the organization and of feeling comfortable and willing to engage in problem solving. Backup behaviors also require team members to monitor and support the performance of other team members so that they can help them when needed (Reiter-Palmon,

Wigert, & Vreede, 2012). Research has shown that, for individuals and groups to trust in the feedback of others, they must trust and feel safe in the process. Edmonson (1999) provided a rigorous evaluation of trust and group feedback in her model of 51 work teams. Using a combination of qualitative and quantitative techniques, her study revealed that team psychological safety influenced team learning behaviors indicative of a team learning process — such as seeking feedback, sharing information, experimenting, asking for help, and discussing errors—which then influenced team performance. All this implies the need for trust between individual and the work team so as to build a climate where creativity and innovation can occur.

Workgroup support - trust, open communication and challenging each other's ideas.

Isaksen (2007) describes trust in terms of degree of emotional safety in relationships. West & Sacramento (2012) describe trust as intra-group safety; the sense of psychological or psychosocial safety, which group members feel in the presence of their fellow group members, particularly during the whole group interactions. Paulus, Dzindolet, & Kohn (2012) define trust as the extent to which team members have confidence that their fellow group members will act in accordance with accepted standards of conduct and fairness. Reiter-Palman, Wigert, & Vreede (2012) explain that trust is based on the team member's belief that the team is competent, can accomplish its task, and will not harm the individual. Edmondson (1999) uses the phrase “team psychological safety,” which is defined as a shared belief that the team is safe for interpersonal risk taking. The concept of trust in work groups is important and has a high association with creativity in highly creative organization (Ekvall, 1996).

Teachers working in groups may trust that what they have said was heard by others and expect that information shared was for the benefit of solving a problem, and, under those conditions, trust is a predictor of creativity and innovation (Clegg, Unsworth, Epitropaki, &

Parker, 2002). Ekvall (1996) suggests that, when there is a strong level of trust, employees might put forward their ideas and opinions without fear of reprisal and ridicule in case of failure, resulting in communication within the group as open and straightforward. Where trust is missing, people are suspicious of each other and are wary of making mistakes.

There are obvious reasons for positing that participation will be linked to team innovation and trust is an important variable. When there is a high level of trust, individuals can be genuinely open and frank with one another. People can count on each other for personal support, can have a sincere respect for one another, and are able to accept and deal effectively within diverse groups with varying degrees of skills (Isaksen & Aerts, 2011). Team members expect their fellow group members to be honest, supportive, to reciprocate positive exchanges and to avoid negative exchanges (Paulus, Dzindolet, & Kohn, 2012). Encouragement and feedback from other members can motivate team members to perform better and should maintain high levels of performance because these build self, collective and creative efficacy (Marks et al., 2001).

Unfortunately, groups do not always function well. When employees perceive mistrust with other group members as well as low levels of commitment to project goals, engagement in constructive feedback is often missing. When goals of the group are not salient, or an individual does not agree with the group's goal(s) or ways to implement them, creative outcomes suffer (Hirst et al., 2009). "Where trust is missing, people are suspicious of each other, and therefore they closely guard themselves and their ideas. In these situations people find it extremely difficult to openly communicate with each other" (Isaksen, 2007, p. 6). Brophy (2006) identified several causes for a lack of trust in groups as having differences in perceptual sets, conformity pressure, social loafing, fear of evaluation, and distractions from members wasting time.

The same is true for the lack of openness to other's ideas, which can lead to a negative group climate. If individuals within the group do not feel safe within the environment, then people will gossip and slander one another. Other research suggests that group dissent may compromise group performance by undermining solidarity and commitment, thus generating a climate of apprehension in groups when constructive feedback and evaluation targets the individual and not the group. The negative evaluation of ideas (as opposed to idea sources) leads to fewer ideas, but these are vastly more innovative (Troyer & Younggreen, 2009).

A creative work-climate provides the intrinsic motivation necessary for high levels of individual and group performance as well as individual and group satisfaction. A team climate for innovation predicted overall team innovativeness, novelty of innovations, and number of innovations (Anderson & West, 1998) within the group or team when there was a climate of trust, openness to new ideas, a commitment to the goal(s) and vision of the organization, diverse skills and ideas within the group, and a feeling of safety when providing constructive feedback and evaluation. The central focus on what teams have to do—their task—is the key factor that distinguishes a social-psychological perspective on the study of teams where task is merely a means to prompt interpersonal interaction (Kozlowski & Ilgen, 2006). A creative team climate increases when the team has the necessary knowledge, skills, abilities, or resources to resolve the team task. Teams that primarily strive toward accomplishing goals can make decisions and create and adapt solutions to resolve task-driven problems. Organizations that have a climate where creativity and innovation occurs have effective teams that are committed to a team project because individuals feel support, trust is high, and teachers from a several areas of domain specific knowledge consistently and openly provide and receive team member constructive feedback.

Organizational Motivation

Organizational motivation – organizational encouragement. Organizational encouragement is an organizational climate that encourages creativity through the fair, constructive judgment of ideas; reward and recognition for creative work; mechanisms for developing new ideas; an active flow of ideas; and a shared vision (Amabile, Burnside,, & Gyskiewicz, 1995).

Organizational encouragement – shared vision. Most contemporary theories of motivation assume that people initiate and persist at behaviors to the extent that they believe the behaviors will lead to their desired outcomes or goals, so it is important that school organizations build a shared vision with all members. Beginning with the work of Lewin (1936) and Tolman (1932), this premise has led motivation researchers to explore the psychological value individuals and groups ascribe to goals and to an organization's vision (e.g., Kasser & Ryan, 1996; Vroom, 1964), to the individuals and group's expectations about attaining the vision and goals (e.g., Abramson, Seligman, & Teasdale, 1978; Bandura, 1989; Rotter, 1966), and the mechanisms that keep individuals and groups moving towards the selected vision and goals (e.g., Carver & Scheier, 2010). Initially, this approach assumed that any two equally valued goals held the same expectancies for attainment and would yield the same quality of performance and affective experience, recent research on vision and goal-directed behavior has begun to distinguish among types of goals or outcomes to encourage organizational motivation in how to facilitate an organization's vision and build a climate where creativity and innovation to exist (Amabile & Khair, 2008).

Researchers have, for example, contrasted different types of goals (Dweck, 1986; Nicholls, 1984) such as approach goals with avoidance goals (Carver & Scheier, 1998; Elliot &

Dweck, 2007; Higgins, 1996), suggesting that the different types of goals have different behavioral and affective consequences on organizations. In particular, Ryan, Sheldon, Kasser, and Deci (1996) say that, if the behavior was autonomously cultivated and supported, it could lead to more positive outcomes, including higher quality performance, improved self-efficacy, and a better work climate. In addition, having the organization outline and communicate vision and goals with individuals and groups leads to opportunities for those individuals and groups to experience autonomy, competence, and relatedness. O’Leary-Kelly, Martocchio, and Frank (1994) found, in their meta-analytic review of the team goal-setting literature, that teams with well-defined goals outperformed teams without goals by a full standard deviation.

Once a team is created and its composition is established, one of the first major leadership functions is to define the organization’s vision and/or goals. This involves determining and communicating the organization’s performance expectations for the team in such a way that they are broken down into tangible, comprehensible pieces. Once the team is clear about these expectations, the team leadership process must focus on establishing the team’s vision and purpose (Morgeson, DeRue, & Karam, 2010). The challenge and primary leadership task for many educators is to make sure that the team’s vision is clear, compelling, challenging, and shared among team members. Defining the team’s vision and ensuring that all team members have a common understanding of this vision is particularly important for satisfying team needs and directing the team toward goal accomplishment. In particular, this leadership function provides the foundation on which a common identity can form and cohesive relationships and motivation can develop among team members (Dionne, Yammarino, Atwater, & Spangler, 2004). Moreover, clearly defining the team’s vision ensures that the team has aligned its purpose, goals, and “tactical plans with the broader organization’s expectations,

strategy, and values” (p.13). Cohen, Chang, and Ledford (1997) found that leaders who facilitate vision setting in the team, regardless of the team structure, were associated with superior performing teams and teams that were highly creative. Likewise, in a study of 156 teams in five pharmaceutical and medical products firms, Gibson and Vermeulen (2003) used a mix of in-depth interviews and survey methods to conclude that team leaders who engaged in performance management behaviors, such as vision and goal setting, helped to enhance learning motivation and encouragement in teams, and, when team members actively participated in the vision process, the team was more committed to the organization’s vision and goals and acted as a more creative and cohesive unit (Cohen et al., 1997; Durham, Knight, & Locke, 1997; Sagie, 1996; Wegge, 2000; Yammarino & Naughton, 1992).

Recent research has taken yet another tack in relating a clear vision in work groups by examining the differential association of goal contents to well-being within the work environment and the ability of the work group to be creative (Amabile and Kramer 1997; Kasser and Ryan (1996). Work by Cohen and Bailey (1997) and Marks, Mathieu and Zaccaro (2001) have also sought to more clearly delineate a number of team and member characteristics that could be associated with team processes and differentiate team processes from their need to set clear vision and goals within their organization to allow for creative and innovative outputs. Work climates do transmit an array of values, some more compatible and some less compatible with basic needs. The more intentional the development of that work climate to be conducive, the more the work climate will promote integrated internalizations, the more its members will be in harmony, and the more stable the work climate will be in engaging in creativity (e.g., Amabile, 1996; Ford, 1996; Oldham & Cummings, 1996; Shalley, 1991; Zhou, 2009). In contrast, climates that either use controlling forms of socialization or endorse goals and values

that are unintermittable tend to foster alienation and anomie and, thus, are inherently less stable. In this way, needs constrain the dynamics of cultural evolution and the memes associated with it (Amabile & Khaire, 2008).

Gilson and Shalley's (2004) research specifically examined the role of creative processes; in how work groups establish their vision and goals and the effect on individuals and groups' engagement in creative processes. They sought to examine individuals' and groups' attitudes that would be particularly important for teams to choose to engage in creative processes. Specifically, they examined three attitudes toward individuals and groups' activities that have been theoretically linked to creativity (i.e., Amabile, 1996; Woodman et al., 1993): individuals and groups' belief that members of their team have shared goals and can actively participate in problem solving, and that their team has a climate supportive of creative efforts. They found that each of these attitudes toward individuals' and groups' activities is positively associated with teams' engaging in creative processes (e.g., Campion et al., 1993). Other researchers found that, where there were high levels of agreement on what is important to a group, there was increased motivation, efficiency, and effectiveness (Guzzo & Shea, 1992; Gladstein, 1984) argued that, when individuals and groups held similar vision or goals, they communicated more effectively, were able to access important information more readily, and considered more alternatives in making a decision, all of which should stimulate the creative process. In addition, the more individuals and groups reported that their team shared a vision or goals, the more frequently the team engaged in creative processes (Shalley & Gilson, 2004).

Organizational encouragement – open information & atmosphere/flow ideas/new ideas. It is clear from the research that, for individuals and groups within an organization to engage in creative processes, the vision and goals must be clearly defined, and individuals and

groups working together must engage in an open “flow” atmosphere where there is a sharing of new ideas and engagement in communication whereby that can link ideas from multiple sources, delve into unknown areas to find better or unique approaches to a problem, and seek out novel ways of performing a task (Amabile, 1996; Torrance, 1988; Woodman, Sawyer & Griffin, 1993). Individuals and groups must have freedom to engage, or not, in this open flow of ideas and in these creative processes (Kahn, 1992), since research suggests that it is vital for an organization’s performance (i.e., Hackman & Oldham, 1976). Engagement in creative processes involves individuals and groups behaviorally, cognitively, and emotionally attempting new things or ways of going about their work (Kahn, 1992). Therefore, creative processes are important in and of themselves, as they can be conceptualized as necessary first steps or preconditions for creative outcomes, improved performance, and as a required input for eventual innovation (Scott, et al., 2004).

For organizations to continuously improve, innovate, and adapt, creative processes are expected to become an increasingly critical component for success. Gilson and Shalley (2004) discovered that the level and degree of creativity output depended upon the open flow of information and mechanisms for developing new ideas (e.g., Amabile, 1996). Ensley, Pearson, and Pearce (2003) refer to this as challenging the status quo, and they note that one aspect of empowering leadership is to encourage opportunistic thinking. During the team’s action phase, it is important that individuals and groups continually question the ongoing usefulness of the team’s established ways of thinking and explore alternative ways of working. This mode of operating is part of a continual cycle of seeking new and optimal ways of completing work and establishing the necessary mechanisms to allow for a “flow” of information, for the ability to

express unusual ideas and for leaders to expect that the group engage in creative processes (Morgeson et al., 2010).

Organizational encouragement – mechanism for encouraging creative ideas and expects creativity. Cohen and Bailey (1997), in their review of team research, presented a framework that incorporated dimensions and features of the creative processes to address attitudes toward team activities and team characteristics as drivers of group processes and, ultimately, team effectiveness. Their research looked to develop and empirically test several associations described in their two models, specifically focusing on determining what is it about certain teams that will make them more likely to engage in a creative process. While there are many facets of task design, Cohen and Bailey (1997) focused their study on whether the job required creativity and considered whether team members perceived that creativity was required in order to perform their job effectively (Shalley, Gilson & Blum, 2000; Unsworth, 2001). The expectation was that team members would be more likely to try novel approaches to their work when they were given areas to do so through instructions, requirements, or the setting of actual goals for creativity (Shalley, 1991, 1995). If the organization climate supported and encouraged creativity, then it was more likely to be sustained. For instance, Kahn (1992) found that, when designers in an architectural firm were encouraged to try new design techniques, there was an increased willingness to take risks and to try new things. Gilson and Shalley (2003) affirmed that, when team members or groups perceive that creativity is required, they are motivated to attempt to engage in creative processes “The more team members believe that their job requires creativity, the more frequently the team will engage in creative processes” (p. 454).

Organizational encouragement – encouragement to problem solve. For an organization to sustain and enhance the ability to generate the mechanisms necessary to engage individuals

and group members in the creative process, their team members must participate how to problem solve. McGrath (1984) found that, encouraging individuals and group members to engage in effective problem solving significantly enhanced group effectiveness by increasing members' sense of responsibility and ownership of their work (Bonito & Hollingshead, 1997) along with overall task comprehension (Latham & Saari, 1979). In addition, member participation may positively affect quality of decisions by increasing the input of relevant information and by having decisions made at a level closer to the problems at hand (Campionetal, 1993). When there is full input across all team members, the influence of the whole is more likely to be exerted. This encouragement of developing creative ideas and having an open atmosphere whereby members can express freely has been found to stimulate more cognitive effort, encourage individuals to think in more divergent ways, and result in the consideration of multiple views (Nemeth & Staw, 1989) that should result in increased engagement in creative processes. Thus, Arvey and Dewhurst (1976) and Mossholder and Dewhurst (1980) found that participation in defining and helping to solve problems was related to satisfaction, and, presumably, performance.

The problem that many organizations encounter is that teams often confront complex, ill-defined problems that lack a single solution. Numerous scholars have posited that a critical team leadership function is to diagnose and solve any problems that keep teams from realizing their creative potential (Hackman & Walton, 1986; Zaccaro et al., 2001). For example, Shea and Guzzo (1987, p. 347) argued that effective team leaders must know how to “diagnose problems accurately and intervene effectively.” Zaccaro et al. (2001, p. 454) suggested that team leadership should be defined in terms of “problem-solving activities directed at the generation of solutions that advance team goal attainment.” Mumford, Zaccaro, Harding, Jacobs, and

Fleishman (2000) even referred to leadership as a complex form of social problem solving whereby leaders use their knowledge of the problem, the people in the team or workgroup, and the organization to solve any performance problems. Hiller et al. (2006, p. 390) defined problem solving as “identifying and diagnosing task-related problems, carefully using a team’s combined expertise to analyze problems, and arriving at effective solutions.” So, for any organization to solve complex problems, the leaders of that organization need to encourage and support their individuals and groups by providing them the necessary skills of solving problems that involve directly engaging in or supporting the team in problem assessment, solution development, and implementation of the solution (Morgeson et al., 2010).

Organizational encouragement – risk taking/failure is acceptable. When leaders in an organization engage their individuals and groups in problem solving, they must also allow their members to take risks, thus entrusting their organization with the possibility of failure of a project or action (Finnigan, 2010). This has been referred to in research as providing a climate where employees feel psychologically safe such that blame or punishment will not be assigned for new ideas or for breaking with the status quo (Edmondson, 1999). In support of these arguments, Nystrom (1990) found that organizational divisions were more innovative when their climates reflected challenge and risk taking, and Abbey and Dickson (1983) found that climate was the most important component for Research and Development Corporation’s innovativeness, such as Microsoft and Google. Essentially, if creativity is a valued outcome and employees believe this to be true, they should be more willing to experiment with new ideas, more open to communicating and seeking input from others about new ideas, and, overall, behave in ways that lead to creative outcome (Edmondson, 1999; Shalley & Gibson, 2004). For organizations to engage in high risk-taking, then bold new initiatives can be taken even when the outcomes are

unknown. Isaksen (2007) found that, in a risk-avoiding climate, there is a cautious, hesitant mentality. People try to be on the “safe side.” They decide, ‘to sleep on the matter’ or they set up committees and they cover themselves in many ways before making a decision (p. 3). For organizations to build a climate where creativity and innovation can occur without individuals and groups feeling pressure or fear, then the organization must balance how to reward and recognize their efforts without adversely affecting their sense of self-efficacy and intrinsic motivation (Bandura & Locke, 2003; Chand & Runco, 1993; Chang & Lee, 2007).

Organizational encouragement – rewards/ recognition. To promote and encourage creativity, educators and employers often use rewards. For example, students may be given high grades for creative essays or art projects and/or employees may be offered financial inducements for suggesting new ways to increase productivity or reduce costs (Edwards, 1989; Nelson, 1994). Behaviorally oriented researchers have reported incremental effects of reward on novel performance. For example, Glover and Gary (1976) found that the variety of uses school children gave for common objects was increased by repeated reward for novelty. These approaches take a utilitarian view of human nature favored by the British philosopher Jeremy Bentham (1781, 1988), which holds that behavior is augmented by extrinsic motivation. In this view, any discriminate response, including novel performance, can be strengthened by reward (e. g., Pryor, 1985; Skinner, 1953; Winston & Baker, 1985). Because asking people to be creative can raise their creativity levels (Amabile, 1979; O’Hara & Sternberg, 2000; Shalley, 1991), Glover and Gary (1976) found that the greater novelty of performance in the experimental condition than in the control condition might have been due entirely to cues indicating the appropriateness of novel performance, without any contribution of reward’s incentive properties (Amabile, 1983; Winston & Baker, 1985). Even without explicit instructions to be creative, the repeated receipt of

reward for creative performance may convey the creative nature of the task (Eisenberger & Selbst, 1994; Stokes, 1999).

However, rewards' effectiveness in increasing creativity has been challenged by academic researchers. Based on a review of the research literature, Kohn (1993) concluded that "it is simply not possible to bribe people to be creative" (p. 294) and suggested that schools and businesses stop using rewards as inducements for creativity. Many cognitive investigators argue that the expectancy of reward, however induced, would lessen creativity (e.g., Amabile & Cheek, 1988; Schwartz, 1982). Hennessey and Amabile (1998) stated, "the expectation of reward can actually undermine intrinsic motivation and creativity of performance" (p. 11).

Studies also reporting detrimental effects of reward on creativity used procedures that conveyed the dependence of reward on conventional rather than creative performance. In a series of studies, for example, Glover and Gary (1976) examined two ways reward might increase creativity. First, reward that is specifically contingent on creativity might increase the extrinsic motivation for being creative. Second, reward for high performance in general might increase creativity by enhancing perceived self-determination and, therefore, intrinsic task interest (Eisenberger & Rhoades, 2001). Similar detrimental effects of expected reward for unspecified performance on creativity have been reported in many studies, leading cognitive researchers to the conclusion that expected reward reduces creativity (e.g., Amabile, 1983; Collins & Amabile, 1999; Condry, 1977; Tegano et al., 1991). In schools, teachers often provide their students with rewards, not knowing that giving students an expected reward makes students "much less likely to take risks or to approach a task with a playful or experimental attitude" (Tegano, Moran, Sawyers, 1991). Hennessey and Amabile (1998) concluded "the preponderance of the evidence demonstrates that working for reward, under circumstances that are likely to occur naturally in

classrooms and workplaces every day, can be damaging to both intrinsic interest and creativity” (p. 675). Collins and Amabile (1999) conceded that reward might increase creativity under limited circumstances but argued that detrimental effects are more common.

Other researchers have provided another view: reward for simple, conventional performance in one task has been found to produce simple, uncreative performance in later tasks (Eisenberger & Armeli, 1997; Eisenberger & Selbst, 1994; McGraw & McCullers, 1979). In contrast, for example, rewarding school children’s novel performance in one task (generation of multiple words from strings of letters or generation of creative uses for common physical objects) increases the novelty of performance in a subsequent, unrewarded drawing task (Eisenberger & Armeli, 1997; Eisenberger & Selbst, 1994). Thus, whether reward increases or decreases creativity may depend on an individuals’ belief that creative or conventional performance is required for reward. Based on learned industriousness theory, Eisenberger, Armeli, and Pretz (1998) found that reward should increase creative performance if current task instructions or past experience indicate the appropriateness of creativity.

In a study on managerial practices, Yukl (2002) showed examples of both positive and negative behaviors equally dispersed that revealed that positivity or negativity was often conveyed more by how something was done than what was done. It was clear from many studies that rewards provided more of a negative impact on individuals and groups within a work environment, whereas recognition depended upon how leaders showed recognition. If leaders showed their support, either through private or public recognition, it often resulted in positive results, or individuals might fail to feel supported if the leader neglected to express appreciation for good work in team meetings as well as in private conversation (Bandura & Locke, 2003; Gilson, 2004).

The relationship between creativity and rewards has important theoretical as well as practical implications. Interest in activities for their own sake (intrinsic task interest or intrinsic motivation) is generally viewed as strongly related to creativity (Mumford, 2012). Researchers have argued that the motivation to obtain external rewards for carrying out a task (extrinsic motivation) lessens intrinsic task interest and reduces creativity (Amabile, 1983; Deci & Ryan, 1985). Thus, contemporary motivational theory and supportive empirical evidence seem to indicate that rewards lessen creativity, that the balance of having just enough recognition is favorable, and that not enough can be detrimental to an individual's motivation.

Organizational encouragement – fair evaluation and acceptance of failure. Closely tied to rewards and support is the importance of evaluating employees on whether they are attempting creative activity and, ultimately, rewarding both employee attempts, even if they may fail, and actual creative outcomes. Some research suggests that evaluation, in of itself, can have a dysfunctional effect on intrinsic motivation and subsequent creativity (e.g., Amabile, 1979; Amabile et al., 1990; Shalley & Oldham, 1985). On the other hand, other studies have found that evaluation can positively affect intrinsic motivation and creativity (e.g., Harackiewicz & Elliott, 1993; Jussim et al., 1992). For example, Shalley (1995) conducted two studies looking at the effect of expected evaluation on creativity. The first study found no significant effect for expected evaluation. The second study found that individuals who worked alone, had a creativity goal, and expected to be evaluated had high levels of creativity. These results suggest that expected evaluation is not necessarily harmful to creativity and can actually be beneficial to creativity in certain situations (Shalley & Gilson, 2004).

Providing employees with performance feedback is a key function that many leaders struggle with. Giving feedback can be particularly important for creativity and also particularly

difficult in that creativity often involves trying new things and taking risks with the possibility of failure (Finnigan, 2010). The notion of providing information versus control also has been applied to research on expected evaluation and the nature of feedback provided by supervisors. In particular, one study found that, when individuals expected an external evaluation that would provide them with constructive information on how to improve their performance (i.e., informational in that it is supportive yet holds them accountable), the resulting reaction was beneficial for both their intrinsic motivation and their creativity (Shalley & Perry-Smith, 2001). Another study found that, when informational feedback was delivered to an individual, s/he had higher subsequent creativity than when the same feedback was delivered in a controlling or punitive manner (Zhou, 1998).

Additionally, it has been found that even individuals' self-assessment of their work results in higher creative performance than when they were evaluated by a leader, and it was stressed that the assessment should be used as a strategy to develop creativity relevant skills (Zhou & Oldham, 2001). In addition, Zhou (2003) found that feedback that is high on developmental orientation (e.g., providing employees with helpful information to learn, develop, and improve) resulted in higher levels of creativity. The research on performance evaluation suggests that leaders should provide support for role expectations of creativity by providing an environment where employees expect to receive constructive, developmental feedback on their work. The key appears to be that managers need to stress information giving and sharing of constructive feedback to foster employees' creativity. Thus, employees can be given negative feedback, but what appears to be critical is how the feedback is conveyed to the recipient.

Finally, whether creativity is a requirement or an expectation of a job, it is critical that resources, rewards, support, and evaluation all be closely linked such that creative behaviors and

outcomes are perceived as important (Amabile et al., 1996). For example, if creativity is positively evaluated but never rewarded, it may be that the employee is given a mixed message and may or may not decide to continue trying to be creative. Alternatively, if employees are rewarded and evaluated based on their creativity, yet never given the resources they need to perform such behaviors, they may become disenfranchised. Therefore, organizations need to plan very carefully what behaviors, activities, and outcomes they want to encourage in their employees and based on this support, reward, and evaluate such activities accordingly (Amabile, Schatzel, Moneta, & Kramer, 2004; Barling, Slater, & Kelloway, 2000).

From the research, creativity is enhanced in school organizations where risk taking is encouraged, supported, and where there is an organic organizational design to encompass open information flow to solve school-wide problems. In addition, creativity flourishes in a climate where teachers receive recognition and rewards for creative efforts and where they are fairly judged and evaluated.

Organizational motivation – lack of organizational impediments. Much of what is revealed in this review of related literature on work climate involves stimulants to creativity and innovation. When a particular attribute that stimulates creativity is either missing or enacted in the wrong way, the opposite of the intended impact can be perceived. That is to say, almost any domain attribute can be perceived as a stimulant or as an impediment to creativity. An example is that organizational encouragement includes the need to recognize teacher efforts when working on creative outcomes. Lack of recognition of those efforts yields resentment and may decrease motivation for future efforts. However, there are situations that can best be described as impediments to creativity, such as problems created by employees (internal politics, destructive competition, and damaging criticism) and problems created by management (controlling and

restrictive). Creativity, by the very nature of its definition, already has constraints and unnecessary complexities. Therefore, any further obstacles to creativity need to be minimized in order for organizations to realize the full positive potential effect of intrinsic motivation.

Creativity, in general, is not only met with resistance in the educational community (Smith & Smith, 2010), but innovative schools, like other creative organizations, have obstacles that impede, if not destroy creativity. Over a decade ago, Amabile (1998, p. 77) said, “When I consider all the organizations I have studied and worked with over the past 22 years, there can be no doubt: creativity gets killed much more often than it gets supported.” School leaders (principals and directors) cannot ignore those climate factors that can become obstacles: political problems, harsh criticism of new ideas, destructive internal competition, and an avoidance of risk (Amabile et al., 1996), which may take place without the school leader even knowing they are happening while s/he is making conscious efforts to support creativity in the school. Because individuals are likely to perceive each of these factors as controlling, the individuals' extrinsic motivation can be increased, while the intrinsic motivation necessary for creativity is decreased (Amabile, 1998; Deci & Ryan, 2008). Moreover, when the negative nature of facing obstacles seems overwhelming, teachers may perceive a loss of control and feel dehumanized, a psychological construct which manifests in forms of antisocial behavior to others which can kill creativity and cause dysfunction within the work group (Moller & Deci, 2010).

Lack of organizational impediments - problems created by people: politics, destructive competition, and destructive criticism. Encouragement from supervisors is essential and, when the organizational climate is perceived as supportive, creativity is further enhanced (Amabile 1998). Such support is the job of the school leader who must put in place appropriate mechanisms to minimize impediments such as political problems. A seasoned principal

understands political problems can be manifested within the work team, across the school, and, when high-level executives become involved, politics can be felt throughout the district. However, when politics, competitive and self-serving behaviors (Cropanzano, Howes, Grandey, & Toth, 1997), are not sufficiently resolved, teachers are likely to withdraw, lose satisfaction and commitment to their work project and their supervisor, and even possibly leave the school (Cropanzano et al., 1997; Harrell-Cook, Ferris, & Dulebohn, 1999). Moreover, peers who use political capital to influence others may be perceived as bullies, furthering unnecessary anxiousness in others.

Bullying may be difficult to define but it might take on the form of excessive monitoring, persistent criticism, verbal abuse, overt threats, or more subversive acts like exclusion or isolation, and gossip or rumors (Isaksen & Ekvall, 2010; Riley, Duncan, & Edwards, 2011). Riley et al., (2011) clarify bullying as repeated and persistent negative acts towards one or more individual(s), which involve a persistent power imbalance and create a hostile work environment. While staff bullying may seem to be the exception to behavior in the school organization, Riley, et al., (2011) found that 99.6 percent of faculty members (teachers and support staff) experienced some sort of bullying during their employment; 50 percent indicated experiencing bullying by a colleague. Moreover, the statistical results revealed a “disturbingly high 50 percent of people indicated their health was affected and suffered in the form of mental health and physical well-being and expressing a strong desire to leave their employment” (Riley et al., 2011, p. 14). All this implies that schools need to manage conflict in order for teachers to feel the intrinsic motivational affects necessary for creative efforts.

Preventing negative politics begins with the establishment and reminders of clear organizational and group norms regarding collegial behavior (Delbecq, 2001). Progressive steps,

from warnings and investigations, to discussing the problem with the management team, can stop most unwanted behavior. Within this challenge, though, lies the opportunity for giving voice to those who have chosen to be silent (Verhezen, 2010). Gathering anonymous data and bringing light to the problems created by unnecessary politics is an important building block in a climate of integrity. Those aligned strategically important values “can be either (1) embodied in law and regulations, which will lead to compliance that function as ‘legal borderlines’ or (2) in narratives of ethical ideals, which can be reflected in integrity-based management that compel as inspiring living examples of moral excellence” (Verhezen, 2010, p. 197).

The school can manage politics by minimizing the frequency of harmful behaviors. Both formal and informal behaviors that progress along with repeated offenses are important considerations that a leader needs to contemplate when providing any future intervention or solution(s). When a leader can minimize negative behaviors, while in tandem, can maximize organizational encouragement, this can then lead to a more optimal work climate supportive of creativity and innovation (Puccio, Murdock, & Mance, 2006).

Lack of organizational impediments – pressure to produce and external evaluation of creativity. A work climate that applies too much pressure on people to consistently produce might evoke employee’s feelings of territorialism and concerns about others’ motives of hindering their work projects. This is especially true when innovative products are on display, which opens the door for external evaluations on artistic creativity (Amabile, 1979). Effects of external evaluations have potential to serve as extrinsic motivation, an impediment to creativity research. Amabile’s (1979) research findings suggest that those artists who were told to expect an evaluation of their finished product, but were not told what to do to receive a good evaluation, received lower ratings of creativity than people who worked under non-evaluation conditions

did. That is not to say feedback is not important in creativity; creativity literature supports feedback and debate over ideas as groups find and solve problems (Amabile et al., 1996; Hennessey & Amabile, 2010; Troy & Younggreen, 2009) but does not support peer and supervisory evaluation and critical feedback on creative outcomes. An organization work climate where employees receive evaluation and where they perceive unnecessary competition from others will suffer from potential creative outcomes or will become nonexistent.

Effective innovative organizations distinguish between the consequences of challenging work and challenging the value or importance of innovative products. Challenging work can be perceived as fostering motivation. When peers provide negative feedback about a product, the behavior can be perceived as unethical and competitive (Baucus, Norton, Baucus, & Human, 2008). Baucus et al. (2008) suggest that even competitive playfulness may have negative consequences. These activities are often perceived more as “hazing rather than a growth experience and when conflict and competition turn ugly, stress levels become too high for individual employees” (Baucus et al., 2008, p. 109). Unnecessary politics may not only slow down the production of creative ideation but also render the organization emotionally frozen if continuous unethical behavior goes unchecked.

Lack of organizational impediments - status quo, doing things the way we have always done them. Public and private schools prepare students for their next steps, which makes schools future-oriented organizations. Most creativity researchers agree that creativity thrives when people perceive their work climate as *not* doing things the way they have always done them (Amabile et al., 1996). However, an increase in flexibility can run the risk of a decline in creativity and innovation (Kasper & Muhlbacher, 2006). If there is an overemphasis on flexibility, values held by the organization may be at risk. Conversely, if there is an

overemphasis on traditional organizational values, flexibility and innovation may be at risk. This implies the need for balancing the tension between the individual and organizational desire to change with a perceived need for safety and stability (Sternberg, 2007).

In work climates characterized by complexity and change, creativity literature, although slim, encourages a change from traditional, hierarchical structures to a more flattened structure that encourages individual freedom and autonomy. At the same time, a growing body of researchers suggests that both traditional and new forms of organizing have a critical role to play in "twenty first century" organizations (Graetz & Smith, 2009). Employees are intrinsically motivated when given freedom and autonomy to choose their own work project but, when they are too wedded to their freedom, standardization and accountability can suffer. "Performance gains come from a healthy mix of traditional, stabilizing, direction-setting mechanisms in concert with flexible, permeable forms, rather than a fixation on one or the other" (Graetz & Smith, 2009, p. 22). Amabile's (1996) research findings suggest, in two qualitative studies leading to the construction of the KEYS® survey, that not only can a work climate, which is fixated on the status-quo, result in low levels of organizational creativity, but organizations that are perceived as controlling will impede creativity as well.

Lack of organizational impediments - the organization, including procedures are not too formal and strictly controlled. Organizations that are too formal and strictly controlled will impede creativity (Kimberly & Evanisko, 1981). Davis (2006) suggests creativity rarely flourishes in highly regulated and constrained work environments. Deci and Ryan (2008) suggest that when people perceive being overly controlled, then autonomous motivation suffers. Moreover, organizational 'red-tape' can undermine intrinsic motivation and slow down the creative process (Mullin & Sherman, 1993).

Another contextual influence specific to education is the types of procedures that take away from time to prepare for and engage in learning and teaching processes. Completing and properly filing field trip request forms and supervising non-instructional activities such as hall duty and end-of-day departure supervision can be viewed as organization bureaucracy, which leaders need to eliminate as quickly as possible (Robbins & Alvy, 2004). Systems that are decided from “above” are often perceived as too restrictive in daily operations with regard to what to do and how to do it. Examples include strict budget limits and demands to cut costs, and restrictions on some types of operations due to legal regulations. In one research study that looked at 90 different educational organization types, this pattern of having employees undertake burdensome procedures that took away from time to prepare for and engage in learning and teaching processes was particularly obvious (Bolin & Härenstam, 2008).

Optimal work climates that are conducive to creativity require minimizing problems caused by staff and management. While unnecessary negative employee behavior might take place behind the back of the boss, it still remains a management responsibility to minimize the disruptive behavior that causes the motivation for creativity to suffer. Management may also contribute to organizational impediments. Status quo and rate of change need to be carefully managed in order to provide employees with positive motivation. Centralization and decentralization are described as opposite ends on a continuum, but effective leaders of innovative organizations will make decision based on the notion that both need to coexist, and that some decisions can be centralized and others decentralize at the same time (Bolin & Härenstam, 2008).

Resources

Resources – sufficient resources. Of all the contextual influences that might be different between education and the private sector is the economic situation: resources and expenditures. Having access to appropriate resources is defined as appropriate funding, materials, facilities, and information available. Expenditures is defined as having something expended, such as time, annual payroll and benefits, facilities, labor costs, cost of goods, technology, taxes, instructional supplies, workers compensation, software expenses, and operating expenses. Defining the context encompasses all elements of the psychological climate of both the formal organization (policies and procedures) and the informal organization (values, norms, and interpersonal relationships). Schools have a limit to resources by law, whereas private business does not. However, when there are economic swings, such as what has happened in the last decade, it might have an immediate impact on the private sector, but, eventually, school finances are constrained because of the decrease in tax revenue (Amabile & Greyskiewicz, 1987; Amabile & Kramer, 2007; Morgenson, DeRuue, & Karam, 2010). In this time of uncertainty, constraints, and reductions of resources available, schools have a complex role in striking the right balance between providing employees enough resources to be creative, but not too much so that they are bored and no longer motivated to perform their jobs (Amabile & Gryskiewicz, 1987). Likewise, access to the necessary resources so that employees can perform their jobs is important, but an overabundance may stifle their creativity. Given these dichotomies, it becomes a delicate balancing act to provide just the right amount of resources to encourage creativity and not impede it.

Neighborhood schools are often the center of their communities, providing an education for students, a meeting place for an assortment of groups, and distribution of information to parents and the public. Notwithstanding their importance, schools often fall victim to downturns

in the economy, receiving lower revenues during challenging times. Declining enrollment intensifies existing budget shortfalls, worsening the effect for students. In times of declining enrollment coupled with economic downturns, districts frequently turn to school closure and cutting of resources to close budget gaps, leading to strained relations between schools and their communities. America's schools, in the last decade, have suffered from a continual fiscal crisis, with budgetary shortfalls, school district bankruptcies, teacher and administrator layoffs, hiring and salary freezes, pension system defaults, shorter school years, ever-larger classes, faculty furloughs, fewer course electives, reduced field trips, foregone or curtailed athletics, outdated textbooks, teachers having to make do with fewer supplies, and cuts in school maintenance and school closures (Amabile & Kramer, 2007).

Therefore, what are the consequences of these cuts in funding, materials, facilities, staffing, and other resources to schools and how might such changes in the work environment come about? The threat-rigidity theory (Staw, Sandelands, & Dutton, 1981) directly addresses possible changes in organizational environments under negative circumstances such as those accompanying downsizing or closing of schools and organizations. The theory is concerned with situations of threat, defined as an external event or circumstance in which individuals, groups, or organizations perceive impending negative or harmful consequences for their vital interests. Clearly, this definition applies to most organizations that undertake downsizing, and it certainly applies to schools. Although threat is proposed to have conceptually similar effects on individuals, groups, and organizations, it is threat-rigidity theory's organizational level of analysis that is most relevant to a consideration of changes in work environments during downsizing. According to this theory, under threatening conditions, organizations undergo a "mechanistic shift" (Staw et al., 1981: 516). They centralize control, conserve resources, and

restrict information flow. Threat-rigidity theory implies that, under the types of radical changes that are likely to precede or accompany downsizing, the resulting effects will be dysfunctional. This position has received considerable empirical support, primarily from studies of organizational crisis (e.g., Billings, Milburn, & Shaalman, 1980; D'Aveni & MacMillan, 1990; Smart & Vertinsky, 1984) and studies of centralization, efficiency, and resistance to change (e.g., Cameron, Whetten, & Kim, 1987; D'Aveni, 1989; Whetten, 1981).

Changes in the work environment, and the ability to engage in creative processes, also have to do with the two main resources that affect creativity: time and money. Deciding how much time and money to give to a team or project is a sophisticated judgment call that can either support or kill creativity. Leaders must learn and balance the right amount of funding, people, and other resources that a team legitimately needs to complete an assignment since research studies have shown that giving certain resources to a team or project is a judgment call that can either support or kill creativity (Amabile, 1998). In addition, leaders must know how much the organization can legitimately afford to allocate to the assignment, and then they must strike a compromise. Interestingly, adding more resources above a "threshold of sufficiency" does not boost creativity. Below that threshold, however, a restriction of resources can dampen creativity.

Unfortunately, many leaders do not realize this and often make another mistake. They keep resources tight, which push people to channel their creativity into finding additional resources, not in actually developing new products or services (Amabile, 1998; Amabile & Conti, 1999; Amabile & Kramer, 2007). So how can a school, during a time of budget crisis and downsizing, continue to provide the necessary resources to their staff and students when, in California, over 80% of the budget goes to salaries and less than 3% is unrestricted and can be used for resources to staff and students (i.e., professional development trainings, field trips,

technology, school supplies (paper, copier, etc.), and release time for teachers to collaborate, etc.)? To help close that gap, California state policymakers suspended Proposition 98, the minimum funding guarantee for K-12 schools and community colleges, in 2010-11. In total, revenues for K-12 schools was down nearly 10% compared with 2007-08, yet more cuts loomed as the state faced a massive 2-year budget shortfall, including \$6.1 billion in 2010-11. This research study was conducted in California in 2011-2012 school year when schools were experiencing a dramatic reduction in funding and where downsizing, layoffs, and school closures were taking place in almost every district across the state, yet many schools did increase and engage in innovative practices while staff perceived there was sufficient resources that promoted a creative work environment.

Amabile's (2008) research has repeatedly demonstrated that, for creativity to occur within the work environment, individuals and staff must be intrinsically motivated. Many studies show that monetary rewards do not help, especially when these lead people to feel they are being bribed or controlled (Amabile, 1998; Amabile & Conti, 1999). More importantly, money by itself does not make employees passionate about their jobs. Amabile (1998b) reported, "A cash reward can't magically prompt people to find their work interesting if in their hearts they feel it is dull. But passion and interest-a person's internal desire to do something-are what intrinsic motivation is all about" (p. 79).

From the research, creativity is enhanced when there is a sense of intrinsic motivation and efficacy with individuals and groups within an organization; outside the field of leadership, techniques for building efficacy have been well tested in prior research. These efficacy development techniques include mastery experiences, vicarious learning, social persuasion, arousal (Bandura, 1997), raising the salience and perceived utility of means available to

complete the task, and more importantly having access to appropriate resources, including funds, materials, facilities, and information (Eden, 2001). Because individuals and groups must have the resources necessary to complete their tasks (Hackman, 1987), a major leadership function involves taking action to secure these resources, so, not only are resources essential to task completion, but the provision of adequate resources sends an indication of support to the team (Morgeson et al., 2010). This can motivate teams because it signals that their work is important and enhances their efficacy. Eden (2001) proposes that raising levels of efficacy can be achieved by enhancing an individual's perception of the quality and utility of resources provided (e.g., information, facilities, materials, and funding) and the applicability of those resources to the setting/context. Importantly, it is not the resource itself, but the person's assessment or belief in the quality and authentic support that contributes to level of efficacy. Eden & Sulimani (2002) were able to boost means efficacy through raising followers' expectations of the quality of their resources for a particular task. Specifically, they randomized groups to conditions, and, in those conditions where experimenters raised participants' beliefs about the quality of the equipment available to perform actual tasks, those groups performed significantly better on those tasks.

Creativity research shows that employees need intrinsic motivation, and one way for employees to feel they are supported is to have access to legitimate material resources to be creative (Katz & Allen, 1988). However, schools faced an interesting dilemma. That is, while material resources have been described as important for creativity, it also has been suggested that their availability or abundance might negatively affect creativity. For example, (Csikszentmihalyi, 1999) reported that, while resources are needed to perform a job, not having everything that is needed readily at hand, in fact, may stretch employees to think of different creative or innovative ways of doing their work. Taking this a step further (Csikszentmihalyi,

1997) suggests that resources can make individuals too comfortable, which can have a “deadening effect on creativity” (p. 321). Nohria and Gulati (1996) also explored this paradox, examining the role of “slack” in organizational innovation. In their sample of 264 departments, the authors found that having few resources hampered innovation, but an overabundance of resources also limited the originality of innovative efforts. Finally, Csikszentmihalyi (1997) suggested that resources can have a “deadening effect” on creativity (p. 321) and that caution is warranted with regard to blanket resource distribution.

Finally, people also are an important resource. That is, individuals may need to be able to access individuals with varying expertise to gain the information needed for pursuing creative activities. The development and implementation of creative ideas oftentimes requires input and support from multiple individuals or groups (Mumford et al., 2002). Taken together, organizations have a complex role in striking the right balance between providing employees enough time to be creative but not too much time as to become bored and no longer motivated to perform. Likewise, access to the resources necessary for employees to perform their jobs is important, but an overabundance may stifle their creativity. Given these dichotomies, it may be fortunate that many of the traditional roles of leadership are being redefined in today’s flatter organizational structures. With employees having more direct responsibility over their day-to-day work, the leaders’ role is being redefined so that they are more involved in external resource acquisition and boundary spanning.

So, how can an organization, and schools in particular, continue to provide the necessary resources to promote a creative work environment when, in the last decade, budget cuts have avalanched personnel cuts and over 80% of a district’s budget is spent on salaries and benefits? Amabile and Conti (1999) examined the work environment of several American companies for

creativity before, during, and after a major downsizing. In their study, creativity and most creativity-supporting aspects of the perceived work environment declined significantly during the downsizing but increased modestly later; the opposite pattern was observed for creativity-undermining aspects. Many of these companies continued to downsize their workforces through most of the 1990s, but they also continued to emphasize the importance of innovation to long-term success. Amabile and Conti (1999) examined how these two goals can exist and be incompatible.

There is considerable controversy among theoreticians about the effects of downsizing on a variety of organizational outcomes, including innovation, as noted by McKinley and his colleagues (McKinley, 1993; Mane, McKinley & Barker, 1998). Some theorists argue that a reduction in force will have generally positive effects on a company's deficiency, reducing waste and leading to a more productive allocation of resources (e.g., Jensen, 1986). However, others, most notably Cascio (1993), suggest that innovation will likely suffer during downsizing.

During this time of budget crisis, not only are individuals and groups taking more ownership over their own resources and expenditures, but also many parents are asked to buy more school supplies than ever before while the costs of supplies continues to increase with inflation. As a result, national back-to-school consumer spending has increased significantly. Yet there are those who say that schools are continually playing the “Chicken Little” act (Guthrie & Peng 2010), bemoaning their woes of cuts and layoffs, yet, as the budget-planning cycle concludes and schools “open their doors in the late summer and fall, virtually all classrooms have instructors, teachers receive their paychecks and use their health plans, athletic teams play, and textbooks are distributed” (p.12). Guthrie and Peng (2010) argue that it is the state’s responsibility to provide education. A state can decide to pursue or abolish numerous areas of

government responsibility, but it cannot decide to abandon its K-12 school system. However, many school districts suffering from the lack of necessary resources to keep their doors open may not hold this perception as teachers receive pink slips and schools are closed.

The literature reviewed here suggests that the nature of promoting a creative work environment encapsulates the need to find the balance of resources needed by the organization. Likewise, it suggests that individual and group characteristics, along with the social influences and behaviors known to support creativity, can be enhanced or inhibited by attributes and properties, which provide either support or a lack of resources. The caution that leaders need to keep in mind is that simply providing talented people with monies, supplies, facilities, or time, will not necessarily produce creative or innovative outcomes. It may however, support and enhance the organization's capacity to be creative. This literature review explored why creative school organizations need to continually provide access to internal and external resources needed for creative work, even during economically turbulent times.

Resources – realistic workload pressure. Two of ten KEYS® dimensions measure the degree to which certain variables serve as barriers to a work climate in an organization desirous of creative outcomes. The first set of variables was discussed in this chapter under Organizational Impediments. The purpose of this section is to discuss the second set, Realistic Workload Pressure. Amabile et al. (1996) describe workload pressure as extreme time pressures, unrealistic expectations for productivity, and distractions from creative work. Work pressures are a normal part of work life and one challenge is minimizing pressures that employees perceive as an obstacle to their creativity. Paradox, tension, and balance are threads that run through creativity literature and when it comes to workload pressure the first tension leadership faces is the fine-line between different amounts of time employees are given to perform a creative task.

Realistic workload pressure – time pressure. Creative insights often need time to grow into fully formed ideas. Some school leaders believe teachers come up with their best ideas when time is tight but research reveals the opposite. “When creativity is under the gun, it usually ends up getting killed” (Amabile, Hadley, & Kramer, 2002, p. 52). When creativity researchers investigate time pressure, they are often interested in the optimal time needed to complete a task. Too little time results in the least amount of creativity, too much time results in less creativity, and people with more time feel more optimistic. Creativity was highest when people had to pay attention to the task and feel a little pressure to get it done (Amabile et al., 2002; Hunter et al., 2011; Karau, 1992). Karau (1992) mentions that too little time evoked feelings of frustration, too much time encouraged social loafing, and, when subjects were given optimal time, they felt satisfied not only with task completion but with the amount of time provided. Flexible timelines permit people to explore new avenues and alternatives. Time pressure, to this degree, makes thinking outside the instructions and planned routines impossible. Unrealistic time pressure has potential to increase stress or waste time and has potential to reduce the degree to which people feel efficacious.

Realistic workload pressure – unrealistic expectations. A high level of self-efficacy is one of the predictors of whether an employee will persevere through the difficulties of a task (Bandura, 1997). Combined with a high level of creative efficacy (Ryan & Deci, 2000), teachers might freely give hours of personal time to overcome obstacles inherent in the design of complex student learning activities. As a contextual influence specific to education, an expectation exists for a continuous stream of creative outcomes manifested in the form of student exhibitions on public display while under the constraints of a limited budget. Therefore, self-efficacy may suffer.

Teachers who work in innovative schools deal with complex issues that need addressing by novel, but practical, means. A significant difference is that school organizations often deal with potentially volatile issues and operate under conditions of extremely limited resources. In such settings, the cost of inability to bring creativity to bear is not a loss of profit, but of a child's welfare (Tierney & Farmer, 2011). If expectations are unrealistic, efficacious motivation suffers, leading to burnout and withdrawal from future efforts (Cropanzano et al., 1997). One implication for creative leadership is the provision of realistic expectations and the necessary resources for outcomes that are novel and useful and possess high quality, visually pleasing aesthetics.

Realistic workload pressure – distractions from creative work. Ross (2008) blogs “Nothing derails the creative train faster than distraction. Get something going – next thing you know someone wants to tell you all about a television show from last night or a personal crisis or a funny joke.” Distractions in education come in the forms organizational impediments such as negative politics and overly controlling policies. Also, distractions come from employee interruptions and other challenges that result from the physical work environment (McCoy, 2005). The environmental distractions at work can restrict employees' experiences of creativity by interfering with their concentration on their job, or by heightening feelings of unpredictability and uncontrollability, thereby fostering the belief that the workplace does not support their efforts to be creative. When employees' perceive that the work environment discourages creativity, in turn, then it is expected to increase their vulnerability to job dissatisfaction and stress (Stokols & Zmuidzinas, 1996).

The nature of creative group work has a relationship with the physical work environment. Employees need space to work, space to meet, and space to think alone (McCoy, 2005). When work tends to involve creativity, non-routine, shifting patterns of collaboration, or informal

processes of consultation, then work place design provides a tacit but unique means to structure the processes of work and communication (Peponis et al., 2007). The physical environment is a mechanism by which many of these stimulants and obstacles are delivered. Available and accessible team spaces may not only alleviate time pressures, but also provide opportunity and the mechanism by which new ideas are discussed and developed. In many cases if the physical environment, which can be described as spatial organization, architectonic details, views, resources, and ambient conditions, is not supportive of creative efforts, then distractions occur (Stokols & Zmuidzinas, 1996).

Allen, 19977, and Wineman & Serrato, 1999, provide examples of research supporting the relationship between the physical environment and social behavior. The spatial design and amount of visual access can facilitate or inhibit communication and collaboration between team members by providing access between team members and their resources, which can influence efficiency and productivity. Opportunities for formal and informal meetings can encourage communication, thus permitting the development of multiple problem solving approaches (McCoy, 2005). Not taking the physical environment into consideration may lead to loss of communication and interaction, cooperation, commitment, autonomy, encouragement of team functioning, and creativity (Stokols & Zmuidzinas, 1996).

Outcomes

Introduction. “Few topics within the study of creativity and innovation insight as much passion as assessment or measurement” (Plucker & Makel, 2010, p. 49). Kaufman & Sternberg (2010) remind us of an episode of the television show called *All in the Family*. Archie Bunker has possession of a remote controlled doorbell ringer that someone invented. One could ring a person's doorbell from another's automobile so as not to have to ring it upon reaching the door.

The contraption was novel but not useful. In this episode, people rang the doorbell in their car and, when the occupants came to the door of the house, they found no one was there and shut the door in exasperation. By the very definition of creativity, there has been much discussion about what truly is creative and what is not. KEYS® measures the degree to which environmental variables stimulate and impede creativity. Amabile et al (1996) find that organizations with work climates where creativity is stimulated and impediments are minimized produce more creative outcomes than organizations with opposite work climates.

In an effort to more directly determine the agreement between creativity and the environmental factors assessed in the KEYS® survey, a trend analysis for each of the environmental scales was performed. In these analyses, respondents' creativity scores (means on the Creativity criterion scale) were mapped against their mean score on the particular environmental scale. The trend patterns for 7 of the 8 environmental scales match well with the labeling of the scales as Stimulants to Creativity or Obstacles to Creativity. Each of the six Stimulants to Creativity scales shows a clear positive slope, with creativity increasing as the frequency of the stimulant in the work environment increases. In contrast, the Obstacle of Organizational Impediments negative slope with creativity decreasing as the frequency of the obstacle in the work environment increases. However, the predicted Obstacle of Workload Pressure does not show a defined trend. Even though the slope is slightly negative, the pattern is not considered a meaningful one. Overall, the environmental stimulants appear to be more strongly related to creativity than the environmental obstacles (Amabile et al., 1996).

Amabile et al. (1996) state creativity is a creative organization or unit where a great deal of creativity is called for and where people believe they actually produce creative work. Productivity is an efficient, effective, and productive organization or unit (Amabile et al., 1990).

For purposes of this study, an outcome definition is the perception of organizational creativity as reported by the teachers and director working in the high school where this research was conducted. Creativity is not only about outcomes but also about process, about how one does a task (Richards, 2010). The process of problem finding and problem solving is key to creative outcomes.

Outcomes – creativity. Creativity is defined as the generation of novel, original and unique ideas concerning procedures and processes that can be used in an organization and are appropriate and significant to organizational problems and goals (Hennessey & Amabile, 2010). Creative work in an organization is original and distinctive with respect to the work with which it is compared. Ideas used for solving organizational problems must meet standards of both originality and usefulness (Kaufman & Sternberg, 2010). For example, students of architecture typically develop complex drawings with the help of Computer Assisted Drafting (CAD) software. A student may sketch a unique design with pleasing esthetics, which may be one-of-a-kind, but the drawing may not pass the test of usefulness for achieving curriculum goals of the architectural course in which he is enrolled.

An integration of several lines of research where creativity restraints are investigated is illustrated in Figure 2 (Appendix A). Many researchers have considered the notions of novelty and usefulness in creativity. M. Nagasundaram and R. P. Bostrom (1995) explain “novel” as a modification in a paradigm where certain patterns represent a common assumption or point of view held by people in an organization. P. B. Paulus (2000) clarifies “useful” as an idea that is appropriate but not unique. R. Cooper and B. Jayatilake (2006) bring the two attributes together when detailing creativity but did not offer a conceptual diagram.

Definitions for Creativity, Innovation, and Processes

The following definitions help provide an understanding of how creativity operates at the individual, group, and organizational levels:

Individual creativity - “Individual creativity is a function of antecedent conditions, cognitive styles and abilities, personality, motivational factors, and knowledge” (Woodman et al., 1993, p. 301). These individual factors are both influenced by and influence social and contextual factors (see Equation CI, Figure 1). Individuals work in groups to solve problems specific to the school (Shalley & Gilson, 2004).

Group creativity - “Most creative work that gets done in organizations is accomplished by two or more individuals working closely together” (Hennessey & Amabile, 2010, p. 580). The group in which individual creativity occurs establishes the immediate social influences on individual creativity. Proponents of group creativity acknowledge that group creative efforts are best suited for complex organizational problems with multiple parts that span several domains (Brophy, 2006). Group creativity is influenced by group composition (e.g., diversity), group characteristics (e.g., cohesiveness, group size), group processes (e.g., problem-solving strategies, social information processes), and contextual influences stemming from the organization (see Equation Cg in Figure 1) (Woodman et al., 1993,

Organizational creativity - “the creation of a valuable, useful new product, service, idea, procedure, or process by individuals working together in a complex social system” (Woodman et al., 1993, p. 293). Organizational creativity (the creative outcomes of a complex social system) is a function of group creativity and contextual influences from the environment (see Equation “Co” in Figure 1) (Woodman et al., 1993, p. 308). These contextual influences interact and influence each other so that leaders often find that the actual changes they are trying to implement are influenced by other contributing factors (Isaksen, 2007). Therefore, taking a

systemic approach may be the most productive way to create an environment conducive to creativity (Puccio & Cabra, 2010).

Innovation – For the purpose of this paper, innovation may be mentioned but is not a topic of research interest. Creativity and innovation are often used interchangeably because creativity researchers tend to use them simultaneously. Although innovation and creativity are theoretically and empirically linked, each is a distinct concept. Innovation is the intentional introduction and application that increases effectiveness in a job, processes, and product that change boundaries, job descriptions and work flows (Paulus & Nijstad, 2003). Innovative outcomes bring about benefits from new ideas and may include the following: different distribution of economic resources, personal growth, increased job satisfaction, improved group cohesion, and productivity gains such as increased proficiency levels on student achievement tests. Innovation is, therefore, the introduction of new and improved ways of doing things in a school. “Innovative schools are organizations where group creativity is the main driver of new knowledge and innovation” (Kaufman & Sternberg, 2010, p. 147).

Problem finding - Because life itself brings on enough problems without intentionally seeking them, the need for problem finding seems unnecessary. However, problem finding is an important component of the creative process (Okuda et al., 1991). Problem finding is the group’s ability to construct problems that relate to organizational problems (Hu et al., 2010). A simple example for problem construction and its effect on problem solving:

An automobile is traveling on a deserted country road and blows a tire. The occupants of the automobile go to the trunk and discover that there is no jack. They define their dilemma by posing the problem: "Where can we get a jack? They look about, see some empty barns but no habitation, and recall that, several miles back they had passed a

service station. They decide to walk back to the station to get a jack. While they are gone, an automobile coming from the other direction also blows a tire. The occupants of this automobile go to the trunk and discover that there is no jack. They define their dilemma by posing the problem: "How can we raise the automobile?" They look around and see, adjacent to the road, a barn with a pulley for lifting bales of hay to the loft. They move the automobile to the barn, raise it on *the* pulley, *change* the tire, and drive off (Getzels, 1982, p. 38).

Problems can look very different depending on such factors such as how much of the problem is known, how much of the method for solving the problem is available, and how much agreement there is in a group as to what constitutes a good solution (Nijstad & Levine, 2007). Like the people who quickly changed the car tire, when creative people discover problems, they tend to raise new questions and regard old problems through a different lens (Reiter-Palmon et al., 1997). Equally important, they are more intrinsically motivated to solve the problems they encountered (Okuda et al., 1991).

Problem solving - Once problems have been clearly identified, the creative process of solving the problem begins. Creativity is a cognitive function that involves the ability to synthesize, but it is different from intelligence. It involves critical thinking as well as imaginative insights (Davis, 1996). Divergent thinking is a thought process or method that is usually applied with the goal of generating ideas. It is often used in conjunction with convergent thinking for creative and problem-solving purposes. The different methods of divergent thinking are: convergent logical problem solving (closed problems/closed solutions); divergent thinking (closed problems/open solutions); problem invention or discovery (as in insight puzzles; open problem finding/closed solutions); and true creativity (open problem finding/open solutions)

(Davis, 1996). Logical thinking, analysis and distinct kinds of thinking must be cultivated both in the individual, in groups and in the surrounding society (Florida, 2003). This research shows that teachers are more likely to generate creative ideas when they work in an environment that calls for creativity and when levels of creative efficacy are high. Teachers who generate ideas that are both novel and useful believe they and their school is efficient, effective, and productive.

Chapter Summary

Teachers interact with each other and their work environment, also known as a work-climate. The work climate is comprised of a conglomerate of variables that either stimulate or impede creativity in an organization. Climate stimulants serve as creativity enhancing forces, and people working under those conditions are more likely to become self-led. Most literature linking motivational orientation with creativity focuses on intrinsic motivation. The school setting, however, complicates motivational challenges. Teachers are expected to accept the goals of the organization and seek to develop strategies and solutions regardless of whether they enjoy the activities or would choose to engage in them if other alternatives were available.

The literature review illustrates how important management practices are in relationship to climate creation. Ekvall's, (1996) findings suggest that leadership behavior is the single largest determinant of the variance in many of his studies on stimulants of creativity. Shalley & Gilson (2004) suggest that organizations already create climate, whether deliberately or not and climates conducive to creativity face a number of tensions.

A creative school requires a unique leadership approach—one that may not be currently captured by traditional views of leadership (Hunter et al., 2011). In many cases, innovation in schools lives or dies based on the leader's skills and wisdom to create a supportive work-environment by balancing people's interests and avoiding either-or decisions. A creative climate

allows teachers freedom to decide their own projects and a sense of control over their own work (Woodman et al., 1993). Teachers, when their work is perceived as challenging and important, will give their best efforts and will perform better when intrinsic motivation (passion for their work) exists (Amabile & Kramer, 2007). Employees are more intrinsically motivated when the school leader is perceived as a good work role model. Leaders of creative work environments must serve as the gatekeepers of ideas—backing those ideas that may be most successful for the team and organization (Mumford et al., 2003). Since most creative work that is accomplished in schools is by two or more people working together (Hennessey & Amabile, 2010), then school leaders need to create a creative work climate that support a diversely skilled work group in which people communicate well, are open to new ideas, constructively challenge each other's work, trust and help each other, and feel committed to the work they are doing (Amabile et al., 1996). Creativity is enhanced in school organizations where risk taking is encouraged and supported and where there is an organic organizational design to encompass open information flow to solve school-wide problems. A creative work climate within school organizations flourishes when individuals and groups are provided with fair, constructive judgment of their ideas, the organization has mechanisms in place for developing new ideas, and there is an active flow of ideas and a shared vision (Amabile, Burnside, & Gyskiewicz, 1995). The tension and balance between supporting the climate for new ideas, and the possibility of failure is a high risk-taking benefit, yet can yield new bold initiatives and breakthroughs (Edmondson, 1999; Shalley & Gibson, 2004). To create a creative school climate, schools and organizations must provide access to internal and external resources needed for creative work to happen. In this time of uncertainty, constraints, and reductions of resources available, schools have a complex role in

striking the right balance between providing employees enough resources to be creative, but not so much that they are no longer motivated to perform their jobs (Amabile & Gryskiewicz, 1987).

Much of what is revealed in this review of related literature on work climate involves stimulants to creativity and innovation. When a particular attribute in a climate dimension that stimulates creativity is either missing or enacted in the wrong way, the opposite of the intended impact can be perceived. That is to say, almost any domain attribute can be perceived as a stimulant or as an impediment to creativity and can serve to be useful, appropriate, and significant to solving organizational problems and goals or be a barrier to creativity (Hennessey & Amabile, 2010; Amabile et al., 2002; Hunter et al., 2011; Karau, 1992).

Chapter III: Methodology

Introduction

The overall goal of this research was to gain a greater understanding of how organizational creativity is influenced within the work environment in a school setting. This research is a single case study of a high school where teachers worked together to produce creative, cross-curriculum student learning projects and solve other department and building-wide problems. Data was gathered using the KEYS® instrument survey, research interviews, a collection of various archival records, and observations, all with the intent of describing the schoolwork environment. The use of both qualitative and quantitative study methodology and data collection did provide relevant relationships exhibited by this research, and, therefore, both were used in the collection and analysis of this study's data.

The work environment at Creation Station High is comprised of multiple personalities, styles, policies, and interactions of many people, from top management to individual teachers in work groups (Amabile, Conti, Coon, Lazenby, & Herron, 1996). Teachers interacted within their schoolwork environment and formed perceptions about social and contextual influences such as management practices, organizational encouragement, and resources. The degree to which teachers perceived their work environment as stimulant or inhibitor to creativity, and the degree to which they believed they produced creative outcomes was measured by KEYS®, a tool designed to measure the climate for creativity innovation within a work group or organization. Due to the fact that there were more variables of interest to the researcher than there were data points in the survey, additional data were collected from multiple sources, such as from teacher meetings, public student project exhibitions,

interviews, archival records, and the data from those sources were then analyzed and converged in a triangulating fashion (Yin, 2008).

This chapter presents sections delineating the research design, specifically the setting, respondent sample, method of data collection, measurement instruments utilized, and analytical procedures employed. Before moving to that, I include a statement of my own positionality as a researcher.

Researcher's Personal Position

I come to this research believing that work climates that foster creativity are important and necessary. As a practitioner who worked in a creative work climate, I was a team member where individuals and the collective improved leadership effectiveness in what can best be explained as a creative outcome. One year, in particular, was a creative highlight. A consultant and I designed tools and processes that provided each team member with multiple sources of anonymous feedback from which individual goals were developed. Each leader reviewed his/her feedback with a private coach who helped author a personal improvement plan that was not tied to a formal evaluation. Individuals and their coach customized strategies to overcome personal and professional barriers of effective leadership practice and made breakthroughs rather than incremental improvements typical of a standardized improvement process. By the end of one year, peers from across the state recognized the team as a model for change.

As a scholar, I wanted to conduct research in a school with a reputation for having a creative work climate where individuals worked in groups to solve problems at the individual, group, and building levels in creative ways. If a creative school work-environment that produced creative outcomes can be measured by the science of research, an authentic, relevant model of organizational creativity could situate the potential and add to the discourse and practice from

the schoolroom to the boardroom. My hope lies in future-oriented school organizations that will face, head on, the extraordinary challenge of increasing academic proficiency and fostering creative problem solving skills across minority and majority populations. Only then can our high school graduates be fully prepared to contribute to a creative society in the 21st Century.

I willingly put aside my personal positions on creativity and monitored my thinking and behavior while I conducted my research.

Setting

My research setting was a high school in Southern California. The high school was considered for research because several nominations from scholars and practitioners described this high school as having a reputation for being creative. Informal research, including traveling from Michigan to California and touring the building, was conducted and the findings yielded a high probability of finding a creative work environment. Creation Station High (CSH) is the original Creation Station High school founded in the fall of 2000. The school is located in California and serves approximately 570 students in grades 9-12. Creation Station High began in 2000 as a single charter high school launched by a coalition of city business leaders and educators. It has evolved into an integrated network of schools spanning grades K-12 known as Creation Station Village. The Village houses a comprehensive teacher certification program and a new, innovative Graduate School of Education, offering a Master's in Teacher Leadership and School Leadership embedded within a K-12 learning community.

The CSH school building is part of an industrial site and resides next to an outdoor shopping center. The building is located less than two miles from an international airport and lies within the normal flight path for departing airplanes. The building has two major sections. One section of classrooms has tall ceilings and glass walls that extend approximately two-thirds to the

ceiling. The other section has classrooms with traditional eight-foot ceilings and wood doors. Most teachers need to share their classroom during their planning period with another teacher who does not have his/her own classroom, thus causing teachers to plan in other empty rooms when available. The school has one copy room along with a wireless printer in each section or wing. The one meeting room is frequently used for information sharing with groups who tour the building to learn more about student creativity and teacher pedagogy. Another use of this room is for small group presentations while executives market the school to potential investors and grant providers. Teacher meetings take place in one of the classrooms adjacent to the Director's office, and there is no formal or informal teacher lunchroom. Teachers eat in their classrooms or go out of the building to eat. The atmosphere is relaxed, as evidenced by students referring to teachers and the director/principal by their first names. Also, the professional dress attire includes collared casual shirts and blue jeans or a loose-fitting cotton top under a sundress.

Creation Station High School is technically distinct when compared to a traditional public high school. Management practices include having high expectations for individual and group creative ideas and allowing teachers freedom to design their curriculum without administrative approval and oversight, expecting teachers to work in groups to create project based learning opportunities across two or more curriculum areas, relying on teacher passions and personal interests for the generation of curriculum ideas rather than consulting state curriculum standards, and expecting each student will experience unique, high-quality, tailored learning experiences designed by teachers who never receive formal evaluations. Creation Station High encourages creativity by establishing mechanisms for developing new ideas and supporting the flow of ideas and information across the organization, providing a student teacher ratio that hovers around 42/1 per day, providing a climate where people feel safe to take risks when designing and

implementing curricular and pedagogical ideas, and allowing teachers full authority to develop the master schedule. Resources for the school come from state funding based on student enrollment, several grants, including the Gates Foundation, and one teacher whose departmental resources are funded by a local public school district that has several secured student seats in the school without placing them in the lottery from which all other students are selected. However, the selection is not completely random. Rather, student populations are randomly selected in proportion to the demographics of the city in which it resides. If students apply and are not selected, they receive a higher ranking with each consecutive selection process.

Creation Station Village goals include:

- Serve a student body that mirrors the ethnic and socioeconomic diversity of the local community.
- Integrate technical and academic education to prepare students for post-secondary education in both high tech and liberal arts fields.
- Increase the number of educationally disadvantaged students in math and engineering who succeed in high school and post-secondary education.
- Graduate students, who will be thoughtful, engaged citizens.

The goals for the CSH include:

- Support the development of excellent schools based on the CSH design principles.
- Become a self-sustaining central organization conducting “behind the whiteboard” management practices that are as exemplary as the “in front of students” programs offered at CSH schools.
- Inspire and enable others in the public education community to adopt the CSH design principles and instructional practices.

Sample

Creation Station High employs 31 non-union teachers. One was on maternity leave and one was placed on long-term sick leave and died during the time research data was collected for this study. Creation Station High employs teachers with teaching experience and teachers who come from the private sector without teaching experience or a teaching license. Because Creation Station High operates its own teacher graduate program, it has teacher licensing issuance authority. Teacher diversity includes gender, race, longevity, domain specific curriculum expertise, and teacher preparation backgrounds. Those who come from the private sector enroll in Creation Station High's graduate program and receive a transportable degree and teacher license within two years, at no cost to the teacher.

Management is comprised of the director and the dean of students. Additionally, an executive assistant and a receptionist are stationed in an office adjacent to the school's main entryway. Several offices are housed in the school, one for the Chief Executive Officer of all the schools (i.e., Elementary School, Middle School, and one additional high school) as well as offices for people who serve as support staff for the entire Creation Station Village.

Rationale for Mixed Method Case Study

The research study is a multi-method, single case design that allows the researcher to capture the complexities of a creative work climate at Creation Station High during the 2011- 2012 academic year in a city in California. Because creativity is a complex phenomenon (Runco, 2004) influenced by personalities, styles, policies, and interactions of people interacting with their work-climate, the decision was made to conduct a field study. In order to understand kinds of teacher creative outcomes and how organizational creativity

takes place, it was necessary to study the real-life phenomena in its natural setting (Yin, 2008).

This study measured the degree to which variables of work-climate exist and illuminated a decision or sets of decisions – why they were taken and how they were implemented. This study used both strands of research, qualitative and quantitative methods, in order to discover themes or relationships exhibited by the individual approaches of research. Both strands have complementary goals and, therefore, were used in the collection and analysis of this study's data. Creswell (1998) provides additional underlying principles for the research design selection in this study. The case study approach will study any phenomenon within its natural context and to define any themes, constructs, or characteristic features (Creswell, J.W., 2003. & Gall, M.P., Borg, W.R. & Gall, J.P. 2003.) Any possible factors of management practices, organizational encouragement, and resources and their relationship to the creativity process in the school can then be characterized as a direct link by which teacher perception is influenced (see Glickman et al., 2001; Linklider, 1995; Binkley, 1995; Machell, 1995; Reagon, Case, Case, & Freiberg, 1993).

Quantitative Strand KEYS® Survey Instrument

Background. In a comprehensive review on situational influences on creativity, Hunter, Bedell, and Mumford (2007, p. 61) quantified research on a number of environmental stimulants or inhibitors of creativity including inner-group interactions, leadership, organizational structure, competition, and many others. Much of this research examines the correlation between successful work and situational variables and does not focus on assessments of creative environments per se. Two prior instruments assessed perceptions of organizational environments in general: The Organization Assessment Instrument (Van de Ven & Ferry, 1980),

which provides a reliable, valid, and comprehensive assessment of an organization's design, structures, and functions, and The Work Environment Scale (Insel & Moos, 1975), which assesses employees' perceptions of several broad dimensions of their daily work environments. Abbey and Dickson (1983) and Ekvall, Arvonen, and Waldenstrom-Lindblad (1983) analyzed how organizational climates can be conducive to innovation. However, it was only when Amabile (1983) extended her theory of creativity to account for how individual and team creativity unfolds within a work environment that she developed a survey to measure work environment. KEYS®, developed by Amabile (1987a, 1990, 1995a), was administered to teachers and school leaders in this current research to measure perceptions of a schoolwork environment. The underlying theoretical constructs for KEYS® derive from a theory of creativity and innovation in organizations, experimental research in a laboratory setting on the influence of the social environment on creativity, and non-experimental research on creativity and innovation in real organizations. KEYS® is a statistically valid and scientifically reliable research tool that was developed in three phases.

Phase 1. Both technical and nontechnical middle-level managers (N= 141, 42% response rate) were individually asked to nominate both the highest and the lowest creativity project with which they had been involved during the previous three years in the company. For both projects, they were asked to select only from that set of projects in which creativity was both possible and desirable, with creativity defined as “the production of novel and useful ideas by individuals or teams of individuals.” These managers were selected across four major divisions of the company. They briefly described each nominated project (using a standard questionnaire) and completed a KEYS® survey on each project (Amabile et al., 1995, p. 16).

Phase 2. To validate the creativity nominations of Phase 1, independent expert assessments of the level of creativity in the nominated projects were used. A group of experts from each of the divisions sampled in Phase 1 was asked to independently rate the projects nominated from that division on creativity, quality, and the experts' degree of familiarity with the project. These experts were kept blind to the initial nomination status of the projects, and high and low creativity projects were randomly intermixed in experts' rating questionnaires. They were asked to skip the ratings for any projects with which they were not familiar (Amabile et al., 1995, p.17).

Phase 3. Validated the environment assessments and creativity differences of Phase 1, with a different sample of individuals who were unaware of the study's purpose. In essence, it was a conceptual replication of Phase 1; it was used to allow more conservative tests of the work environment differences between high-creativity and low-creativity projects with a subsample of projects. All project team members of this subsample of projects were asked to complete a KEYS® survey to describe the work environment of their particular project. These participants did not know that the study concerned creativity or that their project had been chosen for any particular reason. (Amabile et al., 1995, p. 18).

The qualitative research described above revealed potential variables that are now measured by the KEYS® survey. Evidence of reliability is considerable across a wide range of applications and the technique has been applied to assess the creativity of a broad range of product across diverse research contexts (Amabile, 1983; Baer, 1993; Plucker & Makel, 2010).

In decreasing order of the frequency with which they were mentioned, the environmental obstacles to creativity were (1) various organizational characteristics having to

do with poor communication, infighting, and excessive red tape; (2) constraint or restriction of choice in how to do one's work; (3) organizational disinterest or apathy toward the project; (4) poor project management in the form of unclear goals or over-controlled work assignments; (5) evaluation pressure; (6) insufficient resources; (7) insufficient time; (8) emphasis on the status quo, or the maintenance of traditional practices; and (9) competition, especially within the organization itself (Amabile, Burnside,, & Gyskiewicz, 1995, p. 6).

Just as important, many of the environmental stimulants to creativity were revealed. In decreasing order of frequency, they were (1) freedom in deciding how to do one's work; (2) good project management in the setting of work assignments; (3) sufficient resources; (4) encouragement; (5) various organizational characteristics having to do with communication, cooperation, and collaboration; (6) recognition and feedback; (7) sufficient time; (8) challenging work; and (9) pressure arising from the urgent need for a solution (Amabile et al., 1995, p. 6).

Description of KEYS® survey. KEYS® is a 78-item survey instrument and can be administered as a paper-and-pencil instrument, an online instrument hosted by the Center for Creative Leadership as a purchased service which includes a booklet that provides overall scores and other information, and an online instrument through a web-based service provider such as Survey Monkey®. Items on the KEYS® assess the work climate for creativity, and the survey was last updated in 2010. Items on the survey are statistically grouped into 10 scales according to research with a database of over 12,000 individual respondents. Ratings of these items form a total of ten scales: eight work environment scales, 6 stimulants to creativity and 2 obstacles or barriers to creativity, and two criterion scales that measure perception of

outcomes, creativity and productivity. (Amabile et al., 1995, p. 15). The work environment scales that are stimulants to creativity are:

1. Organizational Encouragement of Creativity (15 items): An organizational culture that encourages creativity through the fair, constructive judgment of ideas; rewards and recognition for creative work, mechanisms for developing new ideas; an active flow of ideas; and, a shared vision of what the organization is trying to do. Sample item: “People are encouraged to solve problems creatively in this organization” (Amabile et al., 1995, p. 17).
2. Managerial Practices (11 items): A boss, who serves as a good work model, sets goals appropriately, supports the work group, and values individual contributions and shows confidence in the work group. Sample item: “My boss serves as a good work model” (Amabile et al., 1995, p. 17).
3. Work Group Supports (8 items): A diversely skilled work groups, in which people communicate well, are open to new ideas, constructively challenge each other's work, trust and help each other, and feel committed to the work they are doing. Sample item: “There is free and open communication within my work group” (Amabile et al., 1995, p. 17).
4. Freedom (4 items): Deciding what work to do or how to do it; a sense of control over one's work. Sample item: “I have the freedom to decide how I am going to carry out my projects” (Amabile et al., 1995, p. 18).
5. Sufficient Resources (6 items): Access to appropriate resources, including funds, materials, facilities, and information. Sample item: “Generally, I can get the resources I need for my work” (Amabile et al., 1995, p. 18).

6. Challenging Work (5 items): A sense of having to work hard on challenging task and important projects. Sample item: “I feel challenged by the work I am currently doing” (Amabile et al., 1995, p. 18).

Work environment scales that are obstacles to creativity include:

7. Organizational Impediments (12 items): An organizational culture that does not impede creativity through internal political problems, harsh criticism of new ideas, destructive internal competition, an avoidance of risk, and an overemphasis on the status quo. Sample item: 'There are few political problems in this organization’ (Amabile et al., 1995, p. 18).
8. Workload Pressure (5 items): Absence of extreme time pressures, unrealistic expectations for productivity, and distractions from creative work. Sample item: 'I do not have too much work to do in too little time’ (Amabile et al., 1995, p. 18).

The Creativity Outcomes criterion scales are include:

9. Creativity (6 items): A creative organization or unit, where a great deal of creativity is called for and where people believe they actually produce creative work. Sample item: “My area of this organization is innovative” (Amabile et al., 1995, p. 18).
10. Productivity (6 items): An efficient, effective, and productive organization or unit. Sample item: “My area of this organization is effective”(Amabile et al., 1995, p. 18).

KEYS® survey instrument includes several sections. The first section of the survey requires responses to questions about demographic data (gender, years of service at the high school, level in the organization (teacher or administrator). The second survey section is comprised of the 78 items previously described. The third section asked respondents, “What

is the single most important factor supporting creativity and innovation?” Respondents were allowed to select three responses from a list of between 42 and 52 choices. The fourth section asked, “What is the single most important factor inhibiting creativity and innovation?” Respondents were allowed to select three choices from a possible 52. The final section in KEYS® allows respondents an opportunity to give specific suggestions for improving the climate for creativity and innovation in their daily work environment. However, this section was not used in this current research because respondents had the opportunity to make suggestions during interviews.

Procedures for administrating the survey. Permission to use KEYS® was granted by Dr. Teresa Amabile and the Center for Creative Leadership provided the survey instrument, a guideline for the user, and their data base for the norm group. KEYS® can be used in organizations of any size. The analyses yield meaningful data with teams as small as five people or with groups as large as several hundred people.

This research was introduced to Creation Station High staff during a regularly scheduled staff meeting on Wednesday, February 1, 2012. On the same day, the KEYS® survey was sent to each teacher and administrator email address through Survey Monkey®, N = 33. KEYS® user guidelines provide guidance for the number of people needed for results to be reliable or consistent. For a sample size of 33 people, 30 completed surveys are needed (Amabile et al., 1995, p. 60). Test-retest reliabilities across a period of three months are good (ranging from .71 to .94) although, within a relatively stable work environment, these scores would be expected to remain fairly stable (Amabile et al., 1996, p. 1167). Thirty surveys were completed by February 12, 2012, 12 days from the time the survey became available.

Directions and explanations were provided for each section. The survey was designed to be completed in one sitting rather than allowing respondents to pause and return to their survey. Each respondent was required to either give or not give permission to be interviewed at a later date. Choosing to not participate in any item in this first section (demographic information and permission to be interviewed) resulted in ending the survey and the respondent was not allowed to move to the next sections of the survey to ensure quality of the data. Respondents were allowed to skip questions in sections two, three, and four.

The survey took approximately twenty minutes to complete. Each characteristic about the work environment was followed by a forced response without a midpoint (Amabile et al., 1995, p. 16), specifically a four point Likert scale ranging from "never or almost never true of your current work environment," "sometimes true of your current work environment," "often true of your current work environment," to "always or almost always true of your current work environment" (Amabile, Burnside, & Gyskiewicz, 1995, pp. 15-16). All items were written as simple descriptive statements regarding the work environment or the work itself (Amabile, Conti, Coon, Lazenby, & Herron, 1996, p. 1164). Some items are worded positively and some negatively in order to avoid response bias (Amabile et al., 1996, pp. 1164- 1165). The three checklists in the last two sections of the survey asked respondents to choose, from a list, the most important stimulant and the most important obstacle to creativity in their work place.

KEYS® Norm Group. KEYS® norm group consists of 186 groups from a variety of functions and departments in over 200 different organizations. These organizations represent a number of industries, including high technology, biotechnology, and electronics; chemicals, pharmaceuticals, and health products; traditional research and development; traditional manufacturing; banking; and consumer products.

Not all data in CCL's database are used to generate norms. Some data came from the use of KEYS® with very small groups, with groups that result from the use of the instrument in public programs or conferences, or from other uses that do not result in data on interactions with work environments. Groups in the norm group meet the following criteria: (1) The group must represent an intact working environment (i.e., samples of random individuals, as might be represented in data from a public leadership program, were not included); (2) the group must be comprised of more than 20 individuals; (3) within companies, groups that took KEYS® separately but that were part of the same working environment were combined and kept separate if they did not share one working environment; and (4) when one or more individuals were listed as members of more than one group, those groups were combined. However, if groups from the same company were parts of separate working environments, they were entered as separate groups in the norm sample.

Scoring the KEYS® survey. Use of the KEYS® survey was approved by Dr. Teresa Amabile and CCL and provided by CCL with no associated cost. Survey questions were copied from the KEYS® User's Guide and descriptive statistics used in scoring survey results were found in the KEYS® User's Guide. In creating displays of the survey, I matched many of the graphic characteristics (fonts, layout, colors, and format) to look similar to a KEYS® report published by CCL.

Scoring of the 78 items is based on an analysis of the ten scales comparing test responses of the group being surveyed to the existing database of over 12,000 respondents. Results are reported in charts – an organization is scored relative to the mean of other companies in the database (Amabile et al., 1995, p. 19).

KEYS® has been widely used in a variety of industries with different work contexts, and Table 1.0 displays KEYS® Norms Database Company Groups. Education is listed as an industry in this table with four sub-industries only:

Table 1.0

The Four KEYS® Surveys in Education

Industry	Sub-Industry	Company Pseudonym	Number in Sample	Year Data were Collected	Country
Education	County Educational Organization	N/A	11	1996	USA
Education	Family Foundation		17	1999	USA
Education	State Education Department		168	1996	USA
Education	University Group		37	1997	USA

CCL provides a second table: KEYS® Dimension Raw Means and Standard Deviations for all Company Groups and each dimension in the KEYS® survey, in the Norm Database.

Table 1.1

Sample

Item # in Survey	KEYS® Dimension Name	Mean	Standard Deviation
8	Organizational Encouragement	3.00	0.26
37	Managerial Encouragement	2.47	0.73
1	Freedom	2.65	0.27
26	Sufficient Resources	2.47	0.56

This study is the first to measure dimensions in a schoolwork environment but faces challenges when comparing scores from the target population to scores derived from industries with different work environment contexts. Moreover, the sub-industries within Education do not reflect a high school work environment.

Interpretation of dimension data. The KEYS® Survey Report was published by this researcher and the results reported using the following guidelines:

The title at the top of the graph names the organization or group whose results appear in the graph, along with the number of respondents who completed the survey. The vertical scale, labeled “Standard Scores”, presents the T-score values. This researcher computed the values, which are typically computed by the KEYS® scoring program. The standard scores presented on graphs from this research were computed by using the mean and standard deviation of all organization means (from all of the organizations in the database). As an example, the Freedom dimension score for the Creation Station High group was computed in two steps:

Step 1: Simple Z-scores are computed: (Creation Station High respondents’ raw score mean on Freedom minus mean of database company group means on Freedom) divided by (Standard deviation of database company group means on Freedom).

Step 2: T-scores, used in all of the feedback graphs in KEYS® reports, are computed from the Z-scores. T-scores are a very common type of standard score in psychological testing. They have a mean of 50 and a standard deviation of 10. To arrive at these T-scores, the following calculation is applied to the Z-score computed in Step 1: (10 times Z-score) plus 50. T-scores have a mean of 50 and a standard deviation of 10. The line at 50 marks the average or the norm; this is the mean of means on each dimension, computed by using all organizations included in the norm group (other than the target organization).

Two lines are represented in each graph; orange represents standardized scores following the user guidelines, green represents standardized scores using the standard deviation from the “within” group.

For every dimension, a higher score is generally associated with higher creativity. Shading is used to help define several regions on the graph; these regions are listed vertically along the right-hand side of the graph: KEYS® Standard Score, Range, Verbal Description (60 or above are Very High/VH, 56 – 60 are High/H, 46 – 55 are Mid-range/M, 41 – 45 are Low/L, Below 40 are Very Low/VL). As an example, the first graph in the report represents the mean T- scores of each dimension followed by graphs that display T-scores for each variable within the dimension. See Dimensions and Outcomes - Overall Figure 3 (Appendix A).

Dimension scores range from 20 to 80. Scores of 80 or higher are graphed at 80. Scores of 20 or lower are graphed at 20. Less than 1% of scores fall outside the 20-80 range. An important reminder: ranges are for norm groups that represent creative organizations rather than all organizations, which include organizations described as having low-creativity.

For each dimension, either an orange or a green diamond depicts the target organization’s scores. Orange diamonds represent standardized scores using the mean and standard deviation from the group norm. Green diamonds represents standardized scores using the mean of the group norm and the standard deviation from the target population or the “within” group. While the patterns are similar, data points using the standard deviation from the “within” group hover closer around the mean. Because the norm group, including the subgroup (Education), work environment contexts is different than the high school work context, T-scores using both standard deviations are represented in each graph.

In interpreting the results and planning for action, it is extremely important to keep consideration of the two Outcome dimensions (Creativity and Productivity) separate from the Work Environment dimensions. The first eight dimensions describe factors in the work environment that can influence the work outcomes of Creativity and Productivity. These environment factors should be the primary focus of organizational diagnosis and improvement efforts. The two Outcome dimensions assess perceptions of the work itself. The quality of the work itself should change as the work environment changes. Thus, although these Outcome dimensions will be interesting for diagnostic purposes and especially for comparison with follow-up KEYS® assessments, the focus for improvement efforts should be on the environmental factors that can influence these outcomes.

All completed surveys were scored and survey results were shared with Center for Creative Leadership. Written and graphic descriptions of the results were generated. In addition, survey results were compiled using Excel software to determine the means and the standard deviations of the target group.

Quantitative

The overall goal of this single case study was to gain a greater understanding of how creativity emerged, if at all, at Creation Station High. The quantitative strand measured the degree to which teachers and administrators perceived management practices, organizational encouragement, and resources as a stimulant or as a barrier to their creative work.

Qualitative research in this study was concerned with meaning and not making generalized hypothesis statements (Crouch & McKenzie, 2006). The qualitative research strand in this study investigated other data sources for accuracy and alternative explanations as I generated an accurate picture of Creation Station High's work climate (Stake, 1995).

Propositions, procedures, and protocols were constructed (Yin, 2008b) in order to guide both data collection and analysis – efforts that went beyond simple repetition of data gathering to deliberative efforts to find of validity of data observed (Stake, 1995, p. 109). Data was gathered by interviewing school administrators and teachers; observing meetings and other interactions between staff members; and, collecting archival records.

Interviews

The intention behind conducting interviews stems from the researcher's intent to understand the experiences of individuals as well as the meaning they make of those experiences (Seidman, 1998). Open-ended questions were designed to provide participants the opportunity to tell the researcher something that either corroborates other data or something that possibly was not expected, which can create an effective form of collecting information that may seem “hidden” or beneath the surface of the work culture. Open-ended questions were effective when the researcher wanted to learn how or why school administrators and teachers did things, and how social and contextual influenced motivational patterns. Additionally participants shared their perceived knowledge about what or how those influences make them or the organization successful (Stake, 1995). These open-ended questions measured participants' reactions that were motivational in nature, such as values, beliefs, self-esteem and confidence, emotional reactions, and cultural information relating to the environment (Clark & Estes, 2002).

Fifteen teacher participants was a large enough representation of differences including gender, race, longevity, and traditional or non-traditional training (Mason, 2010). Because the aim in the case study of High-Tech-High was to describe faculty member perceptions of organizational creativity in one specific and relatively small organization, frequency was not

prioritized in this qualitative research as one occurrence of the data was potentially as useful as many in understanding the process behind the topic of organizational creativity (Crouch & McKenzie, 2006). Saturation indicated that further collection of new data would not shed further light on the issues. As an example, “Perception that performance evaluations are fair” is a survey item and has motivational consequences on teacher’s willingness to risk. The first interview revealed that performance evaluations never take place. Because this research relied on propositions, the interview question changed in order to learn how teachers perceived a work-climate with no clear evaluation method (Yin, 2008).

This case study tried to illuminate decision(s) concerning collective creative efforts in a high school, why they were taken, how they were implemented, and with what results (Ritchie, Lewis, & Elam, 2003). This case study methodology was chosen based on the theoretical framework of a creative organizational environment that specifies a clear set of propositions as well as circumstances, which the propositions are believed to be true (Yin, 2008).

Scale descriptions, theoretical propositions and interviews. Yin, (2008) suggests theoretical propositions should guide case study research. The original objectives and design of the case study were based on propositions, which, in turn, reflected a set of research questions. Theoretical propositions were developed after analyzing related literature, including the KEYS® survey. Tensions in the literature were identified before propositions were written. Questions were constructed in a manner that addressed the tensions in each guiding proposition.

1. Organizational Encouragement (15 items): “An organizational culture that encourages creativity through the fair, constructive judgment of ideas; rewards and

recognition for creative work, mechanisms for developing new ideas; an active flow of ideas; and, a shared vision of what the organization is trying to do” (Amabile et al., 1995, p. 17). Proposition: School organizations encourage creativity when teachers perceive they are safe when taking risks while they attempt to solve school-wide problems. When teachers anticipate receiving recognition and rewards for creative efforts, they expect to be fairly judged and evaluated. Questions: Describe a time when you took a risk when solving school problem? How did you feel? What kinds of recognition have you received after you worked on a project where you shared your ideas?

2. Management Practices (11 items): A boss, who serves as a good work model, sets goals appropriately, supports the work group, and values individual contributions and shows confidence in the work group (Amabile et al., 1995, p. 17). Proposition: The school principal/director, who is task-oriented, directs with clarity, and values participation and interaction positively impacts a climate that encourages creativity. Question: Why does the director and others say no to some ideas for study?
3. Work Group Supports (8 items): Diversely skilled work groups in which people communicate well, are open to new ideas, constructively challenge each other's work, trust and help each other, and feel committed to the work they are doing (Amabile et al., 1995, p. 17). Proposition: Teachers who commit to a team project feel support when trust is high and teachers from a several areas of domain specific knowledge consistently and openly provide and receive constructive feedback. Questions: Explain what it is about **1)** contributions from colleagues in different

areas of content expertise that made you feel your team could accomplish the goal?

Explain what it is about **2)** feedback from colleagues that made you feel your team could accomplish the goal?

4. Freedom (4 items): Deciding what work to do or how to do it; a sense of control over one's work (Amabile et al., 1995, p. 18). Proposition: Creative climate includes management practices that expect high levels of production and allow teacher freedom to decide what work to do. Questions: Can you give an example of when a building level leader expressed the need for you and others to help solve a school problem that was identified by them or by teachers as very important and then they allowed teachers to provide solutions? What options did you have in determining your level of involvement in that project? Do all teachers work on every school problem or are there times when you work in groups?
5. Sufficient Resources (6 items): Access to appropriate resources, including funds, materials, facilities, and information (Amabile et al., 1995, p. 18). Proposition: Creative school organizations provide access to internal and external resources needed for creative work. Question: When do you benefit from outside experts? Given that time, money, information, people, materials, and technology are resources, describe some resources that you needed? What could have you used more of?
6. Challenging Work (5 items): A sense of having to work hard on challenging task and important projects (Amabile et al., 1995, p. 18). Proposition: Creative organizations have climates where teachers perceive they give their best efforts

when involved in challenging and important work. Question: When working in a study group, when did you really felt like giving your best effort?

Work environment scales that are obstacles to creativity include:

7. Organizational Impediments (12 items): An organizational culture that does not impede creativity through internal political problems, harsh criticism of new ideas, destructive internal competition, an avoidance of risk, and an overemphasis on the status quo (Amabile et al., 1995, p. 18). Propositions: Schools that value creativity provide a sense of stability and continuity as well as flexibility and ingenuity. Schools that maximize collective creativity provide information to diminish unnecessary politics and competition and limit procedures and structures that protect status quo. Question: Can you describe how this organization minimized politics and competition?
8. Workload Pressure (5 items): Absence of extreme time pressures, unrealistic expectations for productivity, and distractions from creative work (Amabile et al., 1995, p. 18). Proposition: Effective organizations have expectations that teachers will engage in-group work and workload pressure is managed by limiting distractions and by providing sufficient time. Question: What distractions have been removed to allow you to engage in effective group work? What distractions still exist?

The Creative Outcomes criterion scales are include:

9. Creativity (6 items): A creative organization or unit, where a great deal of creativity is called for and where people believe they actually produce creative work (Amabile et al., 1995, p. 18). Proposition: Teachers are more likely to generate creative ideas

when they work in an environment that calls for creativity and when levels of creative efficacy are high. Question: When it comes to your ideas and those of others, how is this school different from other schools? What are some ideas you came up with and shared with other teachers?

10. Productivity (6 items): An efficient, effective, and productive organization or unit (Amabile et al., 1995, p. 18). Proposition: Teachers who generate ideas that are both novel and useful believe they and their school is efficient, effective, and productive. Question: Do you believe this school is more or less effective and productive than other schools? Why?

Final Question: What else do you think needs to be said?

Testing and refining questions. A pilot test of research questions was conducted prior to carrying out the research. The purpose was to refine the questions rather than collect data. A small sample of 4 school administrators who had teaching experience agreed to be interviewed. One participant taught in a private charter school where teacher creativity was encouraged. Two participants who taught in traditional public schools were selected because they described their work climate as positive. The final participant was selected because she described her work environment as discouraging and thwarting of teacher creativity. The sample allowed for disparate answers about motivational influence in an organization. Almost every question was altered as a result from what I learned. Some questions were eliminated while others were added.

Interview data collection procedures. Participants were selected after they provided permission to use their information under Michigan State University IRB research participant protection guidelines. Each interview was recorded through the use of a typical digital

recording device along with speech-to-text software. Prior to the interview, participants interacted with a speech recognition software program (Dragon Dictate®), which took six minutes to develop a voice profile, and agreed to wear headgear with a microphone that was connected directly to a computer. Text was automatically typed in a Microsoft Word document as the participant spoke. Each interview took place in the teacher's room or in an office when necessary and lasted approximately 55 minutes.

Audio recordings were loaded into a professional, audio software program designed to edit and mix sound (Adobe Audition®). Audio recordings were reviewed several times and individual clips were selected for coding. Coding took place by separating-out meaningful data in the form of an audio-clip while listening to the entire interview. Each audio clip of a coded response was saved in a separate folder. After audio files were reviewed several times, text from transcripts were found, corrected for accuracy, and placed into a table.

Document collection procedures. Several documents were available for review. Creation Station High has a rich website presence with several kinds of information, ranging from mission statements to teacher video recordings that describe projects and learning process to links where books published by students and teachers can be purchased. The Director of Credentialing and Teacher Development provided archival records in the form of handouts for beginning teachers who were involved in Odyssey, a summer workshop to help new teachers learn about the organization and prepare for the first days of school. All teachers' names are posted on the school webpage with links to their biography, personal interests, and personal websites or blogs. Student SAT scores and state test scores were also obtained.

Triangulating Qualitative and Quantitative Data. Data for this study were collected as a part of a single case study designed to investigate perceptions of a high school work

environment as either stimulating or inhibiting creativity. Beginning with a quantitative analysis, I established the degree to which teachers and school leaders perceived their work-environment by collecting, analyzing and reporting responses to the KEYS® survey. See Figure 3 (Appendix A) for insight into how and why climate dimensions were perceived as stimulating or as inhibiting (a barrier to creativity), a qualitative analysis of eight work-climate dimensions and two criterion dimensions was conducted. Once surveys were distributed, a qualitative analysis on interviews, observations, and archival records were carried out. All qualitative data were subjected to a two-stage coding process. The coding scheme specified dimensions measured by KEYS® and interview responses were assigned as either stimulating or inhibiting of employee creativity in the KEYS® survey. Data were labeled *stimulating* if interview responses were positive (expressing opinions that described decisions and behaviors as stimulating creativity). Data were labeled *inhibiting* if interview responses were negative (expressing opinions that described decisions and behaviors as inhibiting creativity). Observations and archival records were coded as either stimulating, or inhibiting creativity. Data coded as neutral helped shed light on perceptions by further describing certain interview topics. Other observation and archival records data were coded using the interview data, coding scheme. In order to link quantitative and qualitative data, a narrative explains patterns of behaviors, decisions, and perceptions of those who work at Creation Station High for each KEYS® dimension (Figure 4, Appendix A).

Research findings are organized into three categories: first, demographics that describe participants from the high school are shared. Second, each research question is provided and results are described in charts that display the quantitative strand and two tables are provided to explain the qualitative strand. Although a full qualitative analysis of all interview responses is

beyond the reach of this dissertation, exemplars of coded responses are provided in tables that correspond with each KEYS® dimension. The complete list of coded qualitative data is available in the Appendices.

Table 1.2

Sample of qualitative analysis of perceived “Management Practices – Work Group Supports”

Categories <i>positively</i> related to perceived Management Practices – Work Group Supports: Interview Data	
<i>Stimulating: had a positive relationship with respondent rating of Management Practices – Work Group Supports</i>	
My co-workers and I make a good team	(When talking about coming up with creative ideas) It usually doesn't happen in this space or on this campus. It usually happens, we'll get together next door at Sammy's pizza. We have a booth that we normally go to, it's relatively quiet. Usually alcohol is involved – I have an idea – she has an idea – we talk about it – it starts very disparate – different ideas coming together – we're both into the titles. So, we come up with the title for a project and coming up with the title for the project helps us focus on the content for the project.
Categories <i>positively</i> related to perceived Management Practices – Work Group Supports: Archival Data	
http://collegialcoaching.weebly.com/data-collection.html	
Categories <i>positively</i> related to perceived Management Practices – Work Group Supports: Observation	
are willing to help each other	Staff Meeting #1 Working with a small group of teachers at two different CSH campuses (CSHNC and CSMMA), we attempted to define what good teaching practices looked like, sounded like and felt like in the classrooms of these teachers. The teachers pushed us to establish a supportive process, but not to make the process so prescriptive that it felt inauthentic. With their help, we collected data on feelings and perceptions of the collegial coaching process at CSMMA and CSHNC, developed tools to help teachers brainstorm about their own practice and identify areas of strength and areas of need, developed a three step observation cycle that included individual observations, co-observations and peer observations, and developed protocols that assisted in the debrief of observations in a way that was meaningful and not overly prescriptive. We shot video of each one of these steps and hope Directors will be able to use this video in the future to support collegial coaching at their school

Table 1.2 (cont'd)

Categories *negatively* related to perceived Management Practices – Work Group Supports: **Interview Data**

Inhibiting: had a negative relationship with respondent rating of Management Practices – Work Group Supports

People in my work group
are open to new ideals

When we were doing the family history book the first time, Derek and I had a meeting and he felt like I was blowing him off when he asked about certain aspects of it...He would come when I was assembling the book and be like, Oh we should add this, and I'm like, It's kind of too late; like, this is what it is and we should have discussed this sooner. He felt like I was blowing him off, which frankly I kind of was. So it was a communication aspects

Validity and/or Threats

As the researcher, I assume that the following are true:

1. The participants did answer honestly and candidly
2. The measures are reliable and valid indicators of the constructs to be studied.

The data is accurately recorded and analyzed

3. The purposes and processes of the framework study have a degree of applicability throughout the selected school
4. A single school can be representative of elementary schools (K 5 or 6), middle schools (6-8) and high school (9–12) within a given district.

This study is limited to the certificated teachers at a single school site who voluntarily “agreed” to participate and the documentation is limited to that school site. The individual experiences of each teacher and his/her relationship with school leadership may influence participant responses. The validity of the study is limited to the reliability of the instruments used, and to the honesty of the responses of the subjects to the instruments, and to the skill of the researcher. Survey studies, such as this study, may be compromised by the comparability of results across public and private organizations. Surveys are limited in those in-depth answers.

Finally, the findings may not be generalized beyond the school site in which the study was conducted.

Chapter Summary

The high school was considered for research because several nominations from scholars and practitioners described this high school as having a reputation for being creative. Informal research, including traveling from Michigan to California and touring the building, was conducted and the findings yielded a high probability of finding a creative work environment. Once permission to conduct research was granted, a formal investigation pursued. Both research strands, quantitative and qualitative, were used in this research. Quantitative data were collected from the KEYS® survey. Qualitative data were collected from interviews, observations, and archival records. Data were triangulated (Yin, 2008b) and research findings are presented in Chapter IV. This chapter described the research methods utilized in this study to investigate the perceptions of teachers on the work environment that either enhanced or were barriers to organizational creativity. Included in the discussion were descriptions of the research design, the sample and population, the instrumentation, data collection, and data analysis. Chapter IV presents the summarized data of this research study and the analyses of that data by research question.

Chapter IV: Findings

Introduction

Chapter Four reports research findings of a single case study of a public charter high school work climate. This report contains detailed information about how individuals perceived the work environment and its influence on their creativity. This chapter begins by describing the profile information of those who participated in this research. Second, a brief explanation is provided on how data were scored or coded and displayed. Third, a general overview of research findings is provided. Fourth, quantitative, and qualitative data are displayed and explained. This chapter is sequenced by research questions in the same numerical order as the survey items appeared in the KEYS® survey provided by The Center for Creative Leadership®: Management Practices (Freedom, Challenging Work, Managerial Encouragement, and Work Group Support); Organizational Motivation (Organizational Encouragement, Lack of Organizational Impediments); Resources (Sufficient Resources, Realistic Workload Pressure); and Outcomes (Creativity and Productivity). This chapter concludes with information about highest and lowest rated items and the most important factors affecting employee creativity and productivity.

Findings

Demographic Information. Data for this study were collected and as a part of a single case study designed to investigate perceptions of a high school work-environment as either stimulating or inhibiting creativity. Because KEYS® results describe a work environment – not an individual, both teachers and a building administrator participated in the survey, yielding 30 responses from a total of 33 employees and is illustrated in Figure 5. Years of service ranged for 0 to 15 years because the founding organization began approximately 15 years ago and the

school opened in the fall of 2000. Both school administrators and half the teaching staff (15) participated in a structured interview.

Respondent Profile

Who completed this survey?

This report is based, in part, on the analysis of 30 responses; 29 teachers from a staff of 31 and 1 of 2 school building administrators. Below are demographics about the people who responded to the survey.

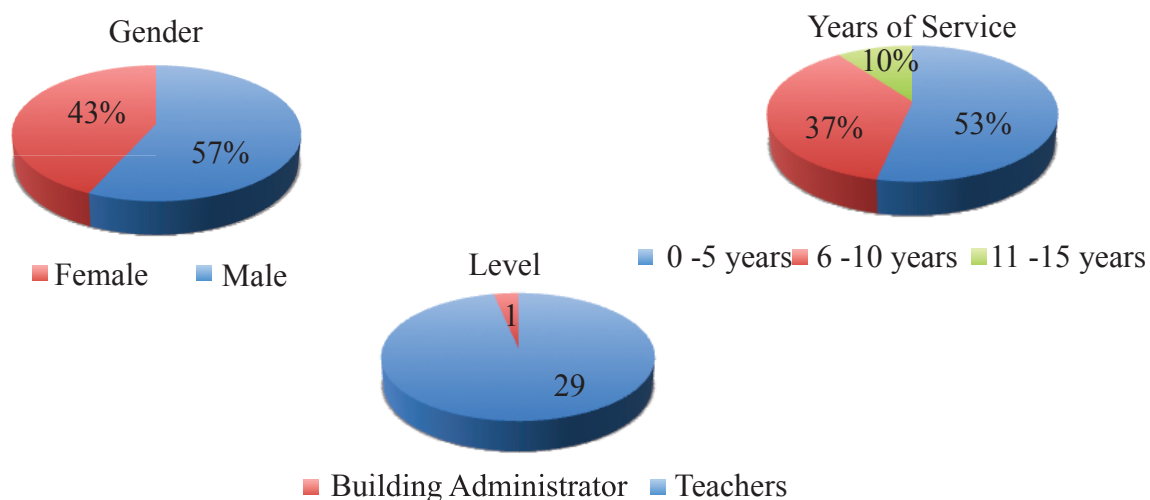


Figure 5

For interpretation of the references to color in this and all other figures, the reader is referred to the electronic version of this dissertation.

Beginning with a quantitative analysis, the degree to which teachers and a school leader perceived their work-environment was established by collecting, analyzing and reporting responses to the KEYS® survey. The Figures 3-17 (Appendix A) depict Creation Station High results in comparison to a norm group. Verbal (text) is used to provide full descriptions of each dimension and each item, and to provide a word for the relative placement of the organization's result on that dimension or item (such as "Very High" or "Mid-range").

To gain insight into how and why climate dimensions were perceived as stimulating or inhibiting creativity, a qualitative analysis of eight work-climate dimensions and two criterion dimensions was conducted. Data were labeled *stimulating* if interview responses were positive

(expressing opinions that described decisions and behaviors as stimulating creativity). Data were labeled *inhibiting* if interview responses were negative (expressing opinions that described decisions and behaviors as inhibiting creativity). Observations and archival records were coded as either *stimulating* or *inhibiting* creativity. Observation and Archival data were coded using the same coding scheme as interview data. A complete qualitative analysis of all interview responses were coded, yet, for this dissertation, examples of exemplars of coded responses are provided in tables that correspond with dimensions and quantitative results for the KEYS® survey.

Scores

T-scores have a mean of 50 and a standard deviation of 10. The line at 50 marks the average or the norm; this is the mean on each dimension, computed by using all organizations included in the norm group. The norm group consists of only organizations rated as “high-creative”. Data from “Moderate” and “low-creative” organizations were not used to determine T-scores or standard deviations.

Dimension scores range from 20 to 80. Scores of 80 or higher are graphed at 80. Scores of 20 or lower are graphed at 20. Less than 1% of scores fall outside the 20-80 range.

Very High/VH= score of 61 or above
High/H = score range of 56-60
Mid-range/M = score range of 46-55
Low/L = score range of 41-45
Very Low/VL = score of 40 or below

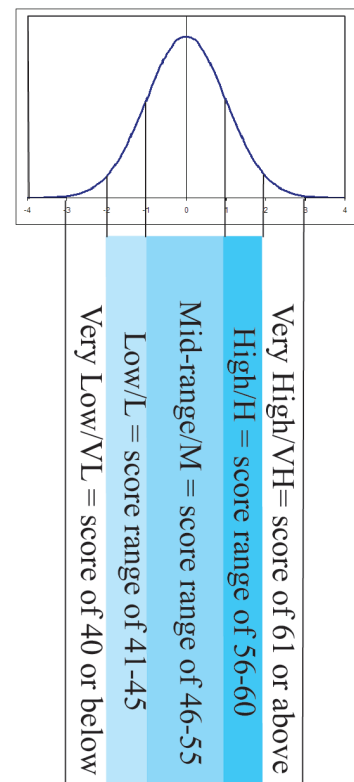


Figure 6

Figure 6 reports mean scores for each climate dimension. CSH survey results are compared to the norm group of other organizations rated as ‘creative’ and results graphed in Figure 7 (Appendix A) show that all means scores are at or above the group norm. Two dimensions have means scores, “Very High,” three dimensions have mean scores, “High,” and

five dimensions have mean scores, “Mid-Range.” Dimensions and Outcomes data suggest Creation Station High School’s (CSH) work environment had a positive influence on creative outcomes; the perception of organizational creativity as reported by the teachers and director working at CSH.

CSH teachers solved a variety of problems with creative and noncreative solutions. Participation on these work projects ranged from one teacher, teachers working with one or more teaching partners, teachers working with others in a curriculum department, teachers working with others assigned to the same grade level, and all teachers working together at same time. Science teachers helped solve a school-wide problem with chemical storage problem by replicating safety procedures from another school. Two teachers led the standard accreditation process, a convergent process of preparing paperwork and other measures of accountability. However, two or three teachers, from different curriculum domains, accomplished the majority of creative work as they designed and implemented thematic project-based learning experiences for their students. Under the supervision of the school director, one or more teachers led most if not all projects.

Teachers of senior students identified a problem with senior attendance and solved the problem by developing a program called “Ender-session” described by one teacher:

By May our seniors are pretty much checked out...So rather than using that, like let's fight this battle for the last 6 weeks of school, what can we do to harness their energy, what can we do to make it productive? In addition, that's where ender-session came from. The idea is that we all create our own new class. So, I'm not doing math this year, I'm doing a healthy living so we are doing some nutrition, we are doing some exercise, we are going to pick up trash at the beach, we're going camping. We are going to do all kinds of different personal explorations about, you know, life and health and happiness. So from calculus, that's pretty much on the opposite spectrum.

Teachers in the mathematics department identified the lack of student efficacy and perseverance as a problem and solved it by designing a lesson to help students develop a value for persevering through challenges despite having an available solution:

(Two other math teachers) and myself integrated her seniors, my sophomores and his freshman students. We gave them (students) the exact same problem and prefaced it in a very similar manner to see which kids would find innovative or creative ways to approach the problem...This was an issue that came up in discipline meeting we didn't like how math was heading in the C.S. high school. We approached this as a solution and it worked very well for the goal that we are looking for: persistence and mathematical thinking. The students didn't come up with a solution but they were coming up with different ways of representing it...At some point I elected to say 'five groups were doing this, another group was a couple steps ahead of them, on that path', and they can continue and join them or keep moving to try a different way. That way we were not spreading all 4 or 5 groups in the exact same way at different paces...I think all the students got the point that we were going for...They worked for 50 continuous minutes on a problem that had no conclusion, so we were satisfied.

Most of the creative work that takes place is when teachers work with partners and develop thematic projects for students. Emerson explains:

One project we did together was entitled Chemistry and Conflict. So, on the chemistry's side they studied the chemistry of certain elements and chemical compounds. On my side (humanities), they studied historical conflicts related to those elements or compounds. So if they were studying the chemistry of gold on my side they were maybe studying instances of the mining of gold in Africa and the exploitation that the social economic exploitation which is part of that. For the final product the students published a book like this (shows the book) and we have a big copy of that book, which is out on display on the on the front desk there.

Teachers assigned to the 11th students were invited to work on a project and a teacher describes how a solution to a problem resulted in a loss of one staff position:

Two years ago we changed how we did 11th grade internships (student work-study program). All students in the 11th grade go on an academic internship in the community mostly local businesses, both nonprofit and for-profit organizations. Originally, 7 years ago, we provided transportations and students went out for a semester on Tuesday and Thursday afternoons to their place of work. We had an internship coordinator who

worked on placing students in each of their locations. The 11th grade teachers prepared students for internships but there was a big disconnect between the content that we were doing in the classes and internship. For example it was difficult and challenging for me to connect World War II with internships. I ended up either cutting short a project that I was working on or really focusing on internship readiness but that also felt like I wasn't preparing them for internships. I had students who were gone two days per week and when they came back, I didn't have a big connection with what was going on in their internship. We needed to find a way to connect school with internship. For a variety of reasons we decided to phase out the internship coordinator position on our campuses. Now we have the 11th grade teachers and advisors work with the students on their team to find internship placements for themselves and to really dedicate a significant amount of time making those connections with students in finding out their interest. When they find their own internship or often even more invested in the internship process. Then we shifted from 2 days per week to 4 weeks every day, all day. (11th grade teachers stop teaching all together and perform the tasks of on-site mentoring for 4 weeks.)

To provide a clearer “picture” of the work climate within the school organization, each dimension mean score is compared to the others in Figure 7 (Appendix A) and each is explained in the following sections of this chapter.

RQ#1: Management Practices

How and to what degree do school principal management practices impact a work environment where teachers perceive they have a sense of control over their work, given challenging goals and important projects, where the principal encourages behavior of the individual and a diversely skilled work group that communicates, and is committed to generating creative ideas?

Freedom. Proposition: A creative climate includes management practices that expect high levels of production, yet allows for teachers freedom to decide what work to do.

Freedom is deciding what work to do or how to do it; a sense of control over one's work (Amabile, Conti, Coon, Lazenby, & Herron, 1996). Amabile et al., (1996) and Enson et al., (2001) suggest that there is reason to suspect that freedom, or autonomy granted, contributes to

creativity by both motivating creative work and allowing individuals to pursue their unique insights.

CSH survey participants reported having an unusually high degree of freedom. Figure 8 (Appendix A) reports results that show the degree to which respondents perceive having freedom to decide what work project they will do and have a sense of control over their own work and ideas fall outside the 20-80 range where less than 1% of the norm group fall. Freedom to decide how to carry out their work projects was reported as “Very High” and participants reported a “High” degree to which they felt little pressure to meet someone else’s specifications in how they do their work. The mean score for this dimension was the highest of the eight dimensions that contribute to a creative work climate that produces creative outcomes.

Brophy (2004) describes the motivational challenge for the educational setting as a paradox. People work under certain organizational demands that result in extrinsic motivation and as often as possible, people should be given freedom and autonomy in the work place. Given that paradox, CSH teachers have a surprisingly high degree of freedom and the value for teacher freedom is introduced before the first day of teaching. All teachers new to the school attend Odyssey, a workshop designed to introduce lesson design principles and prepare teachers to successfully navigate in a work environment that might seem unfamiliar. District-wide administrators, school directors, and teachers from the school provide insight, expectations, and tools for accomplishing work in a school with the mission “to develop and support innovative public schools where all students develop the academic, workplace, and citizenship skills for postsecondary success.” Teachers are given steps and advice during the induction process for developing curriculum rather than following a curriculum blueprint: “In your journal brainstorm your project ideas. Use the following prompts to help you. What project interests do you have?

What are your passions? Could you have the students make or do something that coincided with these passions?” Jillian, the teacher who provided information for the Chapter 1 vignette, explained how much freedom and control teachers have in choosing work projects and serving on committees that solve building-wide problems, “It’s completely optional. I mean it varies teacher by teacher. We can be very involved or not involved at all, or show up for one and then decide you don’t want to show-up for any more. So yeah, it’s completely a choice.”

Teachers also have freedom to decide if and when they attend faculty meetings. Faculty meetings are scheduled to begin at 7:30 a.m. and, at each of the three meetings observed, teachers trickled in from 7:30 to 8:00 a.m. and teachers excused themselves during the meeting and went back to their classrooms to work privately at their desks.

Figure 8 (Appendix A) reveals four variables of freedom within Management Practices, resulting from this qualitative analysis. First, teachers reported considerable detail about not only positive but negative perceived Management Practices that allowed for freedom and autonomy. In fact, teachers offered only one account of when freedom and autonomy was perceived as negative.

Generally, teachers stated they not only had freedom for coming up with work project ideas, but they did not need to clear their ideas with the school director. One explanation for a lower survey score on feeling pressure to meet someone else’s specifications resulted from a colleague who had a personal relationship with one of the school’s owners and pressures teachers who s/he believed were not producing the quality or quantity of work that was vital to the school. Overall, teacher statements were positive. This freedom and autonomy is one of the climate conditions for the intrinsic motivation necessary for creativity.

Intrinsic motivation is often derived from personal, autonomous efforts rather than directed external influence from leaders (Hunter et al., 2011). Intrinsically motivated actions require no separate motivating consequences; the only necessary “reward” for them is the spontaneous interest and enjoyment. Teachers in innovative schools often exhibit curiosity, exploration, spontaneity, and interest in their work environment and having control over their work and task design or project selection. Research findings in this single case study demonstrate that a creative climate included management practices that allowed teachers freedom to decide what work to do.

Table 2.0

Sample of qualitative analysis of perceived “Management Practices – Freedom

Categories <i>positively</i> related to perceived Management Practices – Freedom: Interview Data	
<i>Stimulating: had a positive relationship with respondent rating of Management Practices – Freedom</i>	
I have the freedom to decide what project(s) I am going to do and how I am going to carry out my projects.	I don’t think I ever had administration ever remotely come close to saying, “Are you sure that’s a good idea?” Or, “Maybe you could try this. Are you getting your curriculum in?” Never. The project we are working on is fun for me because my partner and I are both focusing on history. He's focusing on more traditional art history whereas I'm looking at more modern art. This is something that I've been interested in and passionate about for a long time but I've never focused a project around it. I think that another big part is like our calendar... Do we want intersession to be 8 days or 10 days? We decide that. We being the teachers, rather than up top, say this is what you're doing. And so, that freedom allows some of those (creative) ideas to come up and grow because we’re not stuck to this calendar and that schedule...if we want to change it, we change it.
I feel little pressure to meet someone else's specifications in how I do my work	I always taught Siddhartha before I worked here and I love the line in it where Herman Hesse says to the Buddha “you know, you made a mistake. I can't reach Nirvana by following your path I can only reach Nirvana by following my path. Nobody can be a teacher you can only

Table 2 0 (con't)

	learn...I think there's only one way to do it and that's letting people figure out his or her own path.
In my daily work environment I feel a sense of control over my own work and my own ideas.	My role is to create interesting projects, follow my passion, and make these projects relevant and authentic to my students so that it's just not some silly assignment. Project's like that has real deliverables that will be used by the public of San Diego for the next 5-10 years.
Categories <i>positively</i> related to perceived Management Practices – Freedom: Archival Data	
In my daily work environment I feel a sense of control over my own work and my own ideas.	From Document # 1 Designing an Advanced Project For this course, you will design an 'advanced' project to use in your classroom. In this design process you will collaborate weekly with a colleague at your site or a community expert. Design Phase: STEP 1: Brainstorm your project ideas. <i>In your journal</i> brainstorm your project ideas. Use the following prompts to help you. 1) What project interests do you have? What are your passions? Could you have the students make or do something that coincided with these passions?
Categories <i>negatively</i> related to perceived Management Practices – Freedom: Interview Data	
<i>Inhibiting: had a negative relationship with respondent rating of</i> Management Practices – Freedom:	
I feel little pressure to meet someone else's specifications in how I do my work	So Jacob's the director and then you have small cadre of teachers who have been here almost from the beginning. So, there's formal and informal power at play. For Example: So there is somebody at the top, maybe it's Kenneth (an owner), it's not Jacob, but if there is a feeling like there isn't enough projects going on around here, Austin (a teacher) will come around and put pressure to do more; Austin's personal friends with Kenneth.

Challenging Work. Proposition: creative organizations need to develop a climate where teachers perceive they give their best efforts when involved in challenging and important work.

People performed better when their workday experiences included more positive emotions, stronger intrinsic motivation (passion for the work), and more favorable perceptions of their work, their team, their leaders, and their organization, and when the person felt a sense that they had challenging and important projects. Bandura (1977) supports the hypothesized relationship between perceived self-efficacy and behavioral changes in the perception of self-

efficacy as challenging and rewarding work. Amabile & Kramer (2007) confirm this; “If people perceive the work, and themselves, as having high value, their motivation will be high” p.81.

Figure 9 (Appendix A) reports CSH survey participants as having a range of tasks that were both important and challenging – two of the five items scored “Very High” when participants felt they were working on important projects that they perceived to be challenging. Two items scored “High” when the teachers perceived that the work they were doing was challenging and important, but, just as important, the work brought out the best in them. The mean score for this dimension was the third highest of the eight dimensions that contribute to a creative work climate that produces creative outcomes.

Teachers performed better when their workday experiences included more positive emotions, stronger intrinsic motivation (passion for the work), and more favorable perceptions of their work, their team, their leaders, and their organization, and when they felt a sense that they had challenging and important projects. One teacher commented, “I reference that project as a life-changing project” and another teacher said, “it was going to be this really public thing, it made us put all of our blood sweat and tears into it.” Teachers felt their work was important, for not only themselves, but also others outside the organization would see and comment on the projects so it was a “big deal,” as one teacher said. In addition, the school’s website displays projects that the CSH students and faculty published, including their work published in books, because “they believe that an important step in the learning process is presenting one’s work to an authentic audience. It is also how we hold ourselves accountable for the work that we do.”

Teachers at CHS felt that the work they did also enabled them to have free “flow” of ideas and total absorption in an activity which brought out the best in their own interest and creativity. When people experience flow, their activity is said to be autotelic, which means that

the purpose of the activity is the activity itself, and we often speak of flow as the prototype of intrinsically motivated activity. One teacher “really wanted to do this project, so I scanned the entire book.” S/he created a book in a PDF so each student would have a copy and also made a website. While s/he was on Christmas break, s/he “sat down with a pad and paper and I drew all the pictures and I was busily working along...I really wanted to get this done...But I really wanted it to be good because I loved the book and I love drawing it and it just took off.” This teacher took time away from his/her family during his/her vacation time so that s/he could produce a project that his/her students would be excited about, but more importantly, one which s/he felt was important and showed off the best in his/her own creativity and expertise.

Only one of the five items scored a “Mid-range,” and that had to do with the fact that the context of the work environment detailed how and why people might perceive whether their organization had an urgent need for their work group to perform successfully (Amabile & Kramer, 2007). Most business organizations are for profit, and they will die if their company cannot make a profit over and above their expenses. Thus, many need to move quickly and swiftly to invent new products or to keep on the cutting edge of their competitors in the market. Education, on the other hand, does not operate in the same fashion as corporate business. School organizations have time built into their calendar year for professional development, time to collaborate between grade level teams and between schools, so when there are problems to solve then the school organization can built in the time necessary to address the problem(s) at hand.

Csikszentmihalyi (1975) suggested that intrinsically motivated behavior requires optimal challenge. Too much challenge relative to a person's skills leads to anxiety and disengagement, whereas too little leads to boredom and alienation. The postulate of optimal challenge is fully consistent with SDT's specification of the competence need as a basis for intrinsic motivation

(Deci & Ryan, 1980), for it is success at optimally challenging tasks that allow people to feel a true sense of competence.

Amabile and Kramer (2007) affirmed in their study *The Big Deal Project* that people performed better when their workday experiences included more positive emotions, stronger intrinsic motivation (passion for the work), and more favorable perceptions of their work, their team, their leaders, and their organization, and when they felt a sense that they had challenging and important projects. When Amabile and Kramer (2007) compared people's best days with their worst, the most important differentiator was being able to make progress in their work. Positive emotion was tied to higher creativity, and negative emotion was tied to lower creativity. Across all 26 teams studied, people were over 50% more likely to have creative ideas on the days they reported the most positive moods than they were on other days. Over the past 30 years, Amabile and Kramer (2007), along with other researchers, have garnered a great deal of research evidence supporting what they refer to as the intrinsic motivation principle of creativity: "people are more creative when they are motivated primarily by the interest, enjoyment, satisfaction, and challenge of the work itself—not by external pressures or rewards" (p. 81). It is evident from research in this single case study that CSH had a climate where teachers perceived they gave their best efforts when involved in challenging and important work.

Table 3.0

Sample of qualitative analysis of perceived "Management Practices – Challenging Work"

Categories <i>positively</i> related to perceived Management Practices – Challenging Work: Interview Data	
<i>Stimulating: had a positive relationship with respondent rating of Management Practices – Challenging Work</i>	
I feel that I am working on Important Projects.	But what made me really put 150% effort in was that it was a three month long museum exhibit... which is a boat that's been converted into a museum and so the <i>publicness</i> of that and that the permanency of that,

Table 3.0 (cont'd)

	and that it wasn't just, hey, it's going up in the school in our classroom and mom and dad are going to come see it. But that it was going to be this really public thing, made us put all of our blood sweat and tears into it. I mean, we were here sometimes on Saturdays, having the kids come in for like, they wouldn't have met their deadline, so we'd all be here. It was great because we were friends that inspired, pushed and motivated each other. There was a lot of strong academic content in our project because we were just very excited. I reference that project as a life-changing project.
I feel challenged by the tasks and work I am currently doing.	I really wanted to do this project, so I scanned the entire book, Welcome to the Monkey House and created PDF's so each student would have a copy. I also made a website. During Christmas break I sat down with a pad and paper and I drew all the pictures and I was busily working along. I mean, we stayed home, so my kids would be in and out and I still played with them but I really wanted to get this done. And so the more I did and I took forever and one hour of my time is a week of a kid's time. I took 48 hours to make this. In addition, of course that's ridiculous because that's like 2 years of a kid's time and they only have two months to do it. However, I really wanted it to be good because I love the book and I love drawing it and it just took off.
The tasks in my work call out the best in me	It would be hard for me to think of something that I didn't give my best. I feel like because we are so fortunate to have these opportunities... I think we're allowed to do that here because of the freedom and because we were allowed to do these crazy things... you can teach something that you're passionate because it your passion or something you really wanted. You've got that emotional connection so you can do your best – versus my first teaching job was at the school in San Diego and I would get a month calendar and it said: Monday adding fractions – Tuesday subtracting fractions. There was no connection to it because there was no creativity...I didn't have any ownership on it... In this case, because it's your own, it's almost like your baby right? You create this thing you want it to do well – you're doing it for a reason so you have that investment to make it your best.
The organization has an urgent need for successful completion of the work I am now doing.	The Vaudeville project went together a little quicker and in a frenzy. We didn't have a lot of time to think it through. We didn't start working on it until fall and then implemented in the fall. The motivation came from a passion for giving it a shot.

Table 3 0 (cont'd)

I'm feeling more challenged this semester one because the projects is new and we developed it within the past couple months.

Categories <i>positively</i> related to perceived Management Practices – Challenging Work: Archival Data	
I feel that	School Website _ Projects: CSH students and faculty publish their work on websites and in books, because we believe that an important step in the learning process is presenting one's work to an authentic audience. It is also how we hold ourselves accountable for the work that we do at Creation Station High accountability effort by purchasing books.
I am working on Important Projects.	

Managerial Encouragement. Proposition: The school leader who is task oriented, directs with clarity, values participation and interaction, can positively affect a climate that encourages creativity.

The boss serves as a good work model, sets goals appropriately, supports the work group, values individual contributions, and shows confidence in the work group (Amabile et al., 1996). The boss is defined in the KEYS® survey as “The person who manages your major project(s); the person to whom you report for most of your work”(Amabile, Burnside,, & Gryskiewicz, 1995, p. 66). In this current research, the boss is referred to as director. A school Director is nomenclature for charter schools in California and is similar to the role of principal in a public, non-charter school.

Figure 10 (Appendix A) reports that participants responded to 11 survey items in the Managerial Encouragement portion of the survey and results show a range in the degree to which the participants perceived the director behavior as encouraging. Respondents report one item as “Very High,” four items as “High,” and six items as “Mid-range,” two of which hover just above the borderline between “Low” and “Mid-range.” The mean score for this dimension was the fifth highest of the eight dimensions that contribute to a creative work climate that produces creative outcomes.

Within the 11 survey items, there are a variety of behaviors represented. This suggests either that managerial encouragement could be accomplished in many ways by school leaders or perceived support in this single case study was unique to the following three kinds of tasks: first, that there existed relationship-oriented behaviors, such as being open to new ideas, valuing teachers contributions, and showing confidence in others; second, that leadership tasks involved directive-oriented behaviors where the Director provided goals and expectations; and, third, mechanisms were available for communicating goals and expectations, such as providing constructive feedback and support to work groups. Teacher respondents perceived the highest degree of leader encouragement with relationship-oriented behaviors, lowest degrees of perceived leader encouragement with directive-oriented behaviors, and perceived leader behaviors as mid-range when the director communicated with work groups, possibly indicating that directive-oriented behaviors occurred less frequently as a mechanism for directing with clarity by communicating goals and expectations to individuals. Another alternative explanation is that different employees had a different kind of relationship with the Director. One other alternative explanation is directive-oriented behaviors moderated perceived encouragement. If a boss is heavy-handed, any communication could moderate either constructive feedback or praise as encouraging.

Jacob was the Director who came to his position through the ranks, first as a teacher at CSH, and then assumed the school Director position four years prior to this study. Supervising employees who were once colleagues might provide opportunities such as knowing the internal social landscape, yet, at the same time, provide challenges when now being “boss.” One explanation for teachers perceiving a high degree of freedom and autonomy might be found in

the leader's avoidance of guiding and directing. Teacher accounts that report types of leader behaviors when providing freedom were virtually nonexistent.

Table 4.0 reveals director behaviors targeted toward Managerial Encouragement within Management Practices, resulting from this qualitative analysis. Supportive leader behavior was missing, as evidenced by the fact that teachers reported that accountability came not from the Director or other top management, but from the teachers themselves. Teachers held themselves accountable to do a good job, and they held each other's' opinions about the quality of their work to a higher standard than did the school Director (Table 4.0, row 3). This was supported by observations made by the researcher during scheduled staff meetings. Many teachers arrived late to each of three staff meetings observed. Some trickled in minutes late, others came in near the end of the meeting, while others left throughout the meeting without being excused by the Director (Table 4.0, row 19).

Teachers reported considerable detail about the relationship-oriented behavior by the Director. One of the teachers brought to Jacob, the Director, the idea of how the teachers might best reach out to the "Latino population" since the school was trying to create a student body that best was reflective of the cultural diversity of their community and city. After this suggestion, Jacob brought the idea to the rest of the staff and asked them to generate creative ideas as to how they could develop stronger relationships with the Latino parents and students within their community. Teachers surveyed the community and students and suggested some activities that were incorporated the following semester to entice a more diverse Latino population to their school. Jacob modeled effective group process designed to enhance creativity when he elicited teachers to help in making decisions about the school, one teacher said "teachers make more decisions about the school than students get to make about they're projects" (Table 4.0, row 7)

Teachers reported considerable detail about not only positive but negative perceived Managerial Encouragement. Teachers reported different experiences with the Director during times when goals and expectations could have been reinforced through critical feedback. One teacher reported that the Director did provide him/her with cooperation and gave him/her support and affirmation of their work, but he does not sit down with the teachers to give them critical feedback in how and what to do to improve their teaching pedagogical or ideas for student projects (Table 4.0, row 10). Some teachers perceived the Director's feedback was collaborative and relationship-oriented. However, most of the comments were negative. Many of the teachers were not sure exactly where they stood, whether or not they were doing a good job or not since the Director never called them into his office to offer suggestions or ideas about their teaching. One teacher commented, "I assume I am doing all right... no news is good news" (Table 4.0, row 22). This data also suggests that mechanisms typically used for reinforcing goals and expectations by the Director were missing, and this was perceived as non-encouraging to the teaching staff.

One observation took place during an unusual event concerning the death of a CSH teacher. The death of a schoolteacher is typically outside the study of creative work climates, but observations made might shed further light on how management practices encouraged or discouraged employee motivation, especially when employees perceived an absence of necessary leader support. The researcher was approached by one teacher who was quite emotionally upset as s/he perceived there was a lack of direction from the Director, to the teachers, in how best to follow-up after hearing about the death of his/her colleague (Table 4.0, row 19). Although many of the teachers knew this teacher was out ill with cancer, many were emotionally disturbed and the Director provided them with no support. The following days, though, it was noted that the

dean of students, not the Director, was observed entering classrooms checking on teachers' well being and offering support.

In this single case study, the Director was relatively new to school leadership and came to the position of school Director as a teacher who was promoted from within. Effective goals and clear expectations were either missing or negatively perceived by teachers. Well thought-out plans, clear communication, good interpersonal skills, and showing value to individuals who contributed to project(s) were perceived as positive when the Director engaged in relationship-oriented behavior. Teachers reported their school leader was a good work model and was open to new ideas, but support in the form of constructive feedback to work groups within the organization was lacking.

Table 4.0

Sample of qualitative analysis of perceived "Management Practices – Managerial Encouragement"

Categories <i>positively</i> related to perceived Management Practices – Managerial Encouragement: Interview Data	
<i>Stimulating: had a positive relationship with respondent rating of Management Practices – Managerial Encouragement</i>	
My boss's expectations for my project(s) are clear.	The expectation is to not only be an awesome teacher and teach the content but it's to take risks and to do projects that are interesting to students and relevant. ...The expectations are to expose students to things they wouldn't normally be exposed to and do this in a way that engages the students.
My boss has good interpersonal skills.	Jacob (boss) does a kind of Informal - formal <i>check-in</i> each springtime, just like a very easy conversation; you know, getting kudos. That's always good.
My boss values individual contributions to project(s).	Last year, I did a ton of extra work with the seniors (students) in organizing a bunch of stuff and blah, blah, blah, and he gave me, like a thank you for being, you know senior-teacher-extraordinaire kind of thing. It was just cool. I worked my buns off with extra work and it was good to be recognized. It was just the two of us, like in the hallway maybe in his office.

Table 4 (cont'd)

serves as a good work model.	The person in the position of Director and what the position is really effective here. He facilitates a teacher centric decision-making body, which I think is the model for practice in the classroom, which is to facilitate a student centric atmosphere. Although I imagine teachers make more decisions about the school than students get to make about they're projects. It's a model of behavior organizational behavior is what the thing is that I'm impressed by. It's about having the organization that really practices what they preach. I'm told to give my students freedom to manage their time; my boss does this to me. I am also being told to be innovative take risks and I'm not judged if I fail. This organization truly practices what they preach. We want students to be engaged and feel like they have a say in their education. We have faculty meetings where the teachers decide how the school is run.
is open to new ideas.	When I first came here to the school we were talking about how Latino population was increasing and the school was trying for the population of the school to reflect the overall population of the city. I talked to Jacob (boss) and he thought it was a good idea. Then, I talked to the teachers and to the parents and they thought it was a good idea to start having meetings.
supports my work group within the organization.	You know, I have kids and as a Latino I feel committed to the Latino population. Originally, White-Anglo and Asian kids dominated the school and we needed to open a discussion about that. I listen to Jacob (boss) and he is completely, like totally, supportive of this type of work and efforts.
gives constructive feedback about my work.	It's more than like feedback I guess, it's telling me this is great, let's follow through, let's do it, you have my support, I'm going to be here at the meeting...It's more than feedback, its cooperation and support and re-affirmation. Jacob (boss) doesn't sit with me and say this is good this is bad, do this, don't do this, you know. It's more like all right how can I help you. He asked me what are we doing next and I tell him and he gives me great ideas too. We work together. Feedback is too close to and evaluation; what is good what is not.

Categories *positively* related to perceived Management Practices – Managerial Encouragement:

Observation Data

values individual contributions to project(s)	Staff Meeting #1 The Director explains the purpose of the meeting is to discuss the collegial coaching project. He asks for announcements. Three teachers announce: 1) Peak Theory Project Exhibition, 2) Science

Table 4 (cont'd)

shows confidence in our work group	Fair is today and, 3) Blood Drive is today. One of the staff members provides results from a staff survey regarding the Collegial Coaching project. Staff are generally supportive. Staff meeting #2 The Director is sitting in with each group and participating People seem comfortable and I can't see any behavior change when Brett sits in or leaves...
serves as a good work model	Staff Meeting #2 Notes: the purpose of this meeting was there was a school wide problem so that the school could meet the needs of the Hispanic population. Bret was modeling how to facilitate problem finding (how can we look at this issue and frame it in different ways)
Categories <i>negatively</i> related to perceived Management Practices – Managerial Encouragement: Interview Data	
<i>Inhibiting: had a negative relationship with respondent rating of Management Practices – Managerial Encouragement</i>	
My boss's expectations	I feel like accountability is the one thing the school needs that other schools have...I feel like we lose accountability and because we don't have any formal structured consequences or expectations in place some people get away with coming to school unprepared.
for my project(s) are clear	We have complete choice over our projects so that if I want to do a project, I do the project. The only exception to that would be, if I had a teaching team, I would need to get my partners on board. So that's not really coming from Director place at all but from the team.
My boss clearly sets overall goals for me.	It (motivation to come up with appropriate project ideas) comes from not wanting to get fired. I would say is one thing.
communicates well with our work group.	There's not a whole lot of recognition. I think it's like Alfie Kohn has this idea you that you don't praise kids too much. I haven't read his book but maybe that's where they get it. I think you can overdo that. You can praise too much but I don't think they praise enough. I don't think you get enough recognition certainly not in your pay.
values individual contributions to project(s).	My intercession (a two-week time period for special projects) for example, a lot of people already knew what we were doing... I put together a four-minute montage video with the students started with and what they completed. I sent it out to all the staff and I got an e-mail back from a third of the staff with lots of positive feedback. Some posted it on Facebook and the artists who had made the (original) pieces the students

Table 4 (cont'd)

gives constructive feedback about my work.	were designing recognized their piece also gave positive feedback. That definitely felt good and let me know I was on the right track. But on the other hand I think with some things you're so free to do things and there is no right and wrong. Then from management you don't get, oh that was wrong, you shouldn't do that, in my experience there hasn't been any, Oh that's amazing job, I like what you did. I don't know if I am (doing a good job) but I assume I am doing all right. I think it kind of as – a no news is good news – system. But, I haven't been on the bad news aspect of it. I believe if you are not, Austin will come up to you and give you a semi-threatening pep talk, but that's just speculation. I get recognition from parents and kids, less so from Jacob (boss). They generally have a punish-by-rewards-mentality here. And again, no news is good news.

Categories *negatively* related to perceived Management Practices – Managerial Encouragement:

Observation

My boss

gives constructive feedback about my work.	Staff Meeting#1: This site is dedicated to supporting educators in developing and improving Collegial Coaching at their schools. Collegial Coaching is a professional development method where colleagues are paired together to help one another grow and improve with feedback and support. The method is aimed at increasing collegiality, improving instructional delivery and ultimately having significant positive impacts on student learning and achievement. "Critical Friends" (or collegial coach partners) observe consistently in one another's classes and provide non-evaluative feedback on their instruction in general and specifically around a pre-determined focus area. This website was developed as a part of our School Leadership Research Project in the CSH Graduate School of Education. We hope it is useful to you in your endeavors! The problem is this does not occur although it one teacher has approached this idea to the staff, no one participates in "Critical Friends" and they are not held accountable in doing so since it is voluntary.
communicates well with our work group	Staff meeting #3- This was an emergency staff meeting due to the death of a fellow teacher. An email was communicated at night for emergency staff meeting. Because staff meetings start at 7:30 a.m. people began to filter in at 7:30 (and like the other previous meetings, some came on time (40%), some came in at 8:00 am and 90% were there at 8:00am, and some left (3 people left). Hypothetical reason why they left could be because they were disinterested in how the Director was conducting the meeting.

Table 4 (cont'd)

	Staff Meeting #1: From their Leadership Research Project it says that “Collegial Coaching is non-evaluative in nature, but we believed it must still be focused and intentional in helping teachers to reflect upon and improve their own teaching practices. We felt that in order to make Collegial Coaching more effective across CSH schools and for the majority of teachers, school leaders would need to implement a process including clear structures and engage teachers in developing a common language to encourage such reflection and focus. As a result, staff would be invested in being effective collegial coaches to one another and the result would be improved teaching practices and, ultimately, greater student learning. Our essential question was: How can we develop structures and a common language to support and increase the efficacy of collegial coaching. “The Director does not facilitate or help in setting these goals with the teacher but they are expected to do so with on another-if they want to since it is on a voluntary basis.
supports my work group within the organization	Staff meeting #3-When the researcher went out into the hall, 15 minutes later a staff member approached the researcher and was angry, She complained about the Director’s lack of motivation and unwillingness to take charge of this event, and she reminded the researcher that this was not a unexpected event since this person was out ill and many people knew he had terminal cancer and that the Director should have provided support, guidance, help, structure, and he didn’t. The researcher asked what this teacher would like from the him; send flowers to the school because she doubted that the administration would...and as it turned out the administration did not.
supports my work group within the organization	Staff meeting#3 Another observation, while the researcher was in the rooms following this meeting, the dean of students made it his job to check on people to see how they are doing and he took charge between the family and the school and communicated with people on different activities, services etc. from the family to the staff. Never did the researcher see the Director speak to any staff member on this subject of the death of the faculty.

Work Group Supports. Proposition: Teachers who commit to a team project feel support when trust is high and teachers from a several areas of domain specific knowledge consistently and openly provide and receive constructive feedback.

Work Group Supports is defined as a diversely skilled work group in which people communicate well, are open to new ideas, constructively challenge each other's work, trust and help each other, and feel committed to the work they are doing (Amabile et al., 1996).

Figure 11 (Appendix A) reports CSH survey participants as having a generally high degree of work group support. Results from the eight survey items show the degrees to which respondents perceived work group support as contributing to a positive creative climate were such that three items were rated as “Very High,” four items were rated as “High,” and one item was rated as “Mid-range,” but close to the borderline between “Mid-range” and “High.” The mean score for this dimension was the second highest of the eight dimensions that contribute to a creative work climate that produces creative outcomes.

Creative work at CSH was usually accomplished by two teachers who, for at least one school semester, prepared authentic learning activities that engaged student interest as they struggled with complex questions and carefully designed tasks in a project-based learning environment. Teachers were provided freedom to choose their partner at an annual springtime meeting where teachers pitched student project ideas and picked partners who had similar interests. Because teachers had freedom to not only choose what they would teach, but with whom they would collaborate, then the intrinsic motivation necessary for creativity was more likely occur.

Table 5.0 reveals eight characteristics within Work Group Supports resulting from a qualitative analysis. Teachers reported considerable detail about positive perceptions of working together as a team. Only a minimal number of accounts were either reported or observed when group support was perceived as negative. Reports of perceived negative behaviors within the school, across different work groups, are described in another section in this chapter.

Teachers generally expressed that they liked their team members and many felt extremely lucky to have such exceptionally bright and cooperative team partners to work with. One teacher remarked how s/he felt their team members were “awesome” and how great they were since they inspired, pushed and motivated each another. As another example, teachers often spoke about the value and importance placed on the relationship with their work partner along with student projects they designed that were characterized as highly creative and challenging for students. Teachers who perceived they were on a good team spent considerable time away from the school to plan their work projects, especially during non-work hours. In an interview, one teacher explained how teachers came up with some of their creative ideas. She said that they would meet often after work at one of the local pizza parlors where it was relatively quiet and they would bring up various ideas to one another. These meetings were open to all teachers, and not only were they able to share their ideas, but they would also receive critical feedback from one another on their ideas that was perceived as supportive and safe.

Trust between work partners was reported as high. Teachers provided several accounts of challenging each other’s ideas in formal and informal settings, as noted above. One teacher noted that it was only through working at CSH that she began to depend on critical feedback and could not imagine how to put all the pieces together in creating a spectacular and interesting student project without the feedback and support from her fellow teachers (Table 5.0, line 23). Another teacher reported positive experiences with the *critical friends* protocols, which follow formal processes to ensure valuable and safe feedback.

Creative ideas flowed freely at CSH. When Christopher pitched an idea to the entire staff that had potential to change departmental boundaries and work flow for students and teachers, he suggested that students graduate not on the courses they take but on the kinds of projects they

complete, and, although this could have been taken detrimentally, Christopher felt safe in knowing that he could pitch an idea without being called “stupid” or feeling like his ideas were of no value (Table 5.0, row 6).

Teachers typically choose work partners who had expertise in other curriculum content areas, such as physical science with humanities or biology with multimedia, to design thematic based projects. Using themes that cover two or more curriculum content areas naturally builds teams with diverse skills. The vignette in Chapter I was based on an interview with a CSH teacher as s/he worked with four team members from four curriculum areas and collaborated on a project that centered on an old sailing ship. Two teachers from different curriculum areas designed a student project that incorporated a river that runs through the city in which the school resides (Table 5.0, row 7). One teacher reported that they were studying the river through the eyes of the birds that migrated there and what and how the birds interacted with the river. The teachers combined their expertise in their content areas to incorporate them into this project, such as science, English language arts (writing), and multimedia. Many teachers reported they were open to new ideas. Teachers designed a new process to save money by eliminating a teaching position that allowed all the 11th grade teachers to stop teaching in their classrooms for several weeks to supervise students participating in a student-work program to allow the teachers more hands on with the students involved (Table 5.0, row 9).

However, not all work partners have positive experiences. One teacher felt like his/her partner was constantly “blowing him/her off” when s/he made suggestions (Table 5.0, row 19). S/he reported that suggestions should be offered sooner, not later, in the implementation of the student-learning project. In addition, this same teacher was not interested in working with a partner during his/her first year. Other negative comments came when a teacher reported that

s/he preferred to do his/her own thing since s/he felt that s/he could stand by it and felt it was good, therefore s/he did not have to rely on a partner (Table 5.0, row 20). Another example of negative comment(s) came during an observation by the researcher during a staff meeting when the Director supported a few teachers who presented on a survey about being open to collegial coaching (Table 5.0, row 22). Those teachers interested in this collegial coaching presented data from a survey investigating teacher openness to collegial coaching. The results were presented in the form of bar graphs shown in a PowerPoint that strongly indicated CSH teachers were not interested. Teachers listened politely but never fully participated in discussing collegial coaching with their work partner during the staff meeting.

A collective creative climate involves both member and unit satisfaction. A team climate for innovation predicted overall team innovativeness, novelty of innovations, and number of innovations (Anderson & West, 1998) within the group or team when there was a climate of trust, openness to new ideas, a commitment to the goal(s) and vision of the organization, diverse skills and ideas within the group, and a feeling of safety when providing constructive feedback and evaluation. The central focus on what teams have to do—their task—was the key factor that distinguished a social-psychological perspective on the study of teams in which the task was merely a means to prompt interpersonal interaction (Kozlowski & Ilgen, 2006). CSH creative team climate increased when the team members had the necessary knowledge, skills, abilities, or resources to resolve the team task(s). CSH teacher teams that primarily strove toward accomplishing goals made school-wide decisions and created and adapted unique solutions to resolve task-driven problems (i.e., Ender Session, 11th grade work experience). The data results show CSH has a climate where creativity and innovation occur because of many effective teams/partners committed to their team project that felt supported. In addition, trust was high,

and teachers from several areas of domain specific knowledge consistently and openly provided and received team member constructive feedback. Due to the fact that CSH teachers selected their own work partner(s) from different teaching domains, this pairing naturally created a group with diversity in terms of culture and expertise. High levels of commitment to their team project(s) were reported, teachers perceived high levels of trust with their work partner, and data suggests the existence of an open information flow. However, teachers were wedded to their freedom and did not show high levels of support for new ideas.

Table 5.0

Sample of qualitative analysis of perceived “Management Practices – Work Group Supports”

Categories <i>positively</i> related to perceived Management Practices – Work Group Supports: Interview Data	
<i>Stimulating: had a positive relationship with respondent rating of Management Practices – Work Group Supports</i>	
My co-workers and I make a good team	(When talking about coming up with creative ideas) It usually doesn't happen in this space or on this campus. It usually happens, we'll get together next door at Sammy's pizza. We have a booth that we normally go to, it's relatively quiet. Usually alcohol is involved – I have an idea – she has an idea – we talk about it – it starts very disparate – different ideas coming together – we're both into the titles. So, we come up with the title for a project and coming up with the title for the project helps us focus on the content for the project.
Within my work group there is trust among people I work with most closely	When I was little I hated showing my work to anybody. I hated getting feedback. However, going to grad. school made me more open. Then coming here, it feels risky in the beginning but it's so much a part of what we do that now it feels like part of the process. I can't imagine putting a project together that has so many pieces and not getting feedback from it. I wouldn't feel like it was finished or accurate. I really depend on it at this point. It's not an emotional risk to get feedback. I just haven't felt that way.
we challenge each other's	There's a classic protocol that we do here at CSH where we present a

Table 5 (cont'd)

ideas in a constructive way	project and there's a period of clarifying and probing questions. As the person who presented you step out of the circle and everybody else discusses your project while you take notes. It removes you from being defensive. Often lots of valuable feedback come out through this, whether it's contacts or taking the project in another direction. Most of the suggestions are from experience.
there is free and open communication	We were just throwing ideas out and Christopher proposed this one... (he) proposed an idea to throw away grade levels entirely and just do projects that the student would pick from a pool of projects that would provide them with the credits they need (for graduation). For example if they received enough humanities credit because they already took all the projects for humanities... (projects) are blacked out (for future coursework) and they have to choose another subject.
there is a good blend of skills	This semester's project in which we are studying the San Diego River through the eyes of birds and interactions the birds have with the river. The science side is a lot of biology, chemistry and physical parameters in order to evaluate the health of the river. We developed this together but it was mainly Bill's idea because he just really loves the river and I have history from Berkeley in my graduate school studying river health. We come together and I attack it from the science side. He attacks it from his science background and also brings in his multimedia aspect. We really work well together because we overlap. I'm a science teacher with interesting graphic design and he is a multimedia teacher who has a background in science.
People in my work group are willing to help each other	We encourage our students to brainstorm individually then do a pair-share, talk to your neighbor about it and then bring it to the whole class...That same process happens teacher to teacher. I'm not a teacher by myself on my little island here...I wouldn't have this awesome relationship that I have with Bill or I couldn't walk down the hall and be excited about something and have someone come back with the same excitement and turn it into a brainstorming session. We are put in teams in which we have a mutual relationship and since were working on the same project that we both have interest, we're constantly brainstorming other cool things. I think 2 heads are better than one and it's not just twice as good more like 5 times better.
are open to new ideas	Two years ago we changed how we did 11th grade internships (student work-experience). All students in the 11th grade go on an academic internship in the community...Originally, 7 years ago, we provided transportations and students went out for one semester on Tuesday and

Table 5 (cont'd)

	Thursday afternoons to their place of work. We had an internship coordinator who worked on placing students in each of their locations. The 11th grade teachers prepared students for internships but there was a big disconnect between the content that we were doing in the classes and internship... For a variety of reasons we decided to phase out the internship coordinator position on our campuses. Then have the 11th grade teachers and advisors work with the students on their team... and to really dedicate a significant amount of time making those connections with students in finding out their interest. Then we shifted from 2 days per week, half-days to 4 weeks every day, all day.
are committed to our work	I certainly want to do right by him (teaching partner). On a personal level, well, it's like its pride in my work. There's that emphasis. In terms of collaboration, I think when somebody's really giving, when there is real reciprocity, I think for the sake of collaboration, that's when I actually want to do it. You know when I feel like I'm giving and getting something back, which I felt like it was with that (project). You have all these teachers around you who do awesome things and they run a robotics program or they create thick beautiful books or they do these crazy cool projects. There's so many great things going on or maybe you're a teacher who has this great relationship with students and is able to get good work from them. With all this greatness around you whether it's greatness in curriculum or greatness in relationship with students you don't want to be a broken wheel.
Categories <i>positively</i> related to perceived Management Practices – Work Group Supports: Archival Data	
http://collegialcoaching.weebly.com/data-collection.html	
Categories <i>positively</i> related to perceived Management Practices – Work Group Supports: Observation	
are willing to help each other	Staff Meeting #1 Working with a small group of teachers at two different CSH campuses (CSHNC and CSMMA), we attempted to define what good teaching practices looked like, sounded like and felt like in the classrooms of these teachers. The teachers pushed us to establish a supportive process, but not to make the process so prescriptive that it felt inauthentic. With their help, we collected data on feelings and perceptions of the collegial coaching process at CSMMA and CSHNC, developed tools to help teachers brainstorm about their own practice and identify areas of strength and areas of need, developed a three step observation cycle that included individual observations, co-observations and peer observations, and developed protocols that assisted in the debrief of observations in a way that was meaningful and not overly prescriptive. We shot video of each one of

Table 5 (cont'd)

	these steps and hope Directors will be able to use this video in the future to support collegial coaching at their school
open to new ideas	Staff Meeting #2-There was a discussion on having future Latino parent nights. The results were shared with staff. Discussion was how teachers will share thoughts with parents. Some questions the staff asked: 1. What are we doing well to affirm the cultural identity of our Latino population? What could we do better? 2. What instructional strategies are we using which address the needs of Latino students and English Language learners in our classrooms? What instructional strategies me we consider? 3. What steps could we take now, in the near future and long term to address the above? Please identify a note taker! This feels like a normal activity not a lot of direction or monitoring Brainstorming, sharing ideas That's brilliant!" Announcements would be Great!
free and open communication within my work group	The data below is from a survey we used with all teachers from HTHNC to help us capture attitudes towards collegial coaching before we began our process. The data also gave us information about perceived challenges that we should work to overcome. We used the data from the survey to guide us in developing our plans for a more effective process.
Categories <i>negatively</i> related to perceived Management Practices – Work Group Supports: Interview Data	
<i>Inhibiting: had a negative relationship with respondent rating of Management Practices – Work Group Supports</i>	
People in my work group are open to new ideals	When we were doing the family history book the first time, Derek and I had a meeting and he felt like I was blowing him off when he asked about certain aspects of it...He would come when I was assembling the book and be like, Oh we should add this, and I'm like, It's kind of too late; like, this is what it is and we should have discussed this sooner. He felt like I was blowing him off, which frankly I kind of was. So it was a communication aspect.
are committed to our work	One reason (not working well in a group) is if other people aren't as excited about it as you are...Some of it is communication issues, where it makes sense to you but you can't communicate that to your partner

Table 5 (cont'd)

	in a way that excites him. I think there is a certain sense of, some of its just independence. My first year I didn't feel like doing much collaboration because frankly, I'm more anal than my former teaching partners was and I wasn't about to start off at this school with those vagaries. So, I preferred to do my own thing more because I at least felt better standing by it.
Categories <i>negatively</i> related to perceived Management Practices – Work Group Supports:	
Observation	
are open to new ideas	Staff Meeting #1: After the presentation, the Director supported a teacher by providing teachers with a handout on Collegial Coaching and they are asked to reflect on the following questions... The same staff member who provided the results from the teacher survey stood up and explained that since this project is not part of the evaluation, he hopes teachers will share their reflections with him. However, if teachers are not interested, there is no formal expectation. Teachers begin to talk to each other and some meet with their collegial coaching partner.

Research Question #1 asked how and to what degree do school principal management practices impact a work environment where teachers perceive they have a sense of control over their work, given challenging goals and important projects, where the principal encourages behavior of the individual and a diversely skilled work group that communicates, and is committed to generating creative ideas?

KEYS® Survey results reported the degree to which respondents perceive management practices as encouraging their creativity was Mid-range and higher when compared to other creative organizations that comprised the norm group. Of the 28 items measured in Management Practices, approximately 32% were rated “Very High,” approximately 39% were rated “High,” and 29% were rate “Mid-range.”

Results from the qualitative analysis strand in this single case study showed how and why management practices were perceived as encouraging. Teachers reported that management gave large amounts of freedom and autonomy to teachers to decide what work to do. It was evident

that CSH had a climate where teachers perceived they gave their best efforts when involved in challenging and important work. In this single case study, the Director was relatively new to school leadership and came to the position of school Director as a teacher who was promoted from within. Effective goals and clear expectations were either missing or negatively perceived by teachers. Well thought-out plans, clear communication, good interpersonal skills, and showing value to individuals who contributed to project(s) were perceived as positive when the Director engaged in relationship-oriented behavior. Teachers reported their school leader was a good work model and was open to new ideas, but support in the form of constructive feedback to work groups within the organization was lacking. Management provided work group support and CSH teachers selected their own work partner from different teaching domain(s), which naturally created a culturally and content domain diverse group. High levels of commitment to a team's project(s) were reported and teachers perceived high levels of trust with their work partner. In addition, data suggested an open information flow existed. However, because teachers were wedded to their freedom, there were not high levels of support for new ideas from others.

RQ#2: Organizational Motivation

How and to what degree did organizational motivation stimulate and/or impede creativity at CSH. First, how and to what degree does organizational encouragement motivate teacher and group creativity, and second, how and to what degree does a lack of organizational impediments motivate teacher and group creativity?

Organizational Encouragement. Proposition: Creativity is enhanced in school organizations where risk taking is encouraged, supported, and where there is an organic organizational design to encompass open information flow to solve school-wide problems. In

addition, a culture exists where teachers receive recognition and rewards for creative efforts, and they are fairly judged and evaluated.

Organizational Encouragement is an organizational culture that encourages creativity through the fair, constructive judgment of ideas, rewards and recognition for creative work, mechanisms for developing new ideas, an active flow of ideas, and a shared vision (Amabile et al., 1996).

CSH survey participants' perceptions regarding the effect of tasks and behaviors by top management and the organization on their creativity varied widely. Figure 12 (Appendix A) reports results from the fifteen survey items show the degrees to which respondents perceived organizational encouragement: two items were rated "Very High," five items were rated "High," and eight items were rated "Mid-range," with three close to the borderline between "Mid-range" and "Low." The mean score for this dimension was the fourth highest of the eight dimensions that contribute to a creative work climate that produces creative outcomes.

Table 6.0 presents a summary resulting from this qualitative analysis of the varieties of behaviors and tasks that fell into each category as well as reveals three central observations in which top management and the organization encouraged creativity: first, how top management and the organization *encouraged ideas*; second, how top management and the organization *judged*; and, third, how top management and the organization defined *shared vision*. The highest rated items had to do with how top management and the organization *encouraged ideas*. How top management and the organization *judged* resulted in six survey items, which were rated slightly lower. How top management and the organization defined *shared vision* was reported by respondents as rated lowest in the set of survey items for this dimension.

The category regarding how top management and the organization *encouraged ideas* consisted of how people were encouraged to solve problems, how new ideas were encouraged, how people were encouraged to take risks, how management expected people would do creative work, how people could express unusual ideas without fear of being called stupid, how there was a lively and active flow of ideas, and how the organization managed good mechanisms for encouraging and developing ideas. The survey results scored “Very High” where people were not only encouraged to solve problems, but where teachers perceived encouragement for new ideas as well. CSH teachers perceived that they, along with school administrators, increasingly were encouraged to generate creative ideas as they solved problems to bring their student’s well on their way into the 21st Century. One teacher shared that, if other schools allowed for the same freedom to come up with new ideas, then educators would see more schools generating the blossoming of ideas, more teachers would be eager to create exciting lessons, and more teachers would pursue what they wanted to do and what they believed would work (Table 6.0, row 3). S/he went on to say teachers were encouraged to bring forth these new ideas that could spark or push an idea in a new direction, so everyone would benefit and could learn and explore, which was critical as well in the classroom.

Eckvall (1996) suggests that, when there is a strong level of trust, employees might dare to put forward their ideas and opinions without fear of reprisal and ridicule in case of failure. One teacher felt comfortable working with another teacher on a project of books s/he referred to as the “Monkey House” project (Table 6.0, row 4). This project interwove literature with his/her teaching domain for developing a graphic novel, and students needed to draw an image, which s/he explained, “was worth a 1000 words.” S/he and the other teachers had a sense of trust that top management and the organization would allow them to take risks, to incorporate as many

diverse creative ideas into a student project, to even possibly fail, but people were encouraged to not only express their ideas, but to bring them into fruition. This sense of trust is further exemplified by the fact that one teacher had a “crazy” idea to build 40 wooden chairs; he had the full support of Kenneth (one owner) of CSH and s/he invested \$4,000 of his/her own money, bought a wood steamer to bend the wood and a turkey fryer (Table 6.0, row 5). S/he explained how there were flames, exploding wood, saw dust all over the classroom, and, although it caused him/her to spend a considerable amount of his/her own money and s/he worked day and night on the idea with his/her partner(s), s/he said that it ended up being “one of the gutsiest projects I’ve ever done.” So, although the risk of failure was high, his/her students published a book on the project and for him/her, it ended up being a fantastic project.

Creative organizations have good mechanisms in place that encourage and develop creative ideas in their teams and/or teachers. However, reports came from some CSH teachers about top management not being intentional in developing a work climate that promoted a sense of harmony and work environment stability. Some of the teachers perceived that the work climate did not always encourage staff to engage in creativity, and that the organization was, at times, an obstacle for creativity, as one teacher stated that s/he felt that they were in a big hierarchal organization even when the school promoted the opposite view. Teachers expressed the need for the organization to communicate a clearer vision and goals, that a few senior teachers wielded too much “power” and influence over the school and other teachers (Table 6.0, row 28). One teacher reported that senior teachers who have symbolic power are the ones who have the vision for the school and have these ideas for the school’s design principles, which were the student-based learning projects. If any other teacher conflicted with the vision of these few

senior teachers, then the likelihood of that teacher remaining hired at CSH was slim to nonexistent.

The second central observation was how top management and the organization *judged* CSH teachers. Survey items included how teachers were recognized for their creative work; how teachers perceived top management as being enthusiastic about their project(s); how teacher ideas were judged fairly and their performance evaluation was fair; how teachers were rewarded for their creative work; and how failure was acceptable if teachers showed good effort on their project(s). The only item rated “High” was “People were recognized for their creative work.” This was largely due to recognition that came from peers, students and parents during and after student exhibitions. There was little recognition by the top management except in a few cases where a teacher said that the Director gave her/him a little “nod” or asked if s/he wanted to be featured on “Unboxed,” their public message from the school to the home. One teacher reported that there were small ways in which everyone could gain recognition and that was through the exhibition of student projects (Table 6.0, row 10). Only through these student exhibitions did other people, including the other teachers, parents, and the community, provide teachers with immediate feedback. When teachers have an exhibition, people know about it, come to it see it, hear it, and feel it.

The remaining five of six “Judgment” results scored “Mid-range” with two hovering on the borderline “Low.” Teachers felt that top management and the organization showed enthusiasm towards the teachers’ project(s), primarily due to the fact that their projects were viewed by not only the students and teachers, but by the parents and the community. Thus, their projects were extremely visible, and, although the project(s) might have been considered a “failure,” the teacher(s) would not be judged too unfairly as long as they showed effort.

However, this is where the tension lies. The Director was not provided an evaluation instrument by top management and, therefore, did not give CSH teachers any kind of formal evaluation. From the results, it was reported that teachers were judged primarily by their ability to design student projects that were complex, interesting, and visually attractive. A teacher could present inferior student work at an exhibition maybe once, as long as s/he showed s/he gave it effort, but, if s/he continued to fail on a project(s), then, more than likely, s/he would be fired. One teacher commented that failure was an unwritten code that it was “ok” in small doses (Table 6.0, row 22). Since CSH teachers were encouraged to take risks, top management would be “ok” with one, maybe two failures, but a teacher did not want to become a repeat offender. One teacher summed up the lack of any formal evaluation system by explaining that not one staff member had any sense of job security, that there was pressure on the teachers to always produce something that was considered good. Only then would the teachers feel they were successful (Table 6.0, row 24). Later, this same teacher said that not having a formal evaluation system, and not ever knowing how you were judged can make teachers less creative and less willing to take risks. This teacher went on to say that, if the teachers did have a sense of job security, or had due process in hiring and firing, then more teachers would be more creative. Research has suggested that evaluation in of itself can have a dysfunctional effect on intrinsic motivation and subsequent creativity (e.g., Amabile, 1979; Amabile et al., 1990; Shalley & Oldham, 1985). Therefore, feedback by top management could be particularly important for creativity, yet particularly difficult in that creativity often involves trying new things and taking risks with the possibility of failure.

A critical challenge faced by CSH leaders was linking the various job-level contextual supports they have under their control. If efforts to generate creative ideas were positively

evaluated, but the teacher perceived s/he was not adequately rewarded in terms of salary, it may be that the employee was given a mixed message, and, thus, may or may not decide to continue trying to be creative, or even possibly look to leave the organization. One teacher said that s/he needed to make more money for the extra time it took for the teachers to plan, design, gather necessary materials, and publish books on their student projects (Table 6.0, row 26). There were limited to no extrinsic rewards, and, as this teacher explained, for him/her to sustain his/her lifestyle and future for his/her family, then the salary became more important.

The third central observation was how top management and the organization defined *shared vision*. Two survey items included in this category were having an open atmosphere in the organization and having a shared vision of where we are going and what we are trying to do. Both survey items were reported “Mid-range,” with shared vision scoring near the “Low” borderline. Encouragement to develop creative ideas and have an open atmosphere where members were pushed to think in more divergent ways (Nemeth & Staw, 1989) could result in the consideration of multiple views, yet how those views are channeled and fostered by top management is important. One teacher shared how difficult it was to have an open atmosphere when s/he might be fired, since it was pressure from a few senior teachers that shaped the organizational climate. A teacher reported that it was difficult to know the underlying current and climate since there were senior teachers who worked at CSH that unofficially could, at any given time, make conversation with Board of Trustee members, or a founding partner, and get a teacher fired (Table 6.0, row 29). S/he further explained that it was “sort of like knowing what pisses people off and what doesn’t.” It was a difficult balance for top management to facilitate an organization’s vision and, at the same time, build a climate where creativity and innovation co-exist. One teacher reported that only a handful of teachers were truly dedicated to this, primarily

because top management did not require it (Table 6.0, row 28). Therefore, it was voluntary.

There were many teachers who did want to support this vision of school improvement, and were not required to do so.

Research has indicated that the creative work climate within organizations flourishes when individuals and groups are provided fair, constructive judgment of their ideas, mechanisms are in place for developing new ideas, and there is an active flow of ideas and a shared vision (Amabile, Burnside,, & Gryskiewicz, 1995). The difficulty is that creating this climate requires a highly skilled and wise leader who can balance expectations for high levels of productivity, create a shared vision, be enthusiastic and open to new ideas, encourage staff to solve problems, but also allow members to take risks and allow failure to be acceptable, thus entrusting the organization to the possibility of failure. The data reports that this school has a laissez faire leader not skilled in building a creative climate.

Research findings in this single case study suggest that top management encouraged and expected teachers to come up with new ideas to solve problems and allowed teachers to take risks in trying out their idea(s). Many teachers expressed they could take a risk when designing an innovative and unusual student based project and could fail as long as they did not become a “repeat offender.” This fear was reflected in both the qualitative and quantitative data when teachers were asked if they felt they were fairly evaluated by top management. Because CSH did not have a tool to evaluate teachers, judgments were largely based on the quality of what students produced. Creating this climate appeared to have been difficult for the school Director, and one explanation could be he was a relatively new administrator who came up the ranks as a teacher. Research suggests that supporting new ideas with the possibility of failure is a high risk-taking benefit that can yield new bold initiatives and breakthroughs (Edmondson, 1999; Shalley

& Gibson, 2004). The data results indicated that many of the perceived work climate categories showed positive effects on teacher creativity, which resulted in new ideas, and several examples of bold initiatives and breakthroughs had been provided in this chapter. The school Director was partially responsible for some of those initiatives simply because s/he was well liked. However, data suggested that teachers perceived the school leader as lacking the skill or “wisdom” of a creative school leader. One example of climate effect on creativity without positive leader support was that teachers reported receiving feedback in the form of recognition and reward for creative effort from everyone involved with the school except from the school Director.

Table 6.0

Sample of qualitative analysis of perceived “Organizational Motivation – Organizational Encouragement”

Categories positively related to perceived Organizational Motivation – Organizational Encouragement: Interview Data	
<i>Stimulating: had a positive relationship with respondent rating of Organizational Encouragement</i>	
In this organization, people are encouraged to solve problems creatively.	I think we have the freedom to come up with the ideas but everybody is creative. I see creativity less and less (in other schools), there are those moments of sparks of pushing something in a new direction but I think all those moments have been supported (at this school) by learning, exposure or exploring things that are already known. Creativity is built on being able to explore which is a crucial thing to remember in the classroom as well. If the same setup was provided for other teachers (in other schools) you'd see the same eventual blossoming of ideas in them pursuing what they wanted to do.
people can express unusual ideas without fear.	I do a lot of projects of books I am interested in. But then since I'm working with Taylor, I'm thinking literature and one of my favorite ones (books) was Welcome to the Monkey House by Kurt Vonnegut and the stories in that are iconic...But, Welcome the Monkey House was the book where I read these short stories and so I wanted the kids to do a graphic novel, the graphic novel where you have to draw an image and you still have to put words in it. So, the image is worth a 1000 words. It's pretty complicated. So, if the kids were going to do

Table 6 (cont'd)

	that, they would have all these stories and they could each do one then we would print up our own book, Welcome to the Monkey House in graphic novel form.
people are encouraged to take risks.	Well the bent wood chair thing, that was insane. And Kenneth (the owner) told us, There is no way you are going to be able to bend the wood. We began watching these films on YouTube every day after school. So we built a wood steamer and I would buy all different kinds of wood and we would try to bend all kinds of wood, some would explode. We got this turkey fryer and so there were flames, exploding wood, it was super hot, and I'm thinking, Oh my God, we're going to be just devastated with the kids doing this because there's 40 chairs that need to be built. It was crazy! ... We were ready, my website was ready to go, then, I wanted to back out of it. Over the summer I kept asking (my partner), Are you sure you want to do this? It's going to cost a shit-load of money, we don't have the tools we don't have the clamps; I'm going to have to be organized as hell. I had to cover half my room; I put a tent over all this (work tables) because sawdust was everywhere. You couldn't get from one end of the room to the other. I spent 4000 dollars (of my own money) on it and my partner said, Just go for it. It was torture though; it cost me a ton of money, maybe years off my life but we have a cool book from it. It's one of the gutsiest projects I've ever done... I took such a chance with the money, with the danger, with the kids, with everything but it was fun. I have nothing to lose. It's all win-win to me.
there is a lively and active flow of Ideas.	I've been building little wood mechanical toys. This is something I saw at the Visionary Art Museum in Baltimore visiting exhibit from London Mechanical Cabaret. Being an engineer I was fascinated by it I thought it would be fun to make. Then it became a hobby and I wondered if this would interest high school students. As a test I pitched it in our <i>two-week-intercession</i> and I was really nervous nobody would sign up because they had other options during intercession. There was a trip to Italy, field trip mania, soccer and also video games. When I over enrolled on the second day this gave me validation that this was interesting.
new ideas are encouraged.	When I left Creation Station High (as a student who graduated from CSH) I wanted it changed and I knew there were ways that I wanted to change it but didn't know how. When I went to school (college) I was studying math education. I was constantly thinking how I can fix the system. I came back (to CHS as a teacher) and Sarah (who) is a huge proponent of experimenting with math education and she threw this

Table 6 (cont'd)

	idea out there I was naturally inclined to participate since that's been a mission that I've been after for quite a while now. This wasn't an administrative or professional investment it is more or less a personal investment since I'd lived the system.
failure is acceptable if the effort on the project was good.	That project was one of the weaker projects that I've done. I didn't feel great about it when it was done... We were leaving and Jacob (boss) came up to me and said congratulations. I didn't feel it but Jacob said, no the parents and kids were happy you did a great job. That felt good even though it wasn't my best work but it just felt like he recognized the strengths in it.
ideas are judged fairly.	We are allowed to be creative. There's no there's no bad ideas here and you're allowed to fail, which is big because if there's something that somewhat risky if you fail in you know you are not going to get penalized for it there is - why would you ever do it? But if you know that you can do it if it doesn't work well; there's something that you can learn from that then, why not try it and why not be creative and push the envelope up a little bit?
people are recognized for creative work.	Last year during the inner warrior project Austin asked if I wanted to be one of the featured projects on Unboxed (public message from the school) which is really cool for me because it was my first semester as a teacher. My parents are educators and I felt I was making them proud. There's a couple ways that are built in systematic recognition but the basic one everyone gets to have is through the exhibition of student projects, in a community meeting, or some sort of act. We all invite each other to that and I don't know whether you heard that in this morning's meeting where people were invited. That sort of thing brings immediate feedback, because when you have an exhibition, people know about it, which is rewarding. When you have an exhibition people know about it, come to it see it, hear it, and feel it.
This organization has a good mechanism for encouraging and developing creative ideas.	Senior teachers will meet in the spring, and every teacher will bring a project idea. So, I'm thinking about doing this – I'm thinking about doing that – and we sort of <i>pitch</i> our project ideas to each other and if two teachers, this humanities teacher the science teacher, say wow, we could totally go together. Then they will partner for that year. But that's not stuck and that can change the following year. We call it <i>project pitch time</i> . We all agree to think about something. You come

Table 6 (cont'd)

	to pitch your idea and then from there partnerships sort of form.
a shared vision	This idea of personalization, world connection, and intellectual mission, those sorts of design principles; we will come to those and we will argue and say that is a poor interpretation of that... There can be suggestions that are made at times they'll be a real resistant to it on our part. In my case I chose to work here because I like the design principles. I like the project orientation that the teachers design and the personalization and the low caseload. There are things we're doing here that make teaching easier. If we ignore those reasons that were brilliantly derived over the years by Kenneth (owner) and Rob (President and Core Faculty Member in the Graduate School of Education) and the National Association they've been with, We do so at our peril.
has an open atmosphere.	Getting the collective wisdom of, you know. I knew that my partner taught seniors for years and second semester seniors, kind of– they act a little differently– and so I went to him because I knew he would have advice on how you can structure this...then I showed it to my husband to get his expertise in mathematics on it, so just getting different bits from different people, collective wisdom of crowds right? Like everyone knows more than just one person.
Top management expects that people will do creative work	A lot of schools don't ask if the teacher has any creative ideas. Creativity is not very transparent. Of all the things that are asked (at other schools) of a teacher, creativity is not at the top the list and it should be. We think that creativity is at the center of the whole thing and our creativity is one thing (for teachers) but more about what creativity we get out of the students.
is enthusiastic about my project(s).	The Econ book had a lot of legs in terms of recognition. Kenneth (Owner) held it up at a couple staff meetings. He's given it to all sorts of cool people because we always get visitors. So for instance, he sent copies to Bill Clinton because Irwin Jacobs recommended the book to Bill Clinton. Stuff like that, that is completely surreal and like only at High Tech High that kind of stuff happens. That was my first year here and that was a real trip and kind of cool. If you look at my digital portfolio the first quote is “The grass is greener on the other side; no it's greener where you water it”. I took the risk that everything I was hearing from the institution was true that they did want me to do different things and I am teaching more about life which is about projects not about a textbook. I got recognition

Table 6 (cont'd)

from my Director Jeremy, CAO chief academic officer, Kenneth, the head of the organization. Kenneth brought Christopher (CSH founder) over to get a sample of student work to put in a presentation Christopher was giving to Israelis on how he spends his money.	
Categories <i>positively</i> related to perceived Organizational Motivation – Organizational Encouragement: Archival Data	
http://collegialcoaching.weebly.com/data-collection.html	
Categories <i>positively</i> related to perceived Organizational Motivation – Organizational Encouragement: Observational Data	
Staff Meeting #2-As ideas are presented, some feedback, mostly positive is offered.	
Categories <i>negatively</i> related to perceived Organizational Motivation – Organizational Encouragement: Interview Data	
Inhibiting: had a negative relationship with respondent rating of Organizational Motivation – Organizational Encouragement	
In this organization,	
failure is acceptable if the effort on the project was good.	Sure, in small doses it's OK to risk and fail in this place. I feel like you don't want to become a repeat offender.
ideas are judged fairly.	Austin said, Honestly, I'm trying to be sweeter about it when I talk to my fellow teachers but I've been really pushing this thing, this project based learning. I'm trying to explain to people, look it's not about you, it's about the kids doing their project. It's not my assignment, it's their project and they're going to love it so much more if they're the ones that are doing it; not you standing in front of them lecturing to people... I can't go on enough about how rubrics and what bullshit, what utter bullshit they are and they are not useful. I don't care what ivory-tower-person hears this but they don't work in schools they work in ivory towers and they stunt creativity. Rubrics keep kids; well they just want to get the "A" and so they do the minim. If I make the exemplar and show it to them and say yours has to be better and they always do better. And I have evidence on my website to prove it, 11 years of evidence. It's all about getting this buzz going, getting idea is flowing and if they (students) see that I'm excited about it, they get excited. But, if I'm a miserable, sad teacher who reads the newspaper, (and says) "I've done this assignment a thousand times" you know, how are they going to get excited?
performance evaluation is fair.	Since we have no job security there's pressure to do something good then something successful later. But it can go both ways you know? Not having job security can make you less creative and less willing to take risks. I think if we have more job security or had due process in hiring and firing then we might be more creative.

Table 6 (cont'd)

	I would get ridiculous text messages, ridiculous e-mails from certain staff member and...you know eventually...they were fired.
people are recognized for creative work.	There is no official recognition for the teachers, there are no awards ceremonies; you're just expected to do these things, to keep your nose clean and be the best person you possibly can with as few fetters as possible.
people are rewarded for creative work.	It's a teacher led school but not as teacher led as people are led to believe. We have say in the little things like schedules but not in the big things like pay.
	I need to make more money, I'm well paid for where I am in my teaching career but for this to be sustainable I need to have a pay scale. As I get older start a family this will become something more important for me.
This organization has a good mechanism for encouraging and developing creative ideas.	I would say that Odyssey (new teacher induction workshop) is one of those things where you remember the big ideas more than the specific things.... I think those (pre-service orientation activities) were supportive but it is just a small dose of actually being in the school community. ...I feel like you only hear it there. We are in a big hierarchal organization as much as they like to not highlight that.
a shared vision	I think what happens is there becomes a conflict between people that maybe have been here for a while or who understand or have a feeling of what the vision is about and we have these ideas of our design principles.
has an open atmosphere.	Here it's very much, well it's weird because Austin has such a face to it, but it's like, officially there's a lot more laying-off. I feel sort of the undercurrent of staff culture it's sort of like knowing what pisses people off and what doesn't.
Top management is enthusiastic about my project(s).	Kenneth (owner) will say this much, the way they stay on message is by letting go people who don't fit what they want. I think what they want is fairly clear but it stinks when you are a new teacher. You've got a lot of deficiencies that may not be turned around at the rate that this school may want them to be. But that's kind of like how; well they allow people freedom but only the people they trust with

Table 6 (cont'd)

freedom, and that sort of whittles itself out over time.

Categories <i>negatively</i> related to perceived Organizational Motivation – Organizational Encouragement: Observation	
a shared vision	Staff Meeting #1- this was from the School Leadership Project “It was our hope that these structures along with a common language around collegial coaching would help to establish a “culture of critique” around the collegial coaching process. Such a culture results in participants engaging in informal critique on a daily basis. Improvement of the craft becomes a part of the everyday conversations of a school and a central part of the purpose of teaching. Establishing cultural norms is not a process that occurs overnight. People must see and feel results before something becomes part of them. We hope we have helped to start this process, and can’t wait to take what we have learned with us.” Some of the staff want to see Collegial Coaching imbedded within their culture and vision for the school, yet only a handful of teachers are truly dedicated to this- again this is voluntary so those that do not want to support the vision of the school are not required to do so.

Lack of Organizational Impediments. Proposition: Schools that value creativity provide a sense of stability and continuity as well as flexibility and ingenuity. Schools that maximize collective creativity provide information to diminish unnecessary politics and competition and limit procedures and structures that protect status quo.

Research defines Lack of Organizational Impediments has an organizational culture that does not impede creativity through internal political problems, harsh criticism of new ideas, destructive internal competition, an avoidance of risk, or an overemphasis on the status quo (Amabile et al., 1996).

Figure 13 (Appendix A) reports a wide range of responses to the survey section “A Lack of Organizational Impediments.” Results from twelve survey items show the degrees to which respondents perceived a lack of organizational impediments: One was rated “Very High,” three were rated “High,” six were rated “Mid-range,” and two were rated “Low.” The mean score for

this dimension was the seventh highest of the eight dimensions that contribute to a creative work climate that produces creative outcomes. Table 7.0 reveals twelve characteristics within organizational impediments resulting from a qualitative analysis. Teachers reported considerable detail about positive and negative perceptions of the lack of organizational impediments.

A logical explanation for respondents reporting “Very High” and “High” ratings of their organization was that teachers perceive that upper management (Director, Vice Principal, and Board of Trustees) did not strictly control them and procedures and structures were not too formal in their school. Another explanation for respondents’ results might also be explained by the unusually high degree of freedom teachers perceived being given to them by their Director and upper management (i.e., vice principal and/or Board of Trustees). For example, within “This organization is not strictly controlled –Positive” (Table 7.0, row 12), teachers often mentioned that the freedom they were given was extremely highly motivating, and one teacher described that the teachers are the ones who determine, for the most part, how to make CSH a better place, although it may not be related to simply tasks, but overall related to curriculum, projects, planning time, and general ideas. Teachers commented on the lack of red tape and that they perceived that the Director was sensitive to the amount of effort teachers gave in creating valuable student projects. For example, within “Procedures and structures are not too formal – Positive” (Table 7.0, row 11), one teacher commented positively that it took a lot of time to, first, come up with an interesting idea for a project, second, to structure the project with other team partners, third, to gather all the materials and needed resources to successfully complete the project, and, lastly, to setup and practice prototypes for the projects to ensure the successful implementation. S/he went on to say that if s/he had to submit lesson plans to the principal, plan the pacing guides, and submit a giant binder of expectations to complete by the end of the year in

a defined time frame, then none of the teachers would even have time to design unique and exceptional student projects. However, CSH was not without problems.

Over a decade ago, Amabile (1998, p. 77) said, “When I consider all the organizations I have studied and worked with over the past 22 years, there can be no doubt: creativity gets killed much more often than it gets supported.” For creativity to flourish at CSH, research indicated that leaders need to make conscious efforts to support creativity in their schools, and yet, they still could fail to minimize impediments to creativity due to the fact that some behaviors that kill creativity go on behind the backs of school leaders, or they choose to ignore them. Those contextual influences could be perceived as obstacles, such as political problems, harsh criticism of new ideas, destructive internal competition, and avoidance of risk (Amabile et al., 1996). Several teachers reported concern and even fear about behavior(s) perceived as obstacles, which impeded their motivation to engage in creativity. One category involved concerns problems with colleagues.

Given the size of the teaching staff, data suggests that it takes only a few to create conditions that impede creativity. Therefore, a small portion of teachers contributed to problems that made a big difference in how others interact with each other and their work environment. One of the important contextual influences in this case study was the small size of the school and the low number of teachers. One teacher reported they were in a small community of 30 teachers. Therefore, people knew what other people’s work was and knew if anyone failed or received positive or negative feedback on her/his work. In addition, because everyone knew what the other was doing, they also knew if a teacher was perceived as “slacking” and if the teacher was not teaching to the quality and expectation that many of the teachers held. One teacher, in particular, was often reported as having a strong influence on the work climate. For example,

within “There are political problems –Negative” (Table 7.0, 17), several teachers reported that they call one person “the Whip” for both positive and negative behaviors. One, s/he is really good at what s/he does in the curriculum content areas, two, s/he does not have a filter on what s/he says. In fact, s/he lets people know when their stuff is good and when it is not, and s/he carries a tremendous amount of influence with who gets hired and who gets fired. Many teachers perceived that this teacher “was the school” and s/he defined the school vision and had an absolute impact on the quality and expectation(s) for high quality creative work from others. One teacher did not want to come right out and call him/her a “bully,” but implicated in the interview that if s/he if did not like your work, that you would be in trouble. Another comment supporting this claim came within “People are critical of new ideas –Negative” (Table 7.0, row 20). One teacher reported that one of the teachers who was fired recently ended up being the nemesis of this particular senior teacher, that all the other teachers would tell you this same story, and that it was not a secret. S/he went on to explain that it had part to do with a possible clash of personality, and part had to do with different visions or philosophy of teaching pedagogy. These reports suggested possible explanations for lower survey scores on items that addressed political problems, pressure to produce, the need to protect territory, and other hindering work projects.

Results suggest that pressure to continuously produce highly creative projects for public display was perceived as controlling and as one way to hold teachers accountable. In support of this claim, within “People do feel pressure to produce anything acceptable –Negative” (Table 7.0, row 25), one teacher reported that there were times when the extra extravagance of a student project did receive more attention than the content. S/he perceived that the content in his/her exhibition was far more important because that is how and why students learn, and extra icing that a teacher embedded in the project is showing how it’s aesthetically pleasing. S/he stated that

there was a constant struggle for teachers between content productivity and aesthetics for their exhibition. In Table 7.0 teachers reported pressure to support their work partner(s) and the need to produce high quality creative student learning projects, in light of not knowing if their performance was adequate enough to continue employment, and, because teachers did not receive evaluations, it was important that student exhibitions be perceived by other teachers, parents, and the community as successful and exciting.

Evidenced by research, minimizing organizational impediments and maximizing intrinsic motivation help maintain a healthy environment and reduce employee turnover, thus increasing organizational stability (Riley et al., 2011). Moreover, people who feel threatened by the boss or by their colleagues often suffer in the form of mental health and physical wellbeing and might express a desire to leave their employment. Teachers reported both positive and negative perceptions about the level of comfort in the work place. For example, within “There is no destructive competition –Positive” (Table 7.0, row 4), one teacher reported that s/he thought that it had to do more with having competition with yourself than with other teachers and that it was extremely important for him/her to do a really good project. On the other hand, other teachers reported that CSH could be a “gossipy place”. For example, when one teacher reported that, often, one might hear negative remarks about other teachers, but a possible reason for that is that it was a way for teachers to triangulate how well they themselves were doing in the school.

Because many charter schools do not have teachers’ unions, dismissal processes are more in line with the private sector and require less administrator effort when documenting and recommending dismissal. Teachers reported how the organization dismissed teachers as both positive and negative. For example, within “Destructive criticism is not a problem –Positive” (Table 7.0, row 5), one teacher reported that the school employed at one time two really toxic

people who had actually been there for few years, yet they both decided that working within the system was just not going to happen and complained all the time and created an unhappy and atmosphere. Eventually they were fired and CSH hired other teachers who fit their vision and would be highly creative in working on student-based projects. On the other hand, some teachers believed upper management valued controversy. For example, within “There are few political problems – Negative” (Table 7.0, row 17), one teacher reported that, although top management and the Director, do work to minimize distractions, they also liked stirring a little uncertainty and competition, which resulted in teachers feeling a lack of job security. One major problem that was mentioned regarding top management’s doing this was that not everything went well. In fact, as one teacher said, “the problem is when it blows up.”

While unnecessary negative employee behavior might take place without the knowledge of the boss, it still remains a management responsibility to minimize the disruptive behavior that causes the motivation for creativity to suffer (Mumford, Zaccaro, Harding, Jacobs, and Fleishman, 2000). The data indicates that management contributed to organizational impediments and that the status quo and rate of change was not carefully managed in order to provide employees with positive motivation. Centralization and decentralization are described as opposite ends on a continuum, but effective leaders of innovative organizations will make decision based on the notion that both need to coexist, and that some decisions can be centralized and others decentralize at the same time (Bolin & Härenstam, 2008). Creativity at CSH was stimulated and suppressed depending how organizational impediments were managed. Procedures and structures that did not protect the status quo and allow for flexibility and ingenuity were perceived as encouraging teachers and their team’s creativity. Research suggests that preventing negative politics needs to begin with the establishment and reminders of clear

organizational and group norms regarding collegial behavior (Delbecq, 2001). These observations are a reminder about the importance in an organization to have both mission and group norms that everyone is aware of. This was not observed at CHS except for archival data shown on the school website. Teachers provided both quantitative and qualitative data that suggested perceptions of too many unnecessary politics, that competition existed, and that teachers felt too much pressure, most coming from a small number of senior teachers. Data collected also suggests teachers had concern for their “territory.” While CSH valued creativity, data suggests a need for greater stability and continuity in the form of job security. However, without denying the negative impact from internal pressure and unnecessary politics, all other data suggests that organizational impediments at CSH fell within the positive range of other creative organizations.

Researchers suggest that schools that value creativity help to eliminate Organizational Impediments by eliminating internal political problems, harsh criticism of new ideas, destructive internal competition, an avoidance of risk, and an overemphasis on the status quo (Amabile et al., 1996). It was reported that top management did make conscious efforts to support creativity in the school by providing teachers with a tremendous amount of freedom, yet still failed to minimize or diminish impediments to creativity in not preventing political problems that might interfere with teachers’ perception of a sense of stability, continuity, flexibility and ingenuity. In addition, teachers felt a sense of pressure to produce, as was explained in an earlier part of this chapter, since it was perceived that teachers were heavily judged by the projects their students created in addition to the quality of their relationship with certain senior staff members. Several teachers reported concern about pressure to produce high quality projects as an obstacle, which impeded their motivation to engage in creativity due to the destructive competition between

teachers, and, additionally, possibly felt a need to protect ideas that might be seen as ingenious and stimulating.

Creativity at CSH was stimulated and suppressed depending how organizational impediments were managed by top management and how and if they made conscious efforts to support creativity in their school by maximizing intrinsic motivation to maintain a healthy environment and increasing organizational stability.

Table 7.0

Sample of qualitative analysis of perceived “Organizational Motivation – Lack of Organizational Impediments”

Categories positively related to perceived Organizational Motivation – Lack of Organizational Impediments: Interview Data	
<i>Stimulating: had a positive relationship with respondent rating of Organizational Motivation – Lack of Organizational Impediments</i>	
In this organization,	
there are few political problems.	We don't have we don't have a lot of middlemen. We don't have like other schools would have like department chairs. I see how that might cut down on some politics. People are jockeying for this and that position.
	I do think that has been a problem in the past. The school administration is maturing and understands better that politics are not good. You know I don't hear very often, like people are talking about, Oh how great they are or how great so and so is. In the school, teachers and administrators acknowledge how we are all important. We are close to being equal and important and all of our perspectives that we bring in are important.
there is no destructive competition.	I think it's just more that the competition is with yourself to do a really good project. So if I see someone else that did a good project, I don't think – Man, I can't believe they did that. Like, I'm inspired by it. I think that's amazing. I wonder if I could use something like that in my own classroom but it's not a competitive thing. It's more like we all rise because of each other's influences, you know? Or even spreading it to other teachers. I've had teachers e-mail me especially the brand-

Table 7 (cont'd)

	new teachers and say I really like the credit card project you did. Can I have it, or do you have any rubrics or you know. And, absolutely, like I'm not going to guard it like it's my own and say no that's my project. It's almost scary; like, I got hired for this position... They said, Can't wait to see you! They didn't say what they want. They said, here are all of these resources and here who has experience. But they don't tell you what to do. I don't feel competition, but I do feel pressure to perform, not against each other but for the school.
people are not very concerned about protecting their territory.	I would be totally fine with someone else using my ideas or being like, hey can I do that project with my kids? That would be totally fine. I tend to do something kind of newish or like a tweak on something I worked on previously. Because I've only been here 3 years, I feel like there is lots to try out. So, nobody would ever, well like even if I was doing a project and my critical friend said, that's a great project, I think I want to do that too, that wouldn't really bother me. I would be: Alright that's awesome, let's work together and develop the curriculum.
destructive criticism is not a problem.	We had two really toxic people on staff that had actually been here for few years. And, they just weren't happy with things that didn't get resolved and they both decided that working within the system was just not going to happen. So, they just complained all the time and created a crappy atmosphere and they (eventually were fired).
people are not concerned about negative criticism of their work.	In a way these glass walls are like a distraction but on the other hand they are not (speaking about organizational transparency). In my past jobs I would go to bed worrying about what the vice principal is thinking and here I go to bed worrying about the kids; did I do enough for them, are they OK. If you continue to teach in a particular way and have a routine your creativity is stifled. Teachers can get in a rut. I think you're more productive when you are forced to look at what you're doing from different angles. One perfect angle that takes place is when you work with someone else, even if it's with the same person on several occasions it could still be useful, but more often when you change your partner. When there is a partner teacher you need to justify what you're doing and this makes you better.
people do not feel pressure to produce anything	Like I did a project one semester that I just properly didn't plan out and time crept up on me like I should have anticipated but I didn't. So,

Table 7 (cont'd)

acceptable, even if quality is lacking.	it just wasn't very good. The kids did mediocre work and I realized that the effort to take to turn that into better work was not worth the cost. So we just kind of left it, not half done, just done more quickly and more poorly than I would have liked.
Top management is willing to take risks	I think its people like Kenneth, Bill and Jacob (top-level managers) they walk the walk and talk the talk. I think it comes from this culture they've created here. They give you all this freedom and they never take it away. It amazes me what we get away with here.
place little emphasis in this organization on doing things the way we have always done them.	To do a text book and have study questions: If you pay somebody to make a textbook and a teacher shows other people how to do something based on the text book, the chain is broken because automatically the teacher's being told to do something that somebody else made and good teachers don't do that. Teachers are the best example if the information didn't come from an original place, it will not be implemented well.
is not too formal with procedures and structures.	I think the creative capacity of all teachers is even, but the application and the action of those ideas is what differs...Most teachers go into teaching not because that's the only job they can get because industry pays much more for that. It's because they like teaching, they like seeing that success. So, naturally I feel compelled to keep looking for more innovative, creative or effective ways to teach my students and my hopeful expectation of everybody else is that it's the same. I think the difference between a project-based learning school and a traditional school is that those people at a traditional school don't act on those ideas because they have so many expectations and protocols. Some schools have to submit lesson plans to their principal every day. There are so many extra things it takes away from that idea (of creativity). To come up with a project, structure the project, practice the project it, then setup for students, and get all the materials is a lot of work. If I had to do daily lesson plans, submit them and have a giant binder of expectations to complete by the end of the year and they wanted them done on a particular time frame, I wouldn't even have the time to do that (design projects).
does not strictly control this organization.	Sometimes we have something similar to Socratic seminar meetings, we sit around and talk about how we could make this a better place those may not be necessarily task specific but this can't be general sort of. What we like about this place and what we want to change about the place. An ongoing feeling that we need to continue keeping some

Table 7 (cont'd)

change afoot otherwise will codify it too much and you get crusty or routinize. I guess that's a fancy word for that. There's this ongoing, let's stir it up a little with the other side.

Categories <i>positively</i> related to perceived Organizational Motivation – Lack of Organizational Impediments: Observational Data	
Little emphasis in this organization on doing things the way we have always done them	the purpose of this meeting was there was a school wide problem so that the school could meet the needs of the Hispanic population. Jacob was modeling how to facilitate problem finding (how can we look at this issue and frame it in different ways) ...and solving problems (and then he gave time for the group for convergent and divergent thinking process. And because there is climate conducive for creativity, the researcher's observation was that the natural inclination was to come up with creative ideas rather than the status quo of ideas.
Categories <i>negatively</i> related to perceived Organizational Motivation – Lack of Organizational Impediments: Interview Data	
Inhibiting: had a negative relationship with respondent rating of Organizational Motivation – Lack of Organizational Impediments	
In this organization, There are few political problems.	I'm not sure this place always does (minimize distractions). I think they like stirring a little uncertainty and competition and job insecurity. I don't think they necessarily mind that. The problem is when it blows up. We had a senior prank a couple of years ago and it divided the faculty. I'd be surprised if people haven't spoken of this. It divided the faculty and a lot a faculty members felt that. They wanted a different outcome than what happened and they didn't have a say in that. Austin, I call him the Whip. You know, he's really good at what he does, he doesn't have much of a filter and he let's people know when their stuff is good and when it's not and he carries the weight; less so than perhaps Jacob (boss). Jacob still makes the hiring and firing decisions. But like Austin is the school, um I don't want to say bully because that has weird connotations, but you know, if he doesn't like your work, you're in trouble.
there is destructive competition.	You tend to hear things and those thoughts (negative remarks about other teachers) that stick in your mind before you really get chance understand their practices and you never really know the true story. I think part of it is because they want to keep it private but people triangulate.

Table 7 (cont'd)

people are very concerned about protecting their territory.	The organization tries to do is to be transparent. I don't think it's 100% percent, probably by design. People are forced to play nice with one another because they have to. I think collaboration can get pretty forced in this school. People try to get too cute with it and it comes from a good place but it leads to some really esoteric stuff, I think. There are ambitious people who want to be original and show how collaborative and original they are sometimes it just gets esoteric. Sure, in small doses it's OK to risk and fail in this place. I feel like you don't want to become a repeat offender.
people are critical of new ideas.	You know, one of the people who was fired; ended up being the nemesis of Austin. And, everybody will tell you this. It wasn't a secret. Part of that had to do with personality, part of that had to do with pedagogy. We had we had meetings where people just stormed out of meetings, swearing. It was pretty ugly. It was it was it was almost as ugly as what I experienced in some the public schools. It was pretty ugly. Now, would middle management have helped with that? I don't know, but it seems like a real gossipy kind of place.
destructive criticism is a problem.	Austin has been here for a long time and an advocate for project-based learning. I was going over my lesson plan with him because I respect his opinion. I left completely discouraged because I've been doing this assessment for teaching, which is rubrics, assessment and standards. I'm trying to use that to fuel my ideas but not rely on them because this is a project-based system. He gave me advice that I took to heart (broke my heart).
people are concerned about negative criticism of their work.	Austin said, when we first opened some people would slow things down because they were having trouble. We are not doing that anymore because if you don't want to work in a progressive school you don't have to work here, you can work anywhere in the country. It's not anyone's right to work here. Last year, two people got fired.
people do feel pressure to produce anything acceptable, even if quality is lacking.	
<i>Pressure with partner(s)</i>	I certainly want to do right by him (partner). On a personal level, well,

Table 7 (cont'd)

	it's like its pride in my work.
<i>Pressure about the quality of a creative outcome</i>	There are times when the sizzle gets a little more attention than the steak. The steak is the content in my exhibition and it is important whether the kids learn. The sizzle is going to be how we are going to show it in a way that's aesthetically pleasing. A five-star dinner arranged nicely looks a whole lot more appetizing than casserole. This leads us to productivity and the big struggle. My answer there is a constant struggle for teachers between content productivity and aesthetics for their exhibition.
Pressure of the visibility of an exhibition	(The exhibition) and so the <i>publicness</i> of that and that the permanency of that...
Pressure from not receiving an evaluation or critical feedback from the boss	I don't know if I am but I assume I am doing all right. I think of it kind of as a no news is good news system.
Pressure from uncertain job security	You know, one of the people who was fired ended up being it was the nemesis of Austin.
<i>Pressure to be as good as others</i>	I would be embarrassed to have students not be engaged because your reputation goes to crap. You have all these teachers around you who do awesome things; they run a robotics program, or they create thick beautiful books, or they do these crazy cool projects... With all this greatness around you whether it's greatness in curriculum or greatness in relationship with students you don't want to be a broken wheel.
place emphasis in this organization on doing things the way we have always done them.	I think that systematic things rarely happen because we are so not into standardizing. You know, teacher as designer, no one is going to tell me what to do in my classroom. It's not necessarily a bad thing but getting things done on a school-wide level is very tough.
is too formal with procedures and structures.	You can look at it is a good or bad thing. Like, the good news is you get to do what you want. The bad news is that means you need to design everything, which can be overwhelming when you first start here. But, the fact that there is not a class set of books, there's not any of the standards listed, that you're supposed to cover. You don't even get dry erasers, you have to get those on your own too. You are literally building your classroom you get desks and chairs and probably a whiteboard depending on what room you are in.

Table 7 (cont'd)

does strictly control this organization.	Basically, if Kenneth (founder) wants something to happen – it's going to happen regardless of what the faculty has to say.

Categories ***negatively*** related to perceived Organizational Motivation – Organizational Encouragement:

Observation

is too formal with procedures and structures	Staff meeting #1 (7:30 a.m. meeting is supposed to start) Most teachers are in the room. The Director calls the meeting to staff meeting #1 Between 7:45 and 8:00, 5 teachers come into the room late. 8:15 Teachers begin to gather their belongings and leave the room. (only 75% of the teachers are present-some teachers come later and some leave even while the meeting is being conducted).

Research Question #2 asked how and to what degree does organizational motivation stimulate and impede creativity at CSH? First, how and to what degree does organizational encouragement motivate teacher and group creativity and second, how and to what degree does a lack of organizational impediments motivate teacher and group creativity?

KEYS® Survey results report a wide range in the degrees to which respondents perceive organizational motivation as encouraging their creativity, from “Low” to “Very High” when compared to other creative organizations that comprise the norm group. Of the 27 items measured in Organizational Motivation, approximately 11% were rated “Very High,” approximately 30% were rated “High,” 52% were rate “Mid-range,” and approximately 7% were rated “Low.”

Top management encouraged and expected teachers to come up with new ideas to solve problems and, at the same time, allowed teachers to take risks in trying out their idea(s). Many teachers expressed they could take a risk when designing an innovative and unusual student based project, but, if that project failed, they could be excused once, maybe twice. After that, they would be fired. This fear was reflected in both the qualitative and quantitative data of teachers' having the freedom to choose their projects, and results showed lower scores when

asked if they felt they were fairly evaluated by top management. CSH did not have an evaluation tool to measure teachers' performance. Therefore, the teachers' evaluation was based largely on what their students produced in their projects and how they were deemed acceptable by top management during the exhibitions. CSH had a Director who came up the ranks as a former teacher at CSH, and although s/he was well liked, teacher's perceive s/he did not possess the skill or "wisdom" to provide teachers with the mechanism that would evaluate fairly, provide them with recognition and rewards for their creative efforts, or cultivate a climate where a shared vision for the organization existed.

RQ#3: Resources

How and to what degree do resources stimulate and impede creativity at CSH. First, how and to what degree do teachers perceive resources as sufficient to individual and group creativity and how and to what degree do teachers perceive a lack workload pressures as stimulating or impeding to individual and group creativity?

Sufficient Resources. Proposition: Creative school organizations provide access to internal and external resources needed for creative work. Sufficient Resources is described as access to appropriate resources, including funds, materials, facilities, and information (Amabile et al., 1996).

Figure 14 (Appendix A) reports CSH survey participants having access to internal and external resources needed for creative work as equally to a "High" degree and to a "Mid-Range" Degree. Results show, from the six survey items, the degrees to which respondents perceived availability of resources and support as contributing to a positive creative climate: three items were rated as "High" but close to the borderline between "Mid-range" and "High" and three items were rated as "Mid-range."

Table 8.0 revealed six characteristics within Resources resulting from a qualitative analysis. Teachers reported considerable detail about both positive and negative perceptions regarding access to appropriate resources such as funding, materials, facilities, and information. Several teachers responded to interview questions in ways that clearly indicated their school had limited resources, and most of this was due to how money was allocated from state funding laws. Most teachers reported they wished they had access to more money to buy necessary materials for their students' projects. One teacher worked in the design industry before entering into education. S/he knew what it was like to have the availability of materials and resources at hand to work on exemplary projects that the industry would, in turn sell and, thus, profit from the innovation. One teacher commented that everyone knows the difference having the proper materials makes if one is going to have something that looks really stunning in a final product (Table 8.0, row 16). S/he wished that s/he could print out posters and could buy different types of plastics and special machines that would enhance the students' projects, yet money and budget were always the constraint.

Teachers also talked about how they and the students lacked the necessary technology to adequately get the teaching job done. One teacher said the teachers needed more computers for not only themselves, but for the students and that the school should have one computer per student and more, so every student should possibly have an iPad or laptop that they could take home and utilize at school (Table 8.0, row 15). Another teacher echoed the same frustration and commented that money and technology were resources most needed in his/her class and that it was difficult because of the lack of computers for students. The hardest part was when s/he would do a demonstration in class, s/he would need to put two or three students on one computer

and it would be hard to keep them engaged when one person was sitting there while the other student would do the hands-on work.

It was clear that there was a lack of money necessary to purchase the kinds of materials the teachers needed for their students to utilize in the creation of their project(s), yet many teachers seemed to find the money in other ways: donations from outside vendors, writing grants, or simply by asking parents to contribute. One teacher said s/he needed cash for supplies, although this year s/he did a good job raising money (Table 8.0, row 5). S/he asked the rich parents for almost one thousand dollars, and s/he was able to get most of the money s/he needed. Another teacher reported that money was not an issue because s/he applied for grants, so s/he had all the money and materials needed (Table 8.0, row 5). A third teacher agreed that money was not an issue since s/he found other ways to find necessary resources and said that money was not such a big issue, that the school had a decent budget, and that CSH had very generous parents. Other teachers acquired additional resources for necessary materials by successfully applying for grants. One teacher mentioned that s/he would often get support from both CSH and from the City Schools, in addition to ROP funding, which comes from State and Federally subsidized monies for vocational education (Table 5.0, row 6). S/he went on to say that, when s/he needed new computers last year, some of the city schools kicked in and bought sixteen computers. S/he felt that it was part of a teacher's job to ensure that funding was made available from other resources and to take advantage of those opportunities.

The other major complaint concerning resources was the lack of facilities necessary to adequately teach. The one KEYS® survey item that measured Facility adequacy scored "Mid-Range." The school building was comprised of several older buildings that once existed on the property. These older buildings were once part of the United States Navy Training Center. The

building that CSH is located in was not built for a school, but for military housing, so there are small rooms with glass walls and not enough larger rooms to allow students to build projects that may need expansive spacing. One teacher reported that some resources were beyond his/her control, like physical space in the classroom, the lack of cabinets, and glass walls, which were often distractions. Another teacher who had to change rooms each period reported that s/he struggled with the lack of having his/her own classroom, and, because of that, had to become very conscious of what projects s/he would do in the future since s/he did not have a permanent place to store projects or materials. S/he further explained that s/he could not do construction projects or big demonstrations because there was nowhere to put them or a place to exhibit them.

In this time of budget reductions and reductions, fewer resources are available. Teachers reported considerable detail about perceptions regarding access to appropriate resources, and many teachers reported limited resources. Most of this limit was due to needing more money to buy necessary supplies and technology. Although many teachers reported a lack of necessary funding to purchase the kinds of materials they needed for their students to utilize in the creation of their project(s), many teachers seemed to find the money in other ways. The one major concern that many teachers expressed was the lack of space within the facility to adequately teach or create student projects. A few teachers did not have their own classroom and “roamed” from one available room to the next. Another concern over facilities was having enough room to build projects, such as when one teacher was building wooden chairs. For a teacher who roams, this was an almost impossible feat.

While creative student projects could have been more elaborate with additional funding, teacher motivation to engage in creative work with their partner(s) remained high. CHS was not

an unusually highly funded charter school. Rather, the organization provided access to internal and external resources needed for creative work the best it could.

Table 8.0

Sample of qualitative analysis of perceived “Resources – Sufficient Resources”

Categories <i>positively</i> related to perceived Resources – Sufficient Resources: Interview Data	
Stimulating: had a positive relationship with respondent rating of Resources – Sufficient Resources	
The facilities I need for my work are readily available to me.	I’ve needed power tools as resources and we have plenty of tools here. We have the internet, which is a great resource a lot of what we do is Internet-based.
Generally, I can get the resources I need for my work.	I feel like if I really needed something I’m confident I can get it. I'm not really in want for anything. I have the computers I need; maybe more technology. Maybe a dozen iPads or that sort of thing. The only thing I would be in need for is more time for planning and researching but we seem to get it done with what we've got.
The budget for my project(s) is generally adequate.	I also need cash for supplies although this year I did a good job raising money to raise money I asked rich people for 1000.00. They have tons of it so they were pretty cool about it. Money I don't feel like is as big an issue. We've always had a decent budget and quite frankly we have very generous parents. I mean one year we made movies and we rented a movie theater for evening and we covered half the cost and we had a parent cover the other half the cost. So when you do something big like that, chances are, I've always found that there'll be someone that sort of – a parent that steps in to make it happen, which is awesome. Money isn't an issue because I've applied for grants so I've gotten extra money.
I am able to easily get the materials I need to do my work.	You need to keep your equipment current and relevant and fortunately I get support from both CSH and from the City Schools. I am also a State and Federally subsidized for vocational education teacher. I needed new computers last year and city schools kicked in and bought sixteen computers. Before that I was asking every year and one would say yes with restrictions. \I love the job but it would be a lot harder without the district support for this particular position.

Table 8 (cont'd)

The information I need for my work is easily obtainable.

I have plenty of human resources my team teacher and any other teacher I can go to for help.
People, like I need people that know how to jigsaw (solve problems together) and can help me with Photoshop and sewing machines and the myriad of things. What is so great is that there's 30 to 40 of us in here and there is always someone; like I know I can go to the engineering teacher and say hey I have some kids that need to cut Plexiglas in a circle. Do you have anything that can do that, when can we come by? And, that's totally fine or the physics teacher will send kids running in my room because they found some physics problem that they know they need math to use but that's not his expertise. I love that. Like that's fun, be in each other's rooms, solving each other's problems and helping each other.

Categories ***negatively*** related to perceived Resources – Sufficient Resources: **Interview Data**

Inhibiting: had a negative relationship with respondent rating of Resources – Sufficient Resources

The facilities I need for my work are readily available to me.

Some resources are beyond our control like physical space in my classroom and cabinets and glass walls, which can be hard at times.

Small rooms with all glass walls

We are getting limited on space. Our school needs more to expand.

Increasingly growing enrollment

The other thing that I struggle with in terms of resources is since I don't have a classroom I have always been very conscious of what projects I'm doing and how I approach them as I don't have a permanent place to store projects that are in progress or materials. I can't do construction projects or big demonstrations could have nowhere to put them or a place to exhibit them.

Floating teachers, those without their own room
Generally, I can get the resources I need for my work.

It makes more sense to me that the building oriented disciplines (that need more materials) would get more funding than humanities...That can be the hard sometimes because I'm constantly trying to find out cheaper ways to get materials. I don't like saying no to something because we don't have the money for it. I would like to provide better materials 25% more.

The budget for my project(s) is generally adequate.

We need more computers. Each kid needs a computer. It's truly hard managing the computers. It's a huge pain in my ass. It would be better for his one computer per kid.

Money and technology are resources most need in my class. The hardest part I think I would say that my job is the ratio of computers to students. Personally I think it would be more beneficial to the students if they could each have their own computer. When I do a demonstration they have to watch. Even if I had two at a time on the

Table 8 (cont'd)

	computer it's hard to keep them engaged when one person is sitting there while the other person gets to do the hands-on work.
I am able to easily get the materials I need to do my work.	I worked briefly as the operations for design industry so I know what difference proper materials make if you are going for something that looks really great in your final product. If I could print out posters that are half the size of that board and we could buy different types of plastics and special machines, we could take the level, way up. Like if we wanted to make a solar panel tree then we could. So, money and budget are always the constraint.

Realistic Workload Pressure. Proposition: Effective organizations have expectations that teachers will engage in-group work, and workload pressure is managed by limiting distractions and by providing sufficient time. Realistic Workload Pressure is the absence of extreme time pressures, unrealistic expectations for productivity, and distractions from creative work (Amabile et al., 1996).

Figure 15 (Appendix A) reports participants responded to five survey items in the Realistic Workloads Pressure portion of the survey and results show a narrow range in the degree to which the participants perceived realistic workload pressure as encouraging to their creativity. Respondents reported four items “Mid-range” and one item “Low.” Respondents reported the lowest rating as having too much work to do in too little time. Respondents reported four items “Mid-range” and one item “Low.” Respondents reported the lowest rating as having too much work to do in too little time. Respondents reported perceptions of having enough time to complete work projects, experiencing few distractions, and realistic expectations as close to the group norm mean. However, the mean score for this dimension was the lowest of the eight dimensions measured.

When teachers were provided time to reflect and respond to interview questions, it was not surprising to hear teachers report having too much work to do. In previous sections in this

chapter, data suggested that teachers were intrinsically motivated by the freedom management provided and by the challenges that came from designing student work projects. At the same time, many teachers felt the kinds of pressure that evoked feelings of being extrinsically motivated. One response to this intrinsic and extrinsic motivation was spending time preparing for their students during non-work hours. Teachers designed curriculum “from scratch,” created models to help students visualize what a project might look like and investigated potential barriers students might face and found solutions for helping students complete challenging, novel, meaningful, and visually pleasing projects in a timely manner.

Table 9.0 revealed five characteristics within workload pressure that resulted from a qualitative analysis. Teachers reported similar amounts of detail about positive and negative perceptions concerning workload pressure. Results supported previous research findings that investigated time allowed for creativity. Amabile et al. (2002), Hunter et al. (2011), and Karau (1992) suggested that creativity was highest when people had to pay attention to the task and felt a little pressure to get it done. Karau (1992) suggested that too little time evoked feelings of frustration, too much time encouraged social loafing, and, when subjects were given optimal time, they felt satisfied not only with task completion but with the amount of time provided. Because of fine distinctions among too much, too little, and just enough pressure, perceptions might differ. However, an equal number of positive and negative reports suggested that enough time was provided and an appropriate amount of pressure was applied on CSH teachers.

On one hand, the job seemed overwhelming at times, especially for newer staff. One teacher reported that s/he needed more time because designing the student projects take over one’s life (Table 9.0, row 6). S/he explained that s/he had not been able to find the necessary balance to have a real life and create spectacular and interesting student projects at the same

time. All the planning, the assessing of every piece, took so much time, and it was not simply the time spent at school. It was from early morning until bedtime. Another teacher reported that teachers expect their students to live happy, healthy lives, and CSH management preaches that teachers need to keep themselves happy and healthy so they are refreshed and can do their job, yet s/he commented that there was just not enough time for yourself, let alone even plan or prep for your classes (Table 9.0, row 9).

On the other hand, teachers appreciated time provided by the school Director for teachers to work together. One teacher reported that the teachers' schedule allows for time to collaborate and come up with new ideas (Table 9.0, row 3). Another teacher compared teaching at CSH to teaching in a traditional school environment that was far more realistic (Table 9.0, row 3). When s/he taught in another school, s/he had six periods with an average size class of 38. For this teacher, most of the time during each period was spent on the constant management of getting students to work and dealing with discipline and attitudes; there was little if any teaching going on. At CSH, it was much easier. This teacher reported only seeing, on average, 40 students each day, as his/her first and second period was one block so s/he would have the same students for 2 1/2 hours. S/he went on to explain that the students would go to math third period, then to lunch, the students s/he saw in the morning would go to his/her partner in the afternoon, and the student's s/he saw in the morning, would then come to her/him for the final 2 1/2 hours.

Teachers perceived distractions as both positive and negative influences. Teachers were aware of organizational efforts to remove many of the management tasks that distracted attention away from their creative work. For example, one teacher reported that there was a great deal of filtering that went on with the administration needing to take care of those requirements for accountability, such as from the level of role taking, which was very simple, very clean, and very

quick (Table 9.0, row 3). S/he went on to say that s/he believed that the people in accounting and their secretaries did a great deal of the paperwork, so it did not reach the teachers. Another teacher perceived the environment as an impediment because glass classroom walls allowed for excessive distractions. This teacher commented that s/he worked in “The Crystal Palace” (Table 9.0, row 8). Although the building looked amazing on the inside and outside, they did not have wood walls, and the glass caused a major distraction, both with the noise that reverberated and with students watching what was going on in the other classrooms. In addition, teachers wanted space where people could interact to solve problems or to construct projects together, and there just was not enough room to do that. Teachers expressed that they lacked a creative environment where people have space to interact with one another when needed, space where they could crawl away into a little hole when needed, and a place of solitude.

Managing a balance between these tensions might seem impossible, yet what was perceived as an asset by one teacher seemed like a liability to another teacher. One teacher who came to CSH from the private sector commented that the school provided free tuition for his/her teaching credential and believed that saved him/her time and money. However, another teacher reported just the opposite by stating that teachers who came from the private sector and needed a teaching license were employed for two years with the condition that they would be certified at the end of the two years (Table 9.0, row 8). From this teacher’s perspective, the teaching assessment process that s/he was going through was really distracting from his/her own practice, even though it might align. S/he said that s/he felt like working and going to college was dividing up his/her time between the two, and, although it was necessary, it definitely was a challenge.

Research suggests that an effective organization has expectations that teachers will engage in-group work and the workload pressure must be managed by limiting distractions and

providing sufficient time to accomplish the task (Isaksen, 2007). The teachers at CSH reported the lowest rating as having too much work to do in too little time. The mean score for this dimension was the lowest of the eight dimensions measured in this current research. Results supported previous research findings that investigated time allowed for creativity (Amabile et al., 2002; Hunter et al., 2011; and Karau, 1992). Most of the teachers reported perceptions of having enough time to complete work projects, experiencing few distractions, and that top management provided realistic expectations. In addition, teachers appreciated time provided by the school Director for teachers to work together and collaborate on student projects.

Table 9.0

Sample of qualitative analysis of perceived “Resources – Realistic Workload Pressure”

Categories <i>positively</i> related to perceived Resources – Realistic Workload Pressure: Interview Data	
<i>Stimulating: had a positive relationship with respondent rating of Resources – Realistic Workload Pressure</i>	
There are realistic expectations for what people can achieve in this organization.	There is not that kind of busywork and grading that I have had to do in the past, so that's nice. The schedule of Creation Station High makes time for the teachers to collaborate, so that's nice... Just knowing your students is less management. Like when I was student teaching with a class of 38, at a traditional school, it was just constant management of getting students to work, not fighting and all the attitude; there was no teaching going on, it was just managing. When I came here it was a shift. It's not perfect with the students but the more personalized it is, you can manage easier. I see 40 students each day. 1st and 2nd period is one block so I see them for 2 1/2 hours. They go to math 3rd period then to lunch, and the kids I saw in the morning will go to my partner in the afternoon and the kids he saw in the morning will come to me for 2 1/2 hours. The kids take two core classes and math. There's a great deal of filtering that goes on in the part of administrations to take care of those requirements for accountability from the level of role taking is done very simply, very cleanly and very quickly. We try to minimize the amount of you know the permission forms that are necessary. I believe that the people in accounting and secretarial worlds do a great deal of it so it doesn't

Table 9 (cont'd)

	reach us.
	We have a lot of freedom to create our own curriculum. There are bureaucratic hoops and stuff that we don't have to jump through as much. You never hear, "We have to do this because someone is telling us". And, you don't hear what you hear in other schools like the flavor of the month pedagogy and your boss is telling you to do it because his boss is telling him to do it because his boss is telling him and that pipeline of standardization. I think a lot of the formal structure which I don't have a huge patience for the part where I left engineering because you are so beholden to the process that it was a <i>analysis paralysis</i> for everything. Coming here it's the opposite.
Categories <i>negatively</i> related to perceived Resources – Realistic Workload Pressure: Interview Data	
<i>Inhibiting: had a negative relationship with respondent rating of Resources – Realistic Workload Pressure</i>	
I have too much work to do in too little time.	I need more time because this takes over your life. I just haven't gotten a balance. I think because I'm starting I don't have as many resources so at times I feel like I'm reinventing the wheel. That's why getting other people's resources has been helpful. But to have a real life and do this it is really difficult. All the planning and all the assessing and every piece of it just take so much time. So, it's not just the school time. I like having kids during the block; it's that time afterwards, until bed.
I have do not have sufficient time to do my project(s).	I always need more time but everyone always does. We have meeting time. But, to be honest, most of that happens not during meeting time (preparation) but when I run into the dilemma and I needed (a solution) like right now kind of thing.
There are too many distractions from project work in this organization.	Staff days and project-based learning should be used meet together with your teaching partners or your colleagues and get project tunings and protocol tunings done, and come up with an innovative projects... Just recently we had a calendar pushed out now we have agendas on the staff days either you have to do a specific type of protocol or go to a conference. I think that's adding distraction. I'm a firm believer with students the added pressure, family lives, taking care of siblings, cooking and cleaning. Then, they may have homework to do. Adding that homework aspect is sometimes unfair and unrealistic expectation, which is a proponent why students cheat, copy or are less creative and come up with standard projects and are satisfied with mediocrity. I

Table 9 (cont'd)

	feel the same. I will not take my work home. We are constantly living with the expectation that we have to just be ready to do it without having the time provided. Teachers who come from the private sector and need a teaching license are employed for two years with the condition they will be certified at the end of the two years. From my perspective the teaching assessment process I'm going through now is really distracting from my practice even though it may align I feel like I'm dividing up my time between the two and it's necessary, I need it in order to work here but it definitely been a challenge. My room is so damn noisy it's hard to concentrate. We don't have enough quiet space here. If we had space it would be improve creativity. We do a lot of things, we're good at doing things – we're not really good about thinking about things. Part of that has to do with pedagogical philosophy perhaps, and part of it has to that we have really horrible workspace. People who come here are totally amazed by it. It's the Crystal Palace and in many ways it is totally amazing. But, we don't have walls. It's a problem. You need space where people can interact. The creative environment is an environment where people have space to interact with one another when needed and has space where they can crawl away into a little hole when needed. We don't have any places to crawl into. You are constantly interrupted.
I feel a sense of time pressure in my work.	We expect our kids to live happy healthy lives. Creation Station High preaches that you (teachers) have to keep yourself happy and healthy so you can do your job too. Yet I don't think there's enough time for you to even plan or prep. There is a feeling like there isn't enough projects going on around here, so Austin will come around and put pressure to do more.

Research Question #3 asked how and to what degree do resources stimulate and impede creativity at CSH? First, how and to what degree do teachers perceive resources as sufficient to individual and group creativity and how and to what degree do teachers perceive a lack workload pressures as stimulating or impeding to individual and group creativity?

KEYS® Survey results reported a wide range in degree to which respondent(s) perceived resources as encouraging their creativity from “Low” to “Very High” when compared to other creative organizations that comprised the norm group. Of the 11 items measured in Resources, 0% were rated “Very High,” approximately 27% were rated “High,” 64% were rate “Mid-range,” and approximately 9% were rated “Low.”

Many of the interviewees clearly indicated that the school has a limit to resources and most of this was due to needing more money to buy necessary materials for their students’ projects or lacking the necessary technology to adequately get the job done. The one major concern that many teachers expressed was the lack of space within the facility to adequately teach or create student projects, and or distractions due to the facility. Many teachers do not have their own classroom and must “roam” from one available room to the next.

In summary, the teachers at CSH reported the lowest rating as having too much work to do in too little time. The mean score for this dimension was the lowest of the eight dimensions measured in this current research. Most of the teachers reported perceptions of having enough time to complete work projects, experiencing few distractions, and that top management provided realistic expectations. In addition, teachers appreciated time provided by the school Director for teachers to work together and collaborate on student projects.

RQ#4: Creative Outcomes

How and to what degree do teachers perceive their ability to produce creative outcomes in an organization that calls for creativity? First, how and to what degree do teachers perceive their environment as stimulating or impeding their ability to generate creative ideas and second, how and to what degree are teachers efficient and productive when working together to solve individual, group, and building-wide problems?

Creativity. Proposition: Teachers are more likely to generate creative ideas when they work in an environment that calls for creativity and when levels of creative efficacy are high.

KEYS® survey measured environmental stimulants and barriers to creative outcomes. A creative outcome was perceived in a creative organization or unit when a great deal of creativity was called for and when people believed they actually produced creative work (Amabile et al., 1996). Outcomes were based on certain criterion that was perceived as creative and might differ between organizations due the variation of the environmental context and by the types of desired outcomes (i.e. a chemical laboratory desires new treatments for illness whereas a school desires outcomes that benefit students). The componential theory of organizational creativity (Amabile, 1988, 1997) provided a general framework in which to understand the perceived work environment effect on individual and group creativity. More simply, creativity was an outcome that was produced by a work climate that was perceived as stimulating creativity. The Interactionist Theory of Woodman, et al., (1993) states that work environment has an influence on creativity, group creative behavior has an influence on individual creativity, and, in addition, organizational creativity has an influence on group creativity within the organization. This suggested that creative outcomes resulted from environmental stimulants, and, once a creative outcome was perceived, further creative efforts were enhanced by creative efficacy.

Figure 16 (Appendix A) reports that participants responded to six survey items in the Creativity portion of the survey and results show a narrow range in the degree to which the participants perceived their ability to produce creative outcomes. Respondents reported all outcomes at or above “High,” four items rated “High,” and two items rated “Very High.”

Table 10 revealed six characteristics within creativity that explained how CSH teachers compared their creativity to creative outcomes in other schools and reported characteristics that

might be inferred as having a high level of creative efficacy. There can be little doubt that CSH was not a perfect organization and impediments such as fear of being fired and some workload pressures served as obstacles to individual and team creativity. For example, there were minimal numbers of negative data reported regarding creative outcomes (Table 10.0, row 14).

Several CSH teachers talked about the “publicness” of projects that resulted from their creative ideas and where their students’ work projects would “live.” For many, student work resulting from teachers’ creative efforts *lived* and *breathed* in their published books. For example, there are three books shown in the archival data, yet CSH has many books displayed on their website that showcased innovation, all stemming from teacher creativity (Table 10.0, row 11).

CSH teachers were employed directly from college, from the private sector, and from other schools. Those teachers who experienced work life in other schools compared their ideas and work projects to previous experiences. For example, one teacher explained that, when comparing CSH to others schools, it was like night and day (Table 10.0, row 7). S/he said that this school was a creative place, and there was no doubt about it. Another teacher reported that many schools do not ask teachers if they have any creative ideas because of all the things that are asked of a teacher. Creativity was not at the top the list, yet many teachers at CSH felt that it should be. Another teacher reported that s/he thinks that most other schools actually discourage creativity, at least on the part of the teacher and student. Yet, at CSH, it is the opposite. Another teacher considered the facility as being different and reported that, based on his/her own education, it felt like a different way of learning with all the creativity the teachers had, and that for all the distractions on the facility, visually, when one walks in to CSH, it even looked different from traditional public schools.

CSH teachers' comments suggested that teachers had high levels of creative efficacy. For example, one teacher reported that most teachers felt that creativity was at the center of the whole school vision, curriculum, pedagogy, and student learning experiences and that the teachers' creativity was one thing but it had to do more with what creativity they could get out of their students (Table 10.0, row 7). Another teacher responded enthusiastically "Good God, man, of course it's creative!"

Previously discussed in this chapter, teachers worked on a variety of projects with a variety of work partners. However, most creative work took place when two or more teachers collaborated on designing student projects. Examples of teacher-designed student learning projects were provided at the beginning of this chapter. Examples included Ender-session, a response to senior students who emotionally "checked out" for the year; math projects that taught 9th – 12th grade students the value of persevering even when answers were not readily available; Chemistry and Conflict, where two teachers found and framed a problem with specific chemical properties, such as salt with a historical social conflict that included mining salt and slavery; and teachers solved another problem by making a connection between student work experiences and curriculum within their area of content. They solved this particular problem by dissolving the work-experience coordinator's position and taking over the oversight and supervision of students involved in a more effective and relevant work-experience program.

Teachers perceived their work climate as vibrant and stimulating their creativity. As previously mentioned, CSH teachers worked on a number of intriguing and innovative projects. Hennessey & Amabile (2010) defined creativity as the generation of novel, original and unique ideas concerning procedures and processes that could be used in an organization and are appropriate and significant to organizational problems and goals. The results from both the

qualitative and quantitative data supported that CSH was a highly creative organization that supported individual, group, and organizational creativity.

Table 10.0

Sample of qualitative analysis of perceived “Outcomes – Creativity”

Categories <i>positively</i> related to perceived Outcomes – Creativity: Interview Data	
<i>Stimulating: had a positive relationship with respondent rating of Outcomes – Creativity</i>	
My area is	
innovative	In the month of May most of our seniors have already received their college acceptance letters and have gone through 31/2 years of school and they’ve done maybe 9 projects. We weren’t getting much out of them in the month of May. We weren’t getting regular senior attendance and we were trying to get them to attend. Our art teacher brings up the point: If we are trying to find them, maybe they don’t want to be here and if they don’t want to be here maybe we don’t have anything good enough to keep them interested. To solve that problem we decided to end the school year in May and let the student find their end of their CSH experience. We’ve got a lot of great feedback. We ended school in May and students either found an internship for themselves, some went back to their junior internship or volunteered...We did this by posing the problem, figuring out some solutions and then taking action steps. We have done this on several different levels this was one that we now call <i>Ender-Session</i> .
creative	Good God man of course it’s creative! I’m working with (my partner) we’re doing this project called <i>Senior Squared</i> , which is high school seniors working with senior citizens and it’s working really well because we are both very different in terms of what we like to do for planning and getting things set and filling in each other’s holes very nicely. He’s in physics and I’m an English teacher.
Overall, my current work environment is conducive to:	
my own creativity.	There is a mentality around here that with freedom comes a very basic responsibility. Maybe because we have a set of people here who all find themselves as creative and doing their best. The mentality of the place is: Here, we’re going to remove as many strictures from you as we possibly can. We’re going to ask you to take advantage of that.

Table 10 (cont'd)

the creativity of my work group.	We are allowed to be creative. There's no there are no bad ideas here and you're allowed to fail, which is big because if there's something that is somewhat risky, if you fail and you know you are going to get penalized for it there is - why would you ever do it? But if you know that you can do it and if it doesn't work well; there's something that you can learn from that. Then, why not try it and why not be creative and push the envelope up a little bit?
A great deal of creativity is called for in my daily work.	When comparing his school to others, it's night and day. This is a creative place, there's no doubt about it. It's an incredibly creative place. A lot of schools don't ask if the teacher if they have any creative ideas... Of all the things that are asked of a teacher, creativity is not at the top the list and it should be. We think that creativity is at the center of the whole thing and our creativity is one thing but (it's) more what creativity we get out of the students. I think most schools discourage creativity at least on the part of the teacher and student, where here it's the opposite of what I just described. (In other schools) Here is the book you have to use and here are the desks, then there neatly in rows, and you know, you're told what to do. So its completely the opposite here where we take teacher as designer very seriously.
I believe that I am currently very creative in my work.	I think I am creative. I don't have a ton of experience in public schools, but based on my own education, it feels like different way of learning with all the creativity we have. Visually when you walk in it looks different, it is different. My ideas come up either so easily or it feels impossible. Ideas can come from any and everywhere, that's what I love about teaching project-based learning. I go to the library, I see a flyer that says the library is closing down or they're having a rally to keep one open. I think I can have a project to save the libraries.

Categories *positively* related to perceived Outcomes – Creativity: **Archival Data**

Stimulating: had a positive relationship with respondent rating of Outcomes – Creativity

My area is creative

The Blood Bank Project

Chemistry and Conflict

Calculus

Sample of books published

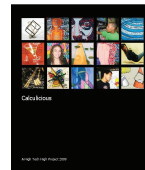
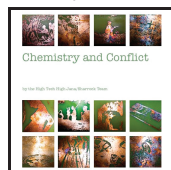


Table 10 (cont'd)

Categories ***negatively*** related to perceived Outcomes – Creativity: **Interview Data**

Inhibiting: had a negative relationship with respondent rating of Resources – Realistic Workload Pressure

My current work environment conducive to

my own creativity.

We expect our kids to live happy healthy lives. Creation Station High preaches that you (teachers) have to keep yourself happy and healthy so you can do your job too. Yet I don't think there's enough time for you to even plan or prep.

the creativity of my work group.

By conforming to the norms of the institution – to elaborate on that a little bit – so part of it is about job security – part of it is about sort of getting it out of the way so I can say I've done this and get back to our normally do.

Productivity. Proposition: Teachers who generate ideas that are both novel and useful believe they and their school are efficient, effective and productive.

Productivity is defined as an efficient, effective, and productive organization or unit (Amabile et al., 1996). For purposes of this current single case study, productivity was defined as the perception of organizational creativity as reported by the teachers and Director working in the high school.

Figure 17 (Appendix A) reports participants responded to six survey items in the Productivity portion of the survey and results showed a narrow range in the degree to which the participants perceived their ability to produce creative outcomes. Respondents reported all outcomes at mid-range and higher. One item rated “Very High,” two items rated “High,” and three items rated “Mid-range.” Respondents reported highest degree of productivity at the individual level and high degree of efficiency at the individual “area” level. Respondents reported slightly lower scores for the organization’s performance.

Table 11 revealed six characteristics within an efficient, effective, and productive organization or unit and revealed three central observations. Teachers perceived that both the

organization's and their own ability to generate ideas were novel and useful, as well as efficient. Second, these were effective, and, third, they were productive. In addition, CSH teachers compared their productivity to that from other traditional schools.

Many teachers perceived that both they and the organization were efficient. When teachers found organizational and team efficiency problems, they were allowed to solve them. Teachers expressed how frustrated they were towards the end of the school year with their seniors, since many of them were "pretty much checked out." This problem was solved by presenting 12th grade students with new, relevant, and motivating experiences that re-engaged their interest in learning during the final weeks leading to graduation.

Data suggests that many teachers perceived having freedom and autonomy for making many organizational decisions and they perceived themselves as being more efficient than the organization. One teacher explained that teachers liked to figure out school-wide problems, such as figuring out new ideas during staff development (Table 11.0, row 5). All the teachers were able to contribute and have a say in what and how staff development would be provided to staff to meet the needs of the teachers. However, when teachers did not have total freedom, teachers reported negative aspects about organizational efficiency. An example was that one teacher expressed how top management introduced suggestions from a few teachers whom wanted to include "Collegial Coaching" in order to realize more effective and efficient learning and teaching processes (Table 11.0, row 17). Teachers were paired up with somebody and were asked to create a dilemma or an essential question, and then to engage in peer coaching processes in order to improve teaching and learning processes. The lack of efficiency was occasionally blamed on the organization's lack of accountability. For example, one teacher reported that, instead of having a Wednesday staff meeting, they were asked to observe the other person (Table

11.0, row 17). S/he commented that only maybe one eighth of the staff went in and observed and participated in the collegial coaching. Another example is that a teacher reported that accountability might increase their efficiency and recommended some formal mechanism or system that would hold teachers accountable for what they do and what they use their time for (Table 11.0, row 17).

Teachers perceived that their own content areas and work groups were highly effective and very creative in producing project(s) that were exemplars and showcased both their and the students' ability to design and create innovative and imaginative projects that were useful. For example, one teacher commented that CSH was "Hands down, it's incredible!" S/he explained how incredible and creative CSH was, and that it did not have anything to do with the student projects and that teachers met on a regular basis and shared unusual and creative ideas on a regular basis-at school and after school (Table 11.0, row 6). In addition to their own perception of their area of the organization as being effective, teachers also commented that the organization was effective in students scoring high on National College Board tests. One teacher reported, "You have to believe they are learning from projects effectively. Our SAT scores are an example of effective project based learning."

Many teachers felt that they were very productive and that their students produced incredible projects that were showcased at many community functions, at the state level, and even when top management shared their student projects with the President of the United States. Teachers did not mind spending extra hours over and above their normal work hours to plan, collaborate with other teachers, learn, and design creative student projects. For example, one teacher reported that s/he felt that teachers work harder and longer because they truly liked what they were doing (Table 11.0, row 7). S/he mentioned that s/he would gladly spend 20 hours

planning for projects because s/he perceived the work as “fun.” S/he further explained that her/his work did not feel like work but more like something that “we” get to do.” As another example, a teacher reported that s/he uses PME, which was explained as Planning, Management, and Exhibition (Table 11.0, row 7). Planning was doing the project yourself first, figuring out what you want the kids to do. Management was coming up with a system of how to scaffold it: first part, second part, and then third part. Then you write it down. S/he explained that teachers have it on the computer ahead of time so no one falls through the cracks, and the exhibition was where the project was going to “live” when it was finished, where it is going, and what will happen to it.

In addition, the CSH website lists the following achievements: 100% of graduates have been admitted to college, with approximately 80% admitted to four-year programs such as Johns Hopkins University, Massachusetts Institute of Technology, Stanford University, Howard University, University of Southern California, University of San Diego, University of California at Berkeley, New York University and Northwestern University. In addition, CSH was the first California public school organization authorized to operate its own teacher-credentialing program. This program began as a collaborative effort with a local university, which allows this school to hire, train and certify faculty with deep content knowledge and relevant industry experience, especially in science and engineering.

Teachers were more likely to generate creative ideas when they worked in an environment that called for creativity, and teachers who generated ideas that were both novel and useful believed that they, and their school, were efficient, effective and productive. A creative climate included management practices that expected high levels of production and allowed

teachers freedom to decide their own work project while having a sense of control over their own work (Woodman et al., 1993).

CSH top management expected high levels of production and allowed teachers freedom to decide their own work project and their own work partner. Teachers perceived their work as challenging, important, and they could generate ideas that were both novel and useful and they, and their school, were efficient, effective and productive. One teacher enthusiastically said, “Oh yeah! I am crazy productive.”

Table 11.0

Sample of qualitative analysis of perceived “Outcomes – Productivity”

Categories <i>positively</i> related to perceived Outcomes – Productivity: Interview Data	
<i>Stimulating: had a positive relationship with respondent rating of Outcomes – Productivity</i>	
Overall, this organization is:	
effective	You have to believe they are learning from projects effectively. Our SAT scores are an example of effective project based learning and you don’t see the painful homework but it’s there.
efficient	We like to try to figure out your idea and ways we can we help in staff development, rather than at other school. They would ask what the logistics are and what are all the things that you need to cover. I have power over what I teach, which means I'm going to be more creative. I don’t want to be bored here. I'm not tied to curriculum so it's been more creative we are like artists with a blank canvas in front of us and I get to fill that canvas. We don't fill time here we take advantage of time.
My area is	
effective	Hands down it's incredible! It’s incredible how the creativity that goes in behind these projects ends up taking the students and saying (to them) you know you really are a young adult, you're responsible for getting this accomplished.
productive	Oh yeah, I am crazy productive. I use PME, which is Planning, Management, and Exhibition. Planning is doing the project yourself

Table 11 (cont'd)

efficient	first, figuring out what you want the kids to do. Management is coming up with a system of how to scaffold it first part, 2nd part and the 3rd part, then you write it down, you have it on the computer ahead of time so no one falls through the cracks. Exhibition is where this project going to live when it's finished, where it's going and what will happen to it. I have this planning that I do every time that causes me to be really productive The fact that by May our seniors are pretty much checked out... So rather than fight this battle for the last 6 weeks of school, (we posed the problem) what can we do to harness their energy, what can we do to make it productive? And that's where ender-session came from. The idea is that we all create our own new class. So, I'm not doing math this year, I'm doing a healthy living so we are doing some nutrition, we are doing some exercise, we are going to pick up trash at the beach we're going camping. We are going to do all kinds of different personal explorations about you know life and health and happiness. So from calculus (my subject area), that's pretty much on the opposite spectrum.
Categories <i>positively</i> related to perceived Outcomes – Productivity: Archival Data	
Overall, this organization is productive and effective	<i>School Website–Results</i> 100% of graduates have been admitted to college, with approximately 80% admitted to four-year programs such as Johns Hopkins University, Massachusetts Institute of Technology, Stanford University, Howard University, University of Southern California, University of San Diego, University of California at Berkeley, New York University and Northwestern University. About 35% of graduates are first-generation college students. Academic Performance Index rankings (API) place this school were among the highest achieving in the state. African-American students outperform district and statewide peers by a wide margin vis-à-vis test scores, percentage that take chemistry, physics, and advanced math (100%), and college entry (100%). In 2004/2005 had more entries accepted into the Greater San Diego Science Fair than any other high school. Is the first California public school organization authorized to operate its own teacher-credentialing program. This program, a collaboration with a local university, allows this school to hire, train and certify faculty with deep content knowledge and relevant

Table 11 (cont'd)

	industry experience, especially in science and engineering.
	Opened its Graduate School of Education in 2007, the first graduate school of education to open in California in over 20 years and the only one located within a K-12 learning community. The Graduate School of Education awards Master's in Teacher Leadership and School Leadership to both employees and outside educators.
	<i>California State Department of Education, Analysis, Measurement, and Accountability Division—Web Site: 2010-2011, Met AYP, “At” or “Above” Proficient in all core content areas in all subgroups populations of 30 or more students with the following exceptions: special education, English learners.</i>
Categories <i>negatively</i> related to perceived Outcomes – Productivity: Interview Data	
<i>Inhibiting: had a negative relationship with respondent rating of Outcomes – Productivity</i>	
Overall, this organization is	
effective	While we were discussing math, the math teachers (wanted to pull out of project based learning). I didn't win that argument because test prep argument moved math out and everyone around here knows I still disagree with that. I'm waiting to have those scores come back to see.
	I think we need to create a binder of project ideas so if somebody is struggling the can go through it. Something that there is a product with expectation that people can hit.
productive	For teacher productivity I would argue that ours is almost over productive. We had an all staff meeting recently and one of the people said, “It's okay to repeat a project” because a stigma had developed that we have to be innovative all the time and every quarter do a new project.
efficient	I think one thing that takes up so much time is that you're not given a curriculum. As a new teacher it would be awesome to have someone say, here is your curriculum, but one week later you would be dying to be the designer of your own curriculum. It's something I struggle with and love. That's the one thing I would not give that up. I love that. Compared to another school, if you're set on these tests, these markers you have to hit, I wonder where the room is for creativity if you're just constantly trying to hit each benchmark.
	We were paired up with somebody and supposed to create a dilemma \

Table 11 (cont'd)

or an essential question and approach that person. And, instead of having a Wednesday staff meeting, we were supposed to observe the other person. Honestly I can say maybe 1/8 of the staff went in and observed and participated in the collegial coaching. By nature, we don't like consequences for not participating, so most people said, "It was great." Or, "I got tons out of it" just so we can keep skipping by. There was no accountability... Accountability would increase efficiency; not saying that we have a to be accountable every day for every action and every lesson plan, but (we need) some system that holds people accountable for what they're doing and what they're using their time for.

Research Question # 4 asked how and to what degree do teachers perceive their ability to produce creative outcomes in an organization that calls for creativity? First, how and to what degree do teachers perceive their environment as stimulating or impeding their ability to generate creative ideas and second, how and to what degree are teachers efficient and productive when working together to solve individual, group, and building-wide problems?

KEYS® Survey results reported a narrow range in degree to which respondent perceived resources as encouraging their creativity from high –“Mid-range” to low –“Very High” when compared to other creative organizations that comprised the norm group. Of the 12 items measured in Resources, 25% were rated “Very High,” approximately 50% were rated “High,” and approximately 25% were rate “Mid-range.”

Teachers who perceived their work climate as vibrating with stimulating creativity were more likely to generate creative ideas. Teachers worked on a number of intriguing and innovative projects. Results from both the qualitative and quantitative data support that CSH was a highly creative organization that supported individual, group, and organizational creativity.

CSH top management expected high levels of production and allowed teachers an unusually high amount of freedom to decide their own work project(s). When teachers found organizational and team efficiency problems, they were allowed to solve them. However, when

teachers did not have total freedom in making decisions, they reported negative aspects regarding organizational efficiency and effectiveness. The lack of efficiency and effectiveness was occasionally blamed on the organization's lack of accountability or follow-through on a number of topics, such as when the organization introduced and promoted "Collegial Coaching" but did not hold teachers accountable to engage in the process, thus many teachers lost interest and quit. Finally, the CSH website provides not only examples of student work and allows the public to purchase books, but also many examples of student achievement data to support this evidence.

Chapter Summary

CSH was an innovative school, but like any organization, it was not without problems. When using conservative statistical estimates, respondents reported three survey items "Low" and fifty-nine survey items as "Mid-range" and higher. CSH work climate's effect on creative outcomes was reported as "High" and "Very High" and respondents reported productivity and efficiency as "Mid-range," "High," and "Very High."

Teachers were highly motivated by the freedom to choose their own work projects, their own work partners, and the freedom that comes when an organization was not strictly controlled by upper management. Clearly, teachers enjoyed working with their partner(s) and generating creative ideas for student projects. This was evident in Figure 18 (Appendix A).

Teachers perceived the work climate as a barrier to their creativity when they felt too much pressure. This was evident in Figure 19 (Appendix A). Teachers felt a sense of pressure when, one, they did not have enough time to complete projects, two, felt pressured to continuously produce quality projects, and, three, felt pressure from internal politics, such as harsh negative criticism with the possibility of being dismissed if they became the nemesis of a few senior teachers. Moreover, teachers began their careers at CSH with a weeklong induction

to the organization, but when they arrived at the school, their classrooms were bare of materials and supplies, and there was a lack of management support. Teachers began their journey at CSH with abundant freedom, and, in short order, the expectation was to generate creative and highly esthetically pleasing student exhibitions or face consequences of collegial bullying with the possibility of being deemed “not a good fit”.

Approximately 70% of survey participants selected from over fifty items, the top three factors that supported their creativity, and that data is displayed in Figure 20 (Appendix A). Once again, freedom surfaced as the highest value, followed by their experiences working with their team members, including the high challenge in creative work. While most teachers reported little if any recognition from the school Director, they reported abundant recognition from colleagues, parents and students. One of the school’s owners, on occasion, noticed an exceptional student project and would praise the responsible teachers and make news to the press, and one time sent a project to President Clinton.

Survey participants selected, from over fifty items, factors that inhibited their creativity, and that data was displayed in Figure 21 (Appendix), which revealed the lack of available resources as a major concern. The facility was a rennovated military naval training center and was postioned less than one mile from an international airport, in the flight path of departing jet planes. Small classrooms were separated by glass walls and high-beam ceilings, which were less than optimal spaces for project-based learning. Beyond the need for physical space and materials, teachers wanted more recognition for the school Director. Just as important, teachers wanted postive support and ecouragement from others outside their work team, which could lead to more trust and a greater sense of well-being and a perception of more stability in the work place.

Chapter V: Conclusion

Introduction

This chapter presents a summary of the study along with conclusions and recommendations. This chapter begins by providing a brief summary of the problem addressed and the study design. Second, a conclusion is offered. Results are interpreted in light of the full set of results, the applicable literature, the theoretical foundation used, and the limitations of the study and literature. The discussion includes what the results mean, the possible causes of the results, and the possible consequences of the results. This chapter concludes by suggesting recommendations based upon the results and the applicable literature, with consideration of possible limitations. The implications explain suggestive modifications and possible new initiatives in theory, practice, and policy. Recommendations are made for future research, and from this study, new problems that have become apparent will be discussed. Possible new research questions raised from the results will be presented, and promising conceptual frameworks and methodologies that seem to have potential or should be avoided in the future will be suggested.

Summary

The problem in this study was to determine whether a public school could produce disparate, yet complimentary creative outcomes by focusing on a creative work climate, especially in light of being accountable for student achievement. Creative and innovative pursuits in education seem to be at odds with the traditional pedagogy of teaching and learning in schooling. Chapter One revealed that there have been many well-intentioned educational policies that shaped important determinants of school effectiveness, yet the outcome from these policies caused an unintentional shift in focus away from creativity and more toward those political

agendas that arose from concerns of the time (i.e., student achievement gap-especially between subgroups). Even now, many traditional K-12 teachers go to work knowing that they are required to write lesson plans and teach students the content standards prescribed by federal, state and district policies. Student outcomes are then measured by high-stakes tests that determine level(s) of content proficiency in math, English, science, and social studies. This study makes recommendations for future K-12 school leaders that can design and develop a creative work environment to combine both complimentary components of a highly creative organization, create mastery of student outcomes measured by federal, state, and local policies, and provide students' the ability to gain the creative potential in acquiring 21st Century Skills to compete in the world's global economy.

Creativity values novelty more than conformity, but rather than viewing the relationship between goals prescribed by the current accountability measures of No Child Left Behind and goals suggested by 21st Century Learning as being at odds with one another, another view could be that each approach is complementary to the other. This research study was important, since the major focus was to gain a greater understanding of how creativity emerged in a school work-environment and whether creative outcomes designed by teachers could produce both student creativity and mastery in all core content areas. An important distinction in this study was the unit of analysis in which creativity operated. Without denying the importance of CSH student outcomes, displayed in public exhibitions, analysis for this study took place at the teacher and group levels to examine the creativity that took place as teachers worked in groups and created novel and meaningful thematic, cross-curricular, student learning projects.

A variety of researchers (Amabile, 1996; Beghetto, 2010; Florida, 2003; Kaufman & Beghetto, 2009; Kaufman & Sternberg, 2010; Plucker & Makel, 2010; Runco, 2004; Sawyer,

2007) have noted the need for creativity in the classroom, yet, even today, there remains a need for additional elaboration and empirical testing of those supportive variables within a creative work environment that could help K-12 school leaders the ability to provide and sustain 21st Century Skills to all students. Chapter One discussed many challenges and barriers for those who are interested in participating in designing an innovative school. However, creativity is often misunderstood, undervalued, and federal policy has diverted efforts away from students' creative potentials, and instead, directed efforts toward equalizing student content knowledge. Moreover, most empirical research that investigated work climate effects on creative outcomes focused on private sector work environments, primarily due to the fact that private sectors need to compete in a highly competitive global market to remain profitable and successful.

The research site in this study could hold promise for others who might be interested in researching or designing a school(s) that stimulates those work climate variables necessary for teacher creativity to produce innovative and creative outcomes. CSH teachers were highly creative and focused their creative efforts toward student mastery in all core curricular areas that included high degrees of student engagement and creative thinking, the kind of thinking that could solve complex problems and develop the necessary social responsibility for taking care of our planet. To do that, teachers need a creative climate in which to work with each other in order to make a clear connection between creativity and learning. Without leaders knowing how to build and sustain a creative work climate in schools, K-12 schools will continue to produce student outcomes that are simply measured by test scores without actualizing knowledge to solve complex problems in highly imaginative and useful ways. Research findings from this study add to the current slim body of knowledge on K-12 school work-climates that produce creative outcomes that can benefit all students.

This study investigated teacher perceptions of their work-climate as stimulating and/or impeding their ability to generate creative ideas and innovations. This research suggests a link between teacher perception and a variety of factors derived from management practices, organizational encouragement, and resources (see Glickman et al., 2001; Linklider, 1995; Binkley, 1995; Machell, 1995; Reagon, Case, Case, & Freiberg, 1993). Therefore, this research study was designed to capture the complexities of a creative work climate at CSH. Because creativity is a complex phenomenon (Runco, 2004) influenced by personalities, styles, policies, and people interacting with their work-climate, the decision was made to conduct a field study of a real-life phenomenon in a natural setting to understand the different kinds of teacher creative outcomes and how organizational creativity takes place (Yin, 2008).

This study design was created to better understand those variables within a work climate that have an impact on teacher generated creative outcomes, and to build on an existing, though slim, body of knowledge of bringing creativity to light as a factor in students' welfare (Tierney & Farmer, 2011). In order to see more clearly the complete picture of CSH, both approaches to research, qualitative and quantitative methods were employed. This research approach studied the phenomenon within its natural context and defined themes, constructs, and characteristic features (Creswell, & Gall, 2003; Borg, & Gall, 2003). In this single case study, quantitative results from the KEYS® survey items measured the degree to which teachers perceived their work climate as stimulating or impeding their creativity. Survey responses were standardized and compared to the KEYS® norm group, which consisted of other highly creative organizations from several types of industries. Qualitative research in this study measured how and why teachers perceived their work-climate as having a positive or negative influence on creativity

(Crouch & McKenzie, 2006), and investigated other data sources for accuracy and alternative explanations in order to generate an accurate picture of CSH's work climate (Stake, 1995).

Conclusions

This single case study of a high school work environment investigated whether those characteristics measured in the work-climate produced teacher generated creative outcomes. Research findings at CSH suggested that a school work-climate was capable of producing creative outcomes for the purpose of solving organizational problems. In fact, when compared to the group norm in the KEYS® survey, which was comprised of a variety of highly creative companies, CSH survey respondents reported generally higher degrees of perceived positive work climate effects on their creativity. Of the 78 survey items, only three were perceived as “Low,” and all other survey items were perceived as “Mid-range” or higher. In addition, during teacher interviews and observations, teachers reported positive comments about how and why they perceived their work climate effect as being stimulating. Moreover, teachers believed their outcomes were more creative than their traditional school counterparts. However, teachers also reported some negative perceptions and some barriers to their ability to produce creative work.

Three research questions asked the degree to which work-climate characteristics (Management Practices, Organizational Motivation, and Resources) effects were perceived as stimulating or impeding, as well as how and why teachers perceived their work-climate as positively or negatively supportive of their creativity. The fourth research question asked teachers to describe their creative outcomes and examined their beliefs about their ability to generate creative ideas efficiently and productively when working together to solve individual, group, and school-wide problems.

Research Question 1

Question #1 asked about management practices that provided freedom, challenging work, managerial encouragement, and work group support. Respondents reported results measured by the KEYS® Survey in descending order of dimension mean score: Freedom –“Very High,” Work Group Supports –“Very High,” Challenging Work –“High,” and Managerial Encouragement –“Mid-range.”

Qualitative data was analyzed for affective as well as perceptual effects of management practices. CSH was a relatively new organization and was selective in hiring their teaching staff comprised of creative individuals. Teachers were selected, in part, based on a willingness to work on difficult and challenging projects and not necessarily on how many degrees they held. CSH teachers were intrinsically motivated by the challenges inherent in creating complex, authentic questions and carefully designed tasks that resulted in thematic, cross-curricular learning projects. A teacher spoke, in the vignette in Chapter One, about how students were allowed to sail on the Star of India and learned how to hoist the sail, wrote and learned about the lives of both the passengers and crew that sailed the ship hundreds of years ago, and explored the ocean life.

One unexpected finding was the amount of freedom and autonomy that was given to teachers. The school Director gave teachers freedom that was embedded in intrinsic motivation, which was derived from personal, autonomous efforts. CSH teachers had control over many decisions, from operating the school, such as the school calendar, and had control over their work and task design or project selection. CSH teachers provided many positive accounts of how they found their work interesting and enjoyed coming to school each day. However, teachers were not given unbounded freedom; they were accountable to the goals of the organization. At CSH, the student exhibitions created the need for teachers to conform to the extent that they had

to design and collaborate with their work partner(s) in creating project based learning activities and projects.

Although CSH teachers reported that designing, creating, and anticipating learning hurdles in student projects was challenging and time consuming, they were self-motivated and determined to put forth their best efforts. CSH teachers persisted and gave countless hours of personal time to design and construct exemplar student projects. Teachers at CSH were excited about these challenges and perceived they were working on important projects. Many teachers reported feeling pride in their work, which brought out their need to want to do their best work.

Creativity research emphasizes requisite skills that creativity leaders need, such as having wisdom, being dynamic, encouraging, and an empowering leader, yet it was surprising to learn from the data that teachers did not support that view in their Director. In fact, in some arenas they perceived their leader as relaxed and comfortable in allowing the teachers to make many decisions about their work. The School Director was relatively new to school leadership and came to the position of school Director as a teacher who was promoted from within. CSH teachers reported that their Director lacked the requisite task-oriented leader behaviors needed to develop an innovative and creative work climate conducive to creativity. Effective goals were not provided and there were no clear expectations. Additionally, many teachers commented that in the previous year, two teachers were fired because they were deemed unfit, yet there was no formal evaluation provided. On one hand, some teachers were relieved because they no longer had to work with toxic people. On the other hand, some teachers who were both new to the school, and those who had worked at CSH for several years, felt anxious and wondered if they were next in line because they worked in an environment based on the cliché “no news is good news.”

Most CSH teachers reported positive perceptions when their Director engaged in relationship-oriented behaviors toward either individual teachers or with their work groups. Relationship-oriented behaviors occurred, for example, when teachers reported their school leader was a good work model. On one item survey, “My boss serves as a good work model,” teachers rated the Director as “High” because the leader demonstrated to the rest of the organization, during staff meetings, that creativity was a personal priority. In addition, the teachers perceived that the Director was open to new ideas, and on occasion, acknowledged success or showed empathy for those who were having a bad day. Even so, creative outcomes were produced at CSH in spite of the lack of the provision of leader task orientated behaviors in their Director.

CSH management encouraged teacher creativity by allowing teachers to work in work groups. CSH creative group work was a complex process and was much more than a simple gathering of teachers coming up with new ideas. Individuals and groups brought their creative talents and ideas with them and engaged in creative processes. Teachers worked together and linked ideas from multiple sources, delved into unknown areas, and found better or unique approaches to a problem. CSH teachers selected their own work partner from different teaching content domains, which naturally created diversity within the group. High levels of commitment to a team project were reported and teachers perceived high levels of trust with their work partner, and data suggested an open information flow existed. By working with partners from both complimentary and cross curriculum areas, the teachers exposed themselves to a variety of unusual ideas, such as the “Chemistry in Conflict” project discussed in Chapter four, which increased the teachers’ intrinsic motivation to challenge themselves and to experiment in developing new pathways of learning, not only for themselves but also with their students.

The CSH Director and upper management engaged in efforts to create a work climate conducive for innovation and trust. CSH teachers choose their own partners, and, because of a shared interest and commitment, teachers perceived a sense of team psychological safety and established a high association of creativity. Positive reports included that partners were consistently and openly provided and received team member constructive feedback and that trust was high within the work groups. CSH work-groups created and delivered curriculum that resulted in stunning and provocative student exhibitions. Additionally, they created solutions to resolve task-driven problems, such as in the “Ender Session” project with seniors. CSH team members had confidence that their fellow group members would act in accordance with accepted standards of conduct and fairness and their trust was based on the team member’s belief that each of their team was highly competent and could accomplish its task and would not harm the other teacher. Many teachers stated not wanting to let their partner down, which in turn challenged them to continue a project even when they were experiencing frustration and duress, as in the project with building the wooden chairs cited in Chapter Four.

Research Question 2

Question #2 asked about organizational motivation that provided organizational encouragement and the lack of organizational impediments. Respondents reported results measured by the KEYS® Survey in descending order of dimension mean score: Organizational Encouragement as “Mid-range” bordering “High”, and Lack of Organizational Impediments as “Mid-range”.

The qualitative analyses revealed both positive and negative affective and perceptual reactions to organizational motivation, shedding further light on the quantitative data. As previously stated, teachers were provided unusually high degrees of freedom and were largely

held accountable to organizational goals measured by their ability to design student projects that were novel, meaningful, and aesthetically pleasing. Teachers reported that upper management designed and implemented a number of mechanisms to allow for teachers to design consistent, and high quality student exhibitions that reflected positively on the organization's reputation. CSH reputation grew and student exhibitions were recognized throughout California as well as in the local media, and many referred to the school as a "rock star" with "rock star" teachers, which served as a powerful marketing mechanism. Because California law directs parents to enroll their children in neighborhood schools unless they enroll in a charter school, CSH needed to attract parents who wanted their children to experience a liberal arts education. Enrollment quickly outgrew school facility capacity and children were often placed on the waiting list. One climate effect was the development of cultural norms where self-assigned pressure to produce substantive and impressive student exhibitions was felt by CSH teachers. Some teachers reported feeling proud to be part of the organization while others reported feeling overly pressured.

Emotions ran high at CSH, and teachers described the entire process of designing projects, constructing a model for students, and preparing curriculum similar to what coaches do when preparing student athletes for public competitions. Some teachers perceived the work climate as competitive, while others felt they were all on the same team, doing whatever it took to produce a winning exhibition. Because the organization highly valued these public displays of student work, the organization did whatever was necessary to encourage teachers to develop novel and useful ideas for student work and removed many organizational barriers that stood in the way.

Ideas were encouraged even if they were bad and people were allowed to fail on occasion, as long as they were not repeat offenders. Many teachers reported that, when they first

came to the school, they hesitated to share their own creative ideas and work challenges with others because it felt risky. Once teachers realized that taking risks was encouraged and safe, they tried out their new ideas and, most often, found support from their colleagues and their school Director. Soon after the new teachers arrived, risk taking seemed to be a natural part of the job and some teachers reflected on this transformation during their interviews with the researcher. Some teachers wondered out loud how they would solve complex problems that came from designing student project based learning without risking and receiving support from their team members.

Creative ideas flowed on a daily basis within the work team, and there were two seasons at CSH for sharing ideas. Teachers would “pitch” ideas for student projects to other teachers during the annual spring “Pitch” meeting. Teachers who found an idea fascinating or shared a similar interest and who had specific domain content knowledge in another curricular area would ask to partner and develop a thematic student project for the following semester with teachers in different curricular domains. Another season for pitching ideas happened around the winter holiday break and was referred to as “Inter-session.” Rather than pitching ideas to teachers, ideas were pitched to students. The two weeks following winter break, teachers and students would explore ideas and projects that caught students’ interests. All their work culminated in the form of a student exhibition.

An exhibition was typically followed by a celebration where students, parents and teachers recognized others’ efforts. For many teachers, the intrinsic motivation derived from their freedom and autonomy and the challenge they found in their work, which was reinforced by the lavish amounts of recognition they received. While, many teachers reported their disappointment in their Director for not providing recognition for their creative efforts during the

design process, or after a successful student exhibition, they were very aware of other forms of motivation provided by the organization as a whole.

Procedures were very informal and the organization was loosely controlled. Teacher attendance at regularly scheduled faculty meetings was optional and many arrived late while others left early. If an idea about an ineffective or inefficient school operation was brought to everyone's attention, teachers were encouraged and supported in coming up with a solution. Because of this ability for teachers to make changes, student schedules were developed by teachers and thus semesters ended at different times for different grade levels based on the need that teachers wanted more time to work with students on their projects particular to that grade level. Another change teachers made was due to the desire that teachers wanted to have more connections between academics and the student work experiences they had outside of school, therefore the teachers made the decision to phase out the work experience coordinator position to allow 11th grade teachers to take over the responsibilities. Many management activities typically assigned to teachers in traditional schools were removed from the CSH teacher job responsibility list, such as not having to ask permission to take students on field trips, and teachers were not required to turn in written curriculum such as lesson plans, pacing guides, or goals that were aligned with state standards. CSH management provided the mechanisms to motivate teachers by encouraging ideas, risk taking, and for providing opportunities for teachers to receive recognition because upper management was enthusiastic about student exhibitions, therefore many impediments were removed, such as red-tape and bureaucracy so teachers could focus on the creative work at hand, however, CSH was not without its problems.

One teacher was repeatedly mentioned in Chapter Four, referred to as Austin. Austin had a personal relationship with one of the charter founders and was perceived by many as a force

with which to be reckoned. Qualitative data sheds light on survey items reported, “Low” by describing Austin’s influence on the work climate. Teachers reported highly valuing Austin as a team member because student projects were consistently stellar, but teachers outside his/her team reported certain degrees of fear toward him/her.

Austin posted on his/her personal website-blog, hosted on the school website, many successes, including student projects and his/her preferred pedagogy. It was no secret that Austin was perceived as “the whip” and teachers reported that when other’s pedagogy strayed from Austin’s preference, they would be verbally whipped into submission. Even Austin admitted to this behavior and stated s/he was trying to be nicer but, after all, the organization was not built to meet teacher’s needs. The organizational purpose was to meet student’s needs. One teacher reported being extremely upset by one of Austin’s tongue-lashings over the use of rubrics. Austin reported that people who worked in ivory towers designed rubrics, and rubrics should only be used inside those towers, not in the learning and teaching process that took place inside an innovative school. This teacher stated that s/he threw the rubrics away and planned a new way for teaching student projects the way Austin prescribed.

Many teachers reported how politics emerged from what was generated by Austin and the unnecessary pressure on others to perform. If teachers became a repeat offender of producing average student exhibitions, they were subject to becoming Austin’s nemesis and several teachers mentioned that two teachers were fired during the previous year due to problems with pedagogy and problems with their relationships with Austin.

Other quantitative data offers additional insight to this finding that the work climate was sometimes an obstacle, as reported in Chapter Four. Over half the teacher respondents to the KEYS® reported working at CSH for less than five years, suggested a high rate of teacher

turnover. Due to teacher perceptions that the top management failed to minimize or diminish teachers' intrusions into others' work, they identified such behavior as an impediment to creativity, such as preventing political problems mentioned above. The work climate effect produced creative outcomes but did not ensure stability, thus thwarting continuity, flexibility, and ingenuity. Moreover, teachers reported feeling burned out, frustrated and anxious toward job security, along with the lack of leadership support from the school Director.

Teachers expressed their desire to receive an annual evaluation to minimize anxious feelings from working in a “no news is good news” system. However, the entire charter organization resisted development of an evaluation system for any of their schools. Teachers reported a need to protect their territory because of their fear of receiving harsh criticism and unfair judgments on their work performance. Just as important, teachers seemed divided on what constituted effective practice.

A mission and vision statement was posted on the website and teachers new to CSH attended a pre-employment workshop that introduced them to the organization's design principles. However, those principles were short lived and teachers reported the lack of a shared vision. One of the most senior teachers described a Socratic seminar, a time when CSH teachers came together to discuss organizational changes and challenges. It was a time to reflect on what the organization was truly about as well as a time to make important decisions on solving school wide problems. This teacher voiced his/her disappointment in the newer staff because they outvoted the more senior staff and supported the math department's request to be excused from project-based learning. The request was based on reports that graduates were not succeeding in math taught in higher education settings. While the argument supported student success, it was not well received by senior teachers and they reported that it was a matter of time before things

changed back to the original design principles. In spite of the problems, including the lack of school leadership, the work-climate continued to produce creative outcomes that manifested in student work that required students to acquire necessary knowledge and develop their creative potential.

Research Question 3

Question #3 asked about sufficient resources, and realistic workload pressure. Respondents reported results measured by the KEYS® Survey in descending order of dimension mean score: Sufficient Resources –“Mid-range” and Realistic Workload Pressure –“Mid-range.”

In the qualitative analyses, data were analyzed for affective as well as perceptual effects of management practices. Generally CSH teachers believed they had sufficient access to the school budget and, like many teachers across the United States, CSH teachers want more consumable and non-consumable supplies. Teachers who came to CSH from the private sector seemed to be more aware of budget restrictions than teachers who were either new to the teaching profession or came from a traditional public school setting. Although many teachers reported a lack of necessary funding to purchase the kinds of materials teachers wanted for their students to utilize in the creation of their project(s), many teachers were motivated to find the money in other ways. Teachers asked for and received donations from outside vendors, grants, or simply by asking parents to contribute. However, many teachers reported negative feelings toward their work environment.

The CSH facility was renovated from an old Military Training Center. Therefore, the rooms were smaller than traditional classrooms and many of the adjoining walls were made of glass. Teachers reported being distracted when working inside glass-walled classrooms. Not only were learning and teacher processes in adjacent rooms noisy from student chatter, but also

attention was often shifted to students in the hallways. Another concern over facilities was having enough room to build projects, such as when one teacher had students build wooden chairs. S/he needed to create a tent over the room to prevent dust (generated from the table saw) from getting on the desks.

Teachers at CSH reported the lowest rating as having too much work to do in too little time. Teachers who had been employed at CSH fewer than five years felt there was an unrealistic time pressure to produce exceptionally high quality student projects, especially in light of designing new curriculum. Those teachers reported that they woke up in the morning preparing for work and did not go to bed until late at night preparing for work and that it was “all consuming” and seemed to “take over their life.” Many teachers at CSH did give hours of their personal time to overcome time constraints in the design of complex student learning activities. Reported results provided that, given the condition where an expectation existed for a continuous stream of creative outcomes that manifested in the form of student exhibitions on public display, a few teachers at CSH, within the constraints of limited time, did, at times, suffer self-efficacy to continue to persevere.

Research Question 4

CSH teachers believed that their school was an innovative school and that individuals and work groups produced creative outcomes. Others believed CSH was a creative place as well. In fact, CSH was nominated as a potential research site because of its reputation for being a creative school by professors and practitioners in California and the Pacific Northwest. However, the assessment of creative outcomes is generally conducted by outside experts in various creative domains and the purpose of this case study was to investigate whether teachers perceived their

outcomes as creative rather than investigating whether outcomes measured up to levels measured by experts. However, KEYS® results offered validity to teacher perceptions.

In an effort to more directly determine the agreement between creativity and the environmental factors assessed on the KEYS® survey, a trend analysis for each of the environmental scales was performed. In these analyses, respondents' creativity scores (means on the Creativity criterion scale) were mapped against their mean score on the particular environmental scale. The trend patterns for 7 of the 8 environmental scales match well with the labeling of the scales as Stimulants to Creativity or Obstacles to Creativity. Each of the six Stimulants to Creativity scales showed a clear positive slope, with creativity increasing as the frequency of the stimulant in the work environment increased. Creativity is not only about outcomes, but is also about process, about how one does on a task (Richards, 2010). Teachers reported being engaged in processes of problem finding and problem solving described by creativity researchers (e.g., Okuda et al., 1991, Hu et al., 2010).

CSH teachers compared their productivity and efficiency to other schools as well as the reported characteristics that might be inferred as having a high level of creative efficacy. There can be little doubt that CSH was not a perfect organization and impediments, such as fear of being fired and having heavy workload pressures served as obstacles to individual and team creativity. However, minimal number of reports provided other negative data regarding creative outcomes. CSH management expected high levels of production and allowed teachers freedom to decide their own work project and their own work partner. Teachers perceived that their work was challenging and important, that they could generate ideas that were both novel and useful, and that they, and their school, were efficient, effective and productive.

Teacher creativity and productivity was manifested in their student creativity and productivity. Numerous books published by the students on their student projects were displayed on the school's web site. The creative outcomes of these published books showed to others the exceptional academic as well as social constructs in which students were engaged. For example, after students completed extensive individual and group research on current and ancient aspects of Mayan culture, students wrote and illustrated a children's book, *A-Z: What We Learned about Mayan Culture*. Each student was responsible for creating his/her own page with illustrations that contributed to the class book. The book was written in both Spanish and English, and students not only produced the book, but also had to promote, publish, and sell the book, operating as a business with committees and job positions. All proceeds from book sales were sent to impoverished school children for a year in the Mayan towns near Lake Atitlan in the highlands of Guatemala. One of the CSH founders met with President Obama and gave him this book to show the President one of the creative and socially meaningful products that students, when given the opportunity to be creative, could produce.

Summary

CSH was an innovative school in which the work-climate effects produced teacher generated creative outcomes that were both novel and useful to their school's needs. While teachers perceived their outcomes were more creative than other traditional schools, many of the contextual influences on the work climate mirrored contextual influences of traditional schools. One might expect that a highly creative school might look different and have fewer restrictions than a traditional school, yet the CSH school building was not fancy by any stretch of the imagination, teachers worked within the same budget constraints as their public school counterparts, and the school complied with federal and state policies regarding student

achievement. The assumption that CSH might have attracted parents with a higher social and economic status was false and students were selected in a manner that was reflective of the population of the city in which this research was conducted. The school Director explained that the school had a lottery system for student selection to ensure equal access. The only weighted advantage a student could secure was the number of times s/he applied for enrollment but failed to be selected. Each additional application resulted in a heavier weight in what was otherwise a random selection of students from each race, academic standing, and economic status.

The school Director and teachers rarely talked about aligning their mission, goals and objectives with those expressed in federal and state laws, yet they fulfilled their legal responsibility by giving to students the annual state student achievement tests, though they largely ignored the results. However, CSH not only made Adequate Yearly Progress, as measured by NCLB, students scored high on the College Board SAT exams. Teachers reported that, with management's provision of freedom came an incredible responsibility to generate creative and challenging student projects. Also, teachers were provided freedom to, as one teacher said, "run the school." Several teachers reported that the rigor and challenge found in student project based learning provided a natural link with the state's standardized curriculum, so there was little need to concentrate on those state standards when students were engaged in highly critical thinking and other skills that exceeded the "proficiency" of state standards.

Finally, instead of spending effort and resources to bring all students to a level of mastery or proficiency on state tests, effort and resources were provided to produce high quality learning experiences where students were motivated to solve complex problems in numerous creative ways. Students did not only master state, federal, and college content knowledge, they also

increased their creative potential and learned to solve complex problems in imaginative ways, the same knowledge required to successfully thrive in the 21st Century.

Theoretical Foundation

This study was designed and carried out based on the principal foundations from two theories of creativity. The first, Amabile's (1988) theory of creativity and innovation includes three components of a work climate: management practices, organizational motivation, and organizational resources. With the componential theory of organizational creativity Amabile (1988, 1997) provided a general framework to understand the perceived work environment effect on individual and group creativity. The second, the systems theory presented by Woodman et al. (1993) introduced the perspective of interactional psychology with the integration of person, process, situation and product into a comprehensive theory of organizational creativity. Woodman et al., (1993) and Amabile (1988) suggested that contextual and social influences make up a work climate and climate effects produce creative outcomes. Additionally, both theories explain human behavior in complex social settings. Woodman et al., (1993) was important to this research because it explained how creative efficacy is enhanced by interactions within a nested set of creative outcomes. Creative outcomes at the individual, group, and organizational levels have reciprocal influences, which influenced creative efficacy. This current research suggested that a creative outcome was a response to how teachers perceived contextual and social influences. Also, creative outcomes positively influenced creative efficacy as more and more creative outcomes were realized within the organization.

Limitations

One inherent limitation in this single case study of a secondary school work climate is research findings account for a unique setting and results may not be generalized to other school

settings. The numbers of participants (n=30) in this research met the guidelines published in the KEYS® User Guidelines, but were not large enough to make general conclusions for all schools. The school site was a relatively new organization and hired teachers with creative dispositions. Research findings may be more relevant to newly created schools that are able to hire a number of creative employees, but most schools are older organizations with teachers whose tenure is protected by law and rate of employee turnover is typically slow. Because the research site is a charter school, contractual matters are not subject to grievances as a remedy for solving problems concerning pay and working conditions. Additionally, laws and policy change from state to state and part of CSH's success was based, in part, on laws that govern student enrollment and the level of school autonomy for charter schools. California allows charter schools freedom to determine what curriculum is offered, the amount of instructional time, the length of the school year, and hire people who come to the teaching profession from the private sector without first securing a state approved teacher license. Thus, a limitation of the study is the contextual influences in the form of state policy from California. Finally, data was collected during the regular school year, and the researcher was not afforded the opportunity to observe teachers working in groups as they designed student projects. In addition, the seasons for pitching ideas had already transpired and no observations of these were recorded.

Limitations of literature. Research on creativity is growing and is becoming increasingly more fragmented (Hennessey & Amabile, 2010). KEYS® survey measures 78 variables, some of which have not been fully explored by creativity researchers. The body of knowledge that examines work impediments, in particular, is slim. Additionally, Mathison and Einarsen (2004) reviewed instruments for assessing creative and innovative environments within organizations and, while KEYS® survey items were reviewed, a critique was not offered. After a

thorough search of the university electronic library resources and the World Wide Web, a scholarly critique of KEYS® was not available.

Limitation of theories of creativity. Two theories of creativity were used as the theoretical foundation for this study. The first, Amabile's (1988) Theory of Creativity and Innovation included three components of a work climate: management practices, organizational motivation, and resources. The second, the Systems Theory by Woodman et al. (1993) introduced the perspective of interactional psychology with the integration of person, process, situation and product into a comprehensive theory of organizational creativity.

Recommendations

For Practice

Results from this study suggest a common sense approach to creative leadership that will require a change in what school administrators traditionally think about and are currently able to do. Principals who want to become leaders of innovative schools will need to learn new skills and abandon old behaviors in order to positively influence a work-climate that supports teacher creativity. Many creativity researchers agree that the leader of any organization is the primary determinant for climate creation and the school's capacity to increase students' knowledge and their creative potential will largely depend on the leaders creative potential and willingness to learn. Because a creative work-climate is comprised of a multitude of variables from several bodies of knowledge, principals will first need to merge familiar discourse with other codified languages used in other epistemologies.

Merging epistemologies. Creative leadership requires principals to fluently converse in several fields of inquiry, some of which include organizational development, instructional leadership, individual and collective creativity, a psychological climate, and motivational theory.

Supplementing school leadership discourse with psychological discourse is necessary for school principals when creating a psychological climate necessary for teacher creativity. The CSH Director was interested in a psychological climate and concerned himself/herself with a psychological discourse grounded in basic human needs. Findings from this study suggest that the difference between creating conditions for school improvement and meeting basic human needs was the difference between the kinds of outcomes CSH teachers were able to produce. One important example of meeting basic human needs from this study was the vital role freedom played in motivating teachers to generate creative ideas that produced unique student learning opportunities. Scaling this phenomenon will necessitate principals of other schools to understand the psychological underpinnings that motivate teachers to develop novel ideas that are useful in meeting their organizations' goals and objectives.

Freedom. KEYS® survey reported unusually high degrees of CSH teacher perceived freedom to decide what projects to carry out, how to accomplish the work, and having a sense of control over project development. Motivational theory explains why the survey results proved to be such an important lever for intrinsically motivated teacher effort directed toward creative work including Self Determination Theory, freedom, autonomy, and self and creative efficacy.

CSH teachers had complete freedom to choose their work projects and were encouraged to follow their passions when selecting student-learning projects. Qualitative data from this study showed that regardless of coming to CSH from the public or private sector, teachers were competent in domain specific subject matter that was interesting to them. In turn, they pursued goals that were intrinsically satisfying. With the provision of autonomous motivation, CSH teachers perceived having considerable control over their work and when they developed strong professional relationships with work partners, they felt a sense of belonging that was satisfying

and increased their self and creative efficacy. Deci and Ryan (2000) suggested that Self Determination Theory explains that each of these psychological conditions lead to a high degree of intrinsic motivation and a higher sense of wellbeing.

CSH teachers reported several accounts of intrinsically motivated behavior because they perceived the provision of freedom and autonomy. Teachers were provided time to pitch their creative ideas and partnered with other interested teachers in designing thematic project-based learning. Some teachers reported giving precious personal time and resources in order for students to learn how to creatively solve problems as they struggled with the complex tasks of carefully designed curriculum. Examples of these innovative projects were described in detail in Chapter Four and included: Chemistry in Conflict, the Star of India, the Blood Bank Project, and several others. Because they had complete freedom and autonomy, they persevered and produced creative ideas and innovations that made CSH the unique school worthy of its positive reputation as an innovative school. All this implies that the school principal must provide the investment in freedom as a motivator, which will result in teachers solving problems that are important to the organization, especially on complex tasks that involve deep information processing and creativity. School leaders need to support teachers by taking their perspective, encouraging a sense of choice, and being responsive to their thoughts, questions and initiatives (Deci & Ryan, 2008). When teachers feel supported they considered the relevance and importance of goals for themselves and others (Bandura, 1997). Principals who understand how and why providing teacher freedom to choose what they will teach and giving them control over how they plan, prepare, and engage with students will require a departure from the kinds of thinking most school leaders are engaged in now. Instead, school leaders need to focus their behaviors away from

spending time holding teachers accountable to mandated curriculum with interventions based on intermittent observations and proportion of students passing mandated tests.

Tension between intrinsic motivation and goal oriented behavior. Brophy (2004) described the motivational challenge in schools as constantly finding an optimal balance between intrinsic and extrinsic motivation. However, most creativity researchers agree that extrinsic motivation serves as an impediment to individual and collective creativity. The practical issue of concern for principals is to stimulate teacher creativity through intrinsic motivators and eliminate the moderating effect extrinsic motivation has on creativity. The CSH Director expected teachers to generate creative student learning projects by teaching content around what the teacher was passionate about, as well as to participate in highly attended public exhibitions. Some teachers reported feeling stressful over the constant need to develop substantial student learning projects that were aesthetically pleasing while other teachers reported positive perceptions from showcasing student work. Many teachers received recognition for their hard work from students, parents, and colleagues, which served as additional intrinsic motivation for creating future projects.

The principal who is interested in leading an innovative school will have to design novel and meaningful activities that help direct teachers to meet the school's mission and vision and abandon traditional practice that could impede creativity. Many unintended consequences of NCLB policy were discussed in Chapter One and research is clear that teacher creativity has been thwarted as a result of perceived surveillance, loss of control, and on evaluations based on state and federal student scores in core content areas. Replacing easily accessible extrinsic motivators with intrinsic motivators will be challenging, especially when the principal does not have the requisite knowledge and skills in creativity and motivational theory. Learning new

behaviors and changing beliefs about leading innovative schools will require professional development that might not currently and readily be available.

Evaluation tools. Several problems became apparent in this study, of which many could have been solved if CSH teachers and the school Director participated in an evaluation process. A formal evaluation for CSH teachers was missing and several teachers reported that they did not receive positive or constructive feedback from their school Director. Staff bullying and other dysfunctional teacher behaviors were rarely minimized, and according to the research in Chapter Two, these behaviors are likely to occur in other schools as well. A new school policy should include a teacher evaluation tool that informs teachers about their behavior that impacts the work climate and at the same time the evaluation should be perceived as fair. Additionally, teachers who want to voice concerns toward their principal and colleagues should have a mechanism to do so to feel safe and free from repercussions.

Social influences are an important determinant of a creative work-climate and teachers and school leaders will benefit from feedback from others within the organization in order to better determine if their intentions are in alignment with others' perceptions. Evaluations perceived as fair and helpful, will provide the intrinsic motivation necessary for creativity. One method for providing feedback is referred to as Three-Hundred-and-Sixty Degree Feedback. Three-Hundred-and-Sixty Degree Feedback is a multi-rater feedback, upward appraisal, co-worker feedback, multi-perspective ratings; and full-circle feedback are names used to describe the process of gathering information and feedback from individuals at multiple levels of the organization.

Because social influences have a potent impact on teacher perceptions, feedback should recognize this complexity by providing input from different sources. In this case, teachers rate

themselves and compare self-assessment to assessment from others, including the school Director, colleagues, and students. Raters need to understand their feedback is anonymous and would be confidential. When rater feedback is anonymous, and the data confidential, feedback is more likely to be used for developmental purposes, particularly if scores from groups of individuals contain differing information. Confidential feedback provides autonomous motivation, and when employees reflect and self correct behavior, levels of perceived self-efficacy increase. Conversely, if people believe their feedback will be used for performance evaluation, perceptions might change: in fact, friends might pump up scores and rivals might become negative or lukewarm. All this implies that principal initiated evaluations are important and will be positively perceived when the feedback is helpful. Three-Hundred-and-Sixty Degree Feedback can complement the annual evaluation process from the principal, and when the process is carefully designed and implemented, social problems might be minimized, which will provide a more supportive work-climate.

Limit procedures and minimize problems. School principals who want to provide teachers with the freedom necessary for creativity do not need to get out of the teacher's way, rather they should remove or minimize impediments that are perceived by teacher to be in their way. Principal behaviors are typically enacted to move processes forward in order to accomplish important school-wide goals, yet many creativity researchers suggest that removing impediments is equally important. Several CSH teachers reported positive perceptions of the lack of bureaucratic red tape, which resulted in fewer distractions from creative efforts and learning and teaching processes. Principals need to work with their school district office to reduce required but unnecessary forms and paperwork. They will have to look at their internal operations and minimize student supervision during non-instructional time. CSH teachers who had previous

teaching experience in traditional school settings reported how nice it was to not turn in lesson plans and develop pacing guides for state mandated curriculum. Several teachers also positively reported the lack of unnecessary school-wide meetings.

However, KEYS® survey also reported the lowest standardized score as having too much work to do in too little time, which was perceived as an impediment to their creativity. School principals need to be sensitive to workload pressure when leading an innovative school. They need to remember creativity is most often a slow process and teachers need enough time to continuously produce creative student projects and provide the school community with high quality student presentations. Finally, schools leaders who avoid necessary action contribute to work-climate impediments. When expected and necessary action is missing, the consequence can be perceived just as negatively as premeditated harmful actions. CSH teachers reported several accounts regarding a lack of recognition and helpful feedback from the school Director. All this implies that principals who are interested in teacher generated creativity need to work with the district office, look at their internal operations, and look at themselves and remove unnecessary policy, routines and behaviors that will be perceived as an impediment to the creative process.

Ten ways principals can cultivate creativity by balancing organizational tensions.

1. Commitment to organizational goals is more enduring than compliance. Act on the belief that teachers are willing and capable of providing self-leadership, the intrinsically motivated behavior necessary for creativity because interventions from above with threats of sanctions will necessitate compliance but not necessarily commitment. Commitment also provides hope for the future. Schools are future oriented organizations and having a sense of hope for a brighter future and an enduring belief in the goodness of people and the organization will help ensure that today's students could become good stewards of the earth when we

retire.

2. Tap creative ideas from multiple sources. Traditional leaders often believe they are the lone inventor whereas innovative leaders are open to new ideas and believe the right ideas come from diverse people with diverse perspectives. Principals of innovative schools also hire the right kinds of people; teachers who have creative dispositions including being open to new ideas. Effective principals are appreciative and empathetic and ask questions in ways that provide for several right answers.
3. You can't buy organizational creativity. Earning a salary may motivate a teacher to find a job, intellectual challenge, freedom, and high expectations will motivate a creative teacher to stay on the job. Teachers who work in a creative-environment will accomplish important creative work and persevere through the challenges such as lower salaries, less benefits, fewer resources, poorer facilities, and longer work hours.
4. Provide the right amount of resources. Resources are needed to perform a job, but not having everything that is needed and readily at hand may stretch employees to think of different creative or innovative ways of doing things.
5. Provide multiple and meaningful reasons for teachers to meet. Professional learning communities are often formed to improve and scale specific instructional practice while work-groups for creativity provide support such as constructive feedback and a good blend of skills.
6. Create nested sets of expectations. What ever the organization expects from its students, the same expectations should be applied for its teachers. Students who

learn in innovative schools encounter and struggle with complex questions and carefully designed tasks and teachers who prepare those learning experiences should first create models and solve the same problems themselves. When teachers struggle as they solve these kinds of problems, they naturally create a classroom climate that stimulates student creativity and remove unnecessary obstacles that slow down the learning process.

7. Develop trust and support with and between your teachers. The safety to fail is as important as the recognition for success. Effective creative leaders are vigilant when looking for simple and often private interactions with teachers that are reassuring as well as reinforcing what they are doing is important to the organization. Avoiding these interactions often lead to negative affective and perceptual responses such as feeling unappreciated and that the principal is uncaring and non supportive.
8. Carefully designed processes mean not beginning with the end in mind. Problem finding is one of the most important processes for creative ideation. The manner in which the problem is framed determines how the problem will be solved. Skipping this important step often leads to convergent processes and lead to a single answer, but not necessarily the best answer(s).
9. Reduce organizational hierarchies. The need for control has to give way to the need for participation and effective principals count on the contributions of many. Schools have come a long way and many effective schools provide for distributed leadership and allow teachers to control sub-units in the organization and creative leadership goes a step further by relying on teacher self-leadership.

10. Communicate high expectations for multiple outcomes. Creative outcomes and content mastery are not necessarily in conflict with each other. When teachers perceive their work-climate as supportive to their creativity, they will naturally produce both outcomes

For Further Research

This study provided evidence for a school that has the capacity to produce student knowledge and student creative potential. Another important contribution was the discovery that a creative work climate has strength and vitality. One creativity researcher was quoted in Chapters two and four when she stated creativity gets killed more often than it survives. Creativity may be particularly vulnerable in the early stages as people come to work and are reluctant to risk and fail, generate ideas that are both good and bad, work closely with a partner, where criticism is given and received, and use unusually large amounts of freedom and autonomy. However, as employees adjust to this new work environment, efficacy grows, and, in this case, student creative outcomes were produced in the face of work climate impediments. The following recommendations are provided based on the results of this study and new problems that became apparent.

Theories of creativity and future research. Because of the need to clearly identify work climate components and understand the impact of those contextual influences, as well as social influences, future case studies that examine schools with creative potential should include both theories of creativity (Amabile 1988) and Woodman et al., (1993) as the theoretical foundation for future research.

KEYS® survey and future research in the K-12 school system. Before KEYS® survey items underwent quantitative analysis for reliability and internal consistency, survey

items were identified from phenomenological accounts of perceived stimulants and impediments by employees working in organizations that were ranked from “Low–Creative” to “High–Creative”. Because the KEYS® norm group currently includes only four company groups in the education industry, additional administration of the KEYS® survey is needed in both creative and non-creative schools. There are two important reasons for measuring both creative and non-creative schools. First, this would validate the reliability of the KEYS® survey as an instrument that distinguishes between creative and non-creative organizations in the K-12 school setting. Second, more creative schools need to be identified through the use of the KEYS® survey and results need to be entered into the norm group in order to establish a sub-group from which comparisons will be more reliable.

Wrapping it up

Principals of innovative schools will need to marry research with practice. There are few principals or school directors that have an understanding of how to manage/create a work climate conducive to creativity. Additionally, the body of knowledge on creativity is growing and becoming increasingly fragmented. This calls for three types of action. First, more time and resources are needed for scaling researched based practice to other schools. Second, in this era of accountability, more principals will need to take risks and model the kinds of behaviors they expect from teachers. Finally, principals need to remain optimistic and hold on to a vision of leading one of the most future oriented organizations in the world

Final remarks

Remarkably, CSH founders conceived ideas for schooling that included project-based learning that the teachers designed, and the personalization that came from having a low caseload as well as the personal relationships among teachers, students, and their creative

potential. CSH had a work-climate supportive of creativity and was the kind of place that made teaching rewarding, self-fulfilling and challenging. If those ideas that were brilliantly derived over the years by the CSH founders and owners continue to be set aside in other schools for the single purpose of increasing scores on state tests, they do so at their peril. It is not a matter that student knowledge and creative potential was only possible at CSH, it is possible in most, if not all, schools.

Two CSH teachers sum up the research. The first teacher compares CSH's creativity and productivity to a traditional school. The second teacher offers hope for all schools interested in creativity and innovation:

Compared to my last school we are more productive. Hands down it's incredible. It's incredible how the creativity that goes in behind these projects ends up taking the students and saying, you know, you really are a young adult, and you're responsible for getting this accomplished.

I think we have the freedom to come up with the ideas...everybody is creative. Creativity is built on being able to explore, which is a crucial thing to remember in the classroom as well. If the same setup was provided for other teachers (in other schools) you would see the same eventual blossoming of ideas in them, pursuing what they wanted to do.

Appendices

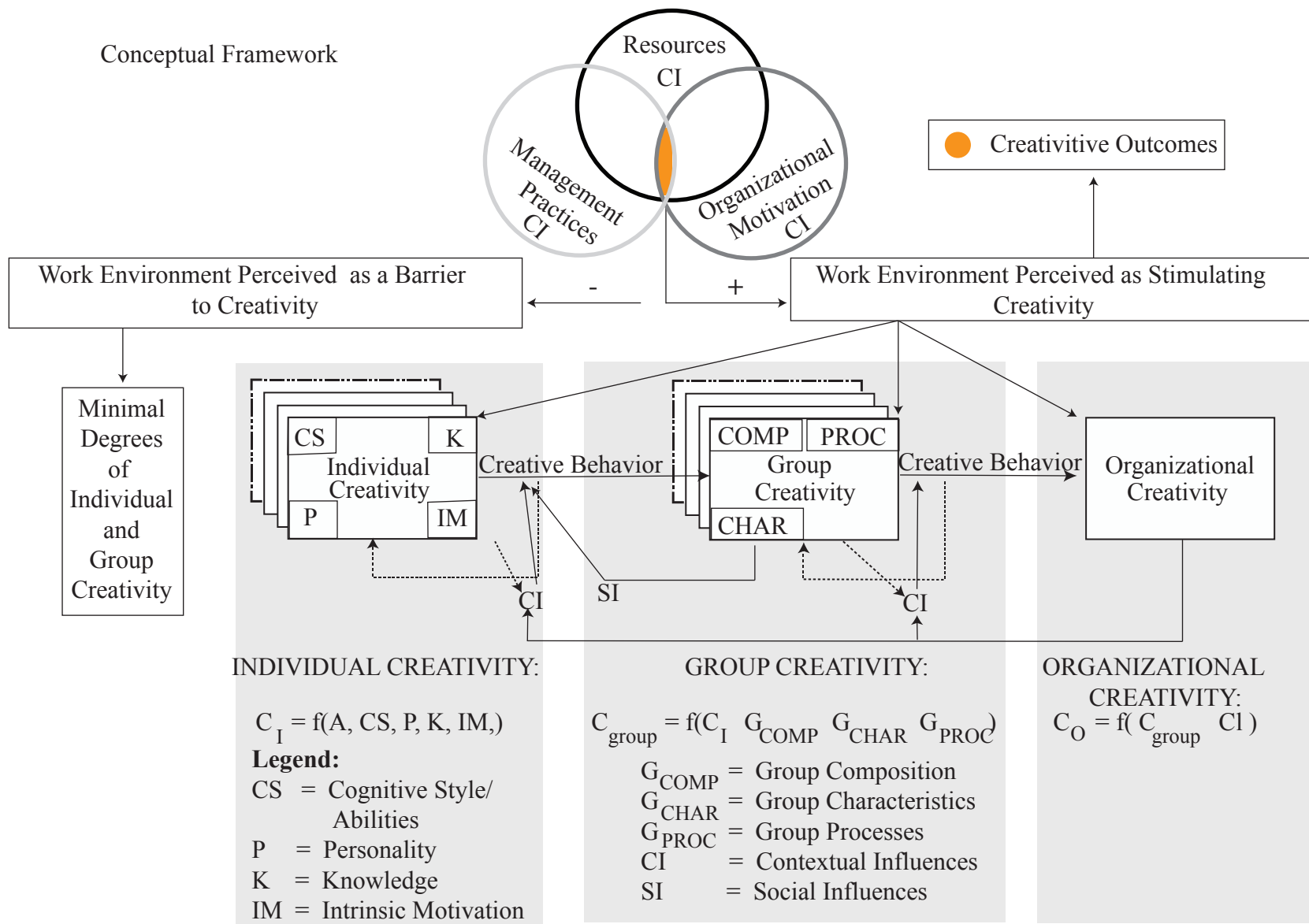
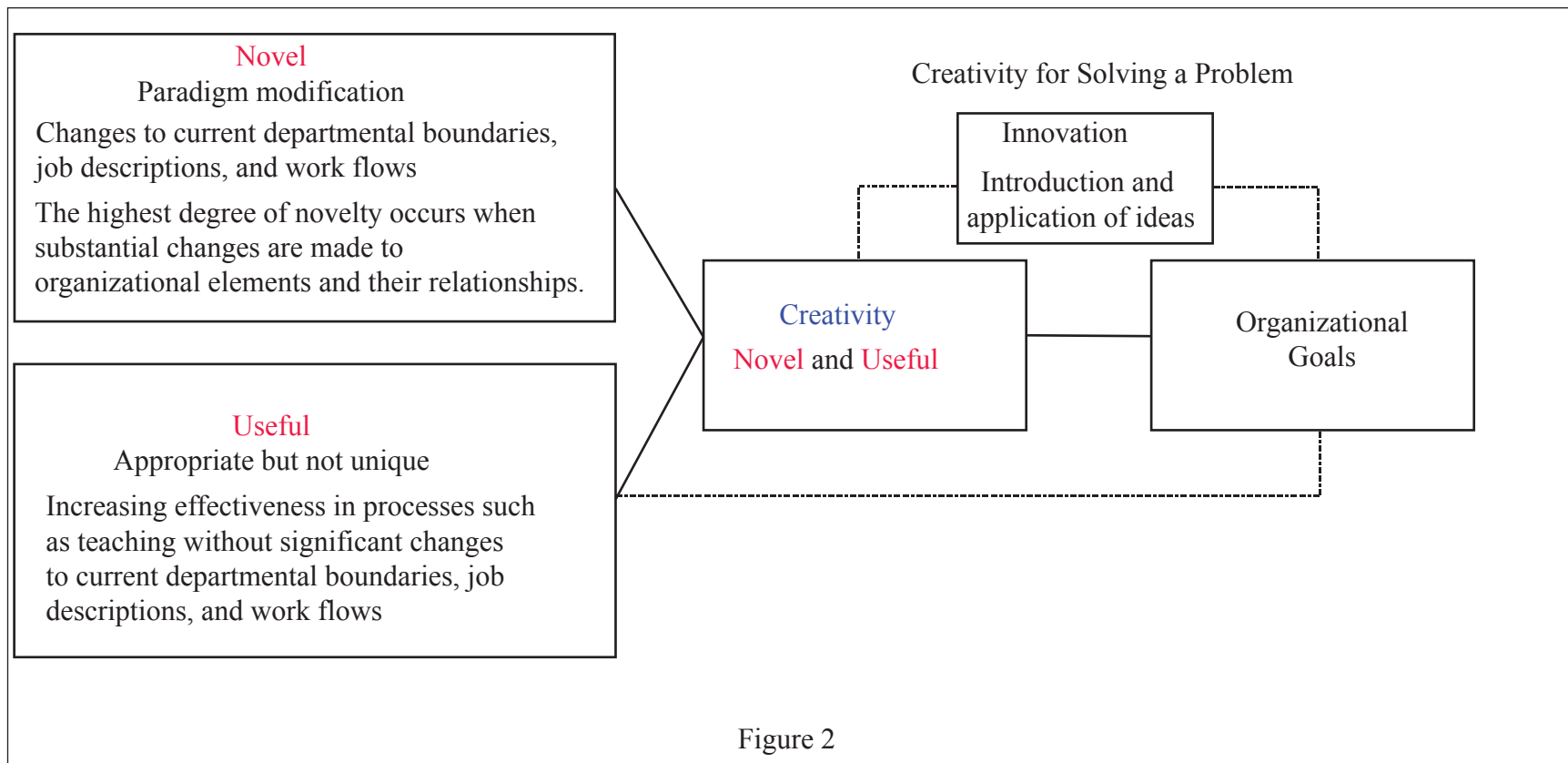


Figure 1



Dimensions and Outcomes - Overall

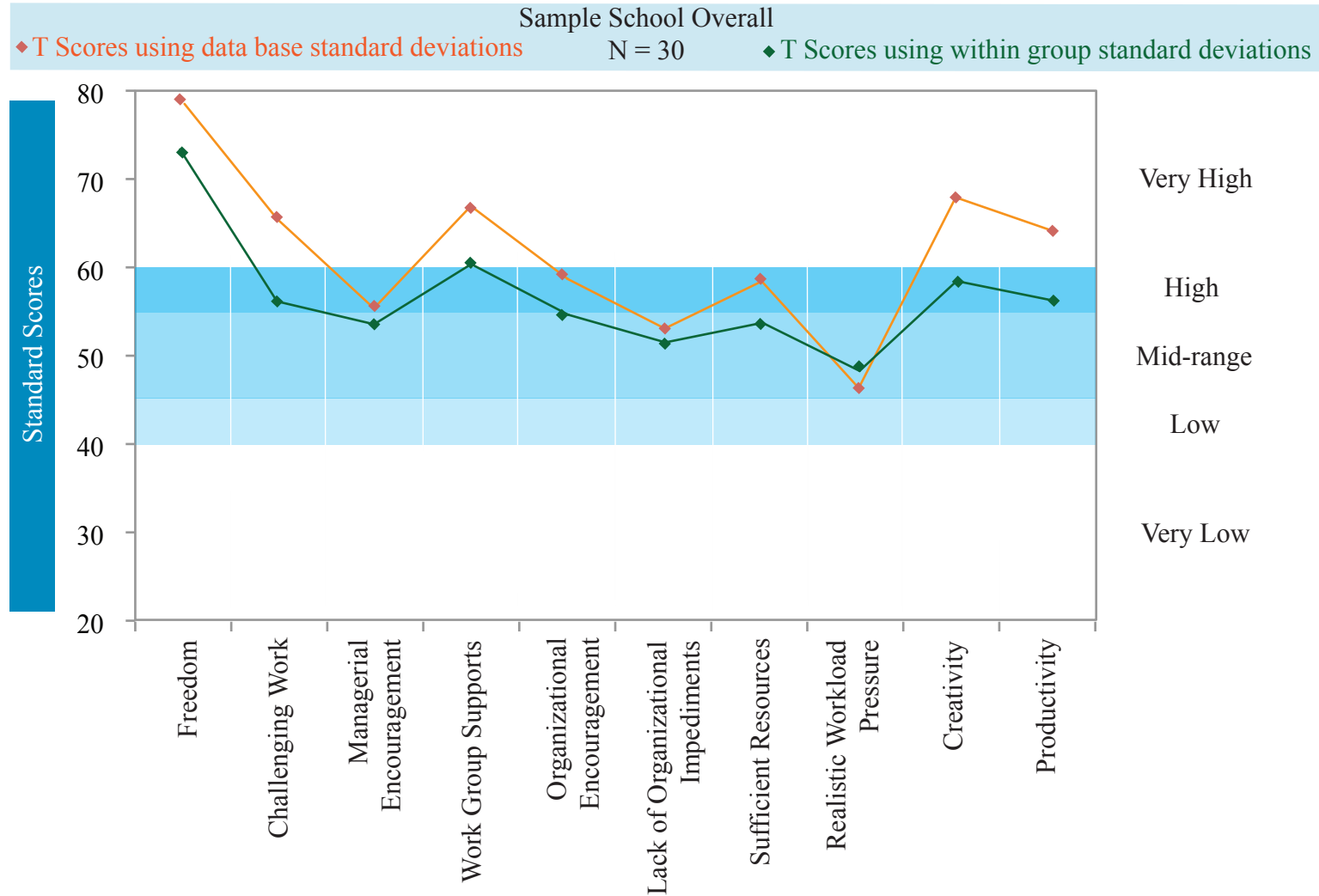


Figure 3

Item Level Data - Work Group Supports

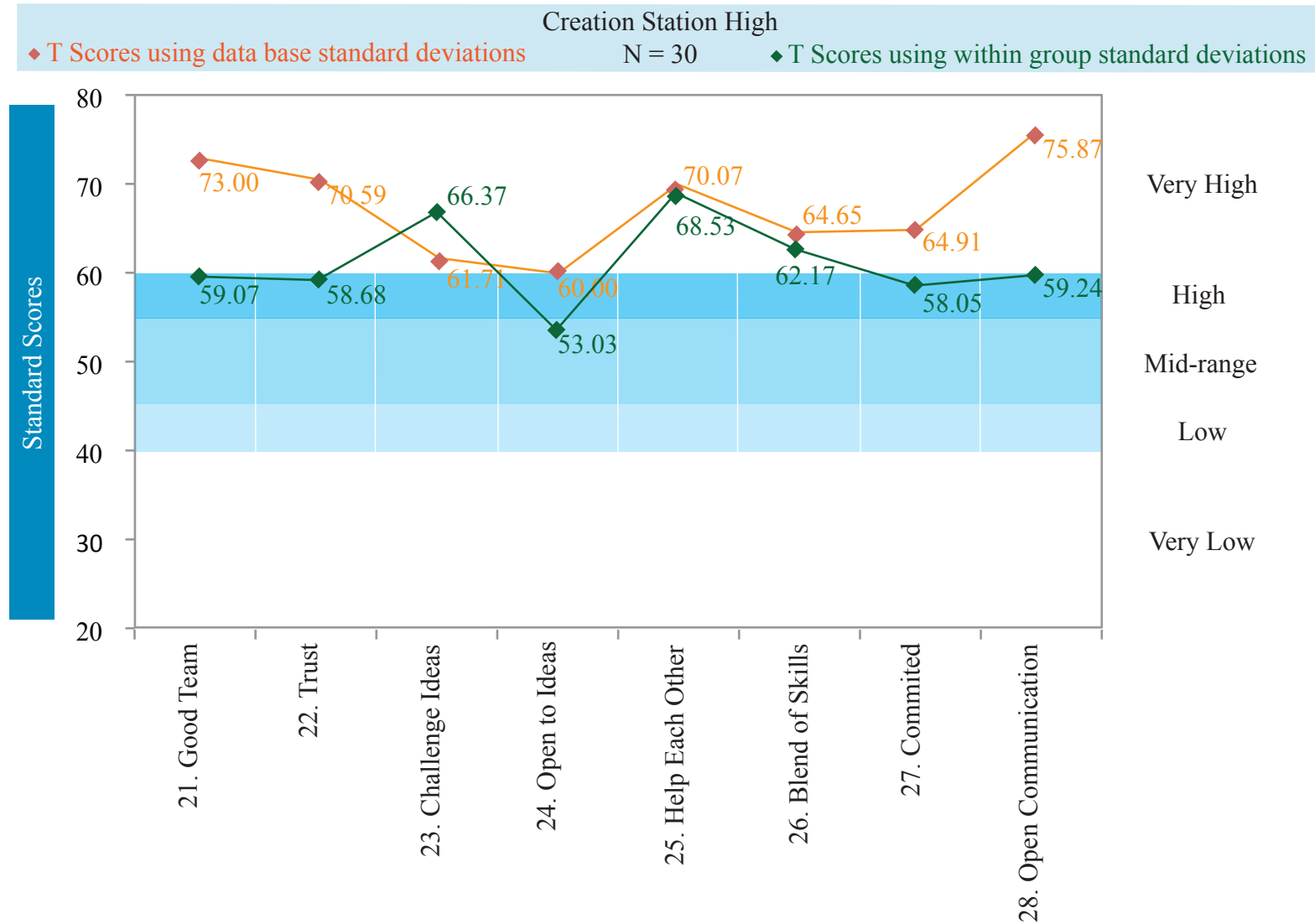


Figure 4

Figure 4 (cont'd)

Work Group Supports: A diversely skilled work group in which people communicate well, are open to new ideas, constructively challenge each other's work, trust and help each other, and feel committed to the work they are doing

	 C.S. High VH	 C.S. High H
21. My co-workers and I make a Good Team .	VH	H
22. There is a feeling of Trust among the people I work with most closely.	VH	H
23. Within my work group, we Challenge each other's Ideas in a constructive way.	VH	VH
24. People in my work group are Open to new Ideas .	H	M
25. In my work group, people are willing to Help Each Other .	VH	VH
26. There is a good Blend of Skills in my work group.	VH	VH
27. The people in my work group are Committed to our work.	VH	H
28. There is free and Open Communication within my work group.	VH	H

VH = Very High

H = High

M = Mid-range

L = Low

VL = Very Low

Dimensions and Outcomes - Overall

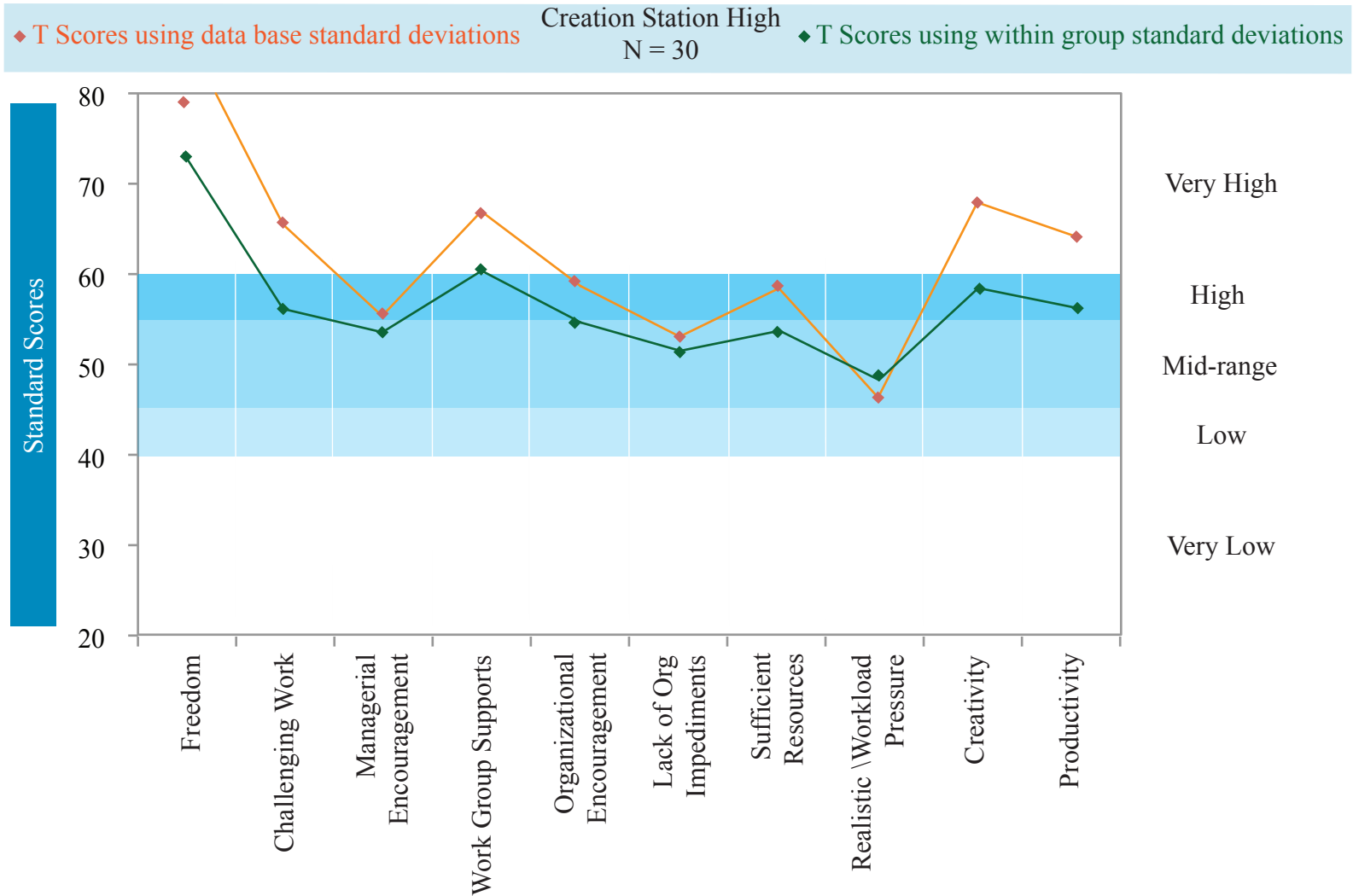


Figure 7

Figure 7 (cont'd)

Work Environment	Management Practices	C.S. High VH	C.S. High VH
	Freedom: Deciding what work to do or how to do it; a sense of control over one's work.	VH	H
	Challenging Work: A sense of having to work hard on challenging tasks and important projects.	H	M
	Managerial Encouragement: A boss who serves as a good work model, sets goals appropriately, supports the work group, values individual contributions, and shows confidence in the work group	VH	VH
	Work Group Supports: A diversely skilled work group in which people communicate well, are open to new ideas, constructively challenge each other's work, trust and help each other, and feel committed to the work they are doing	H	M
	Organizational Motivation		
	Organizational Encouragement: An organizational culture that encourages creativity through the fair, constructive judgment of ideas; reward and recognition for creative work; mechanisms for developing new ideas; an active flow of ideas; and a shared vision	M	M
	Lack of Organizational Impediments: An organizational culture that does not impede creativity through internal political problems, harsh criticism of new ideas, destructive internal competition, an avoidance of risk, and an overemphasis on the status quo	H	M
Outcomes	Resources		
	Sufficient Resources: Access to appropriate resources, including funds, materials, facilities, and information	M	M
	Realistic Workload Pressure: Absence of extreme time pressures, unrealistic expectations for productivity, and distractions from creative work	VH	H
	Outcomes		
	Creativity: A creative organization or unit, where a great deal of creativity is called for and where people believe they actually produce creative work	VH	H
	Productivity: An efficient, effective, and productive organization or unit	VH	H

VH = Very High

H = High

M = Mid-range

L = Low

VL = Very Low

Item Level Data - Freedom

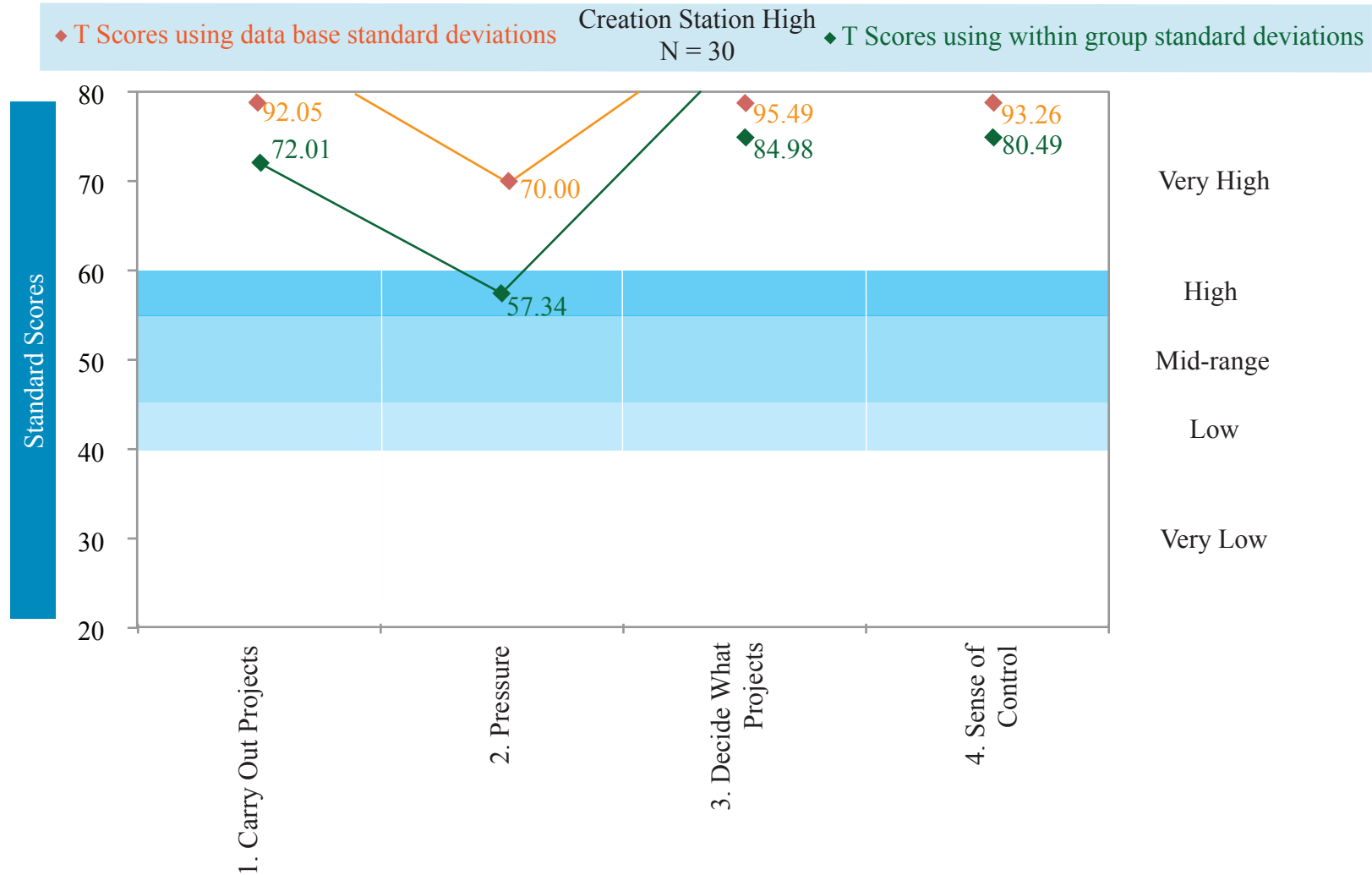


Figure 8

Figure 8 (cont'd)

Freedom: Deciding what work to do or how to do it; a sense of control over one's work

	C.S. High VH	C.S. High VH
1. I have the freedom to decide how I am going to Carry Out My Projects .	VH	H
2. I feel little Pressure to meet someone else's specifications in how I do my work.	VH	VH
3. I have the freedom to Decide What Project(s) I am going to do.	VH	VH
4. In my daily work environment, I feel a Sense of Control over my own work and my own ideas.	VH	VH

VH = Very High

H = High

M = Mid-range

L = Low

VL = Very Low

Item Level Data - Challenging Work

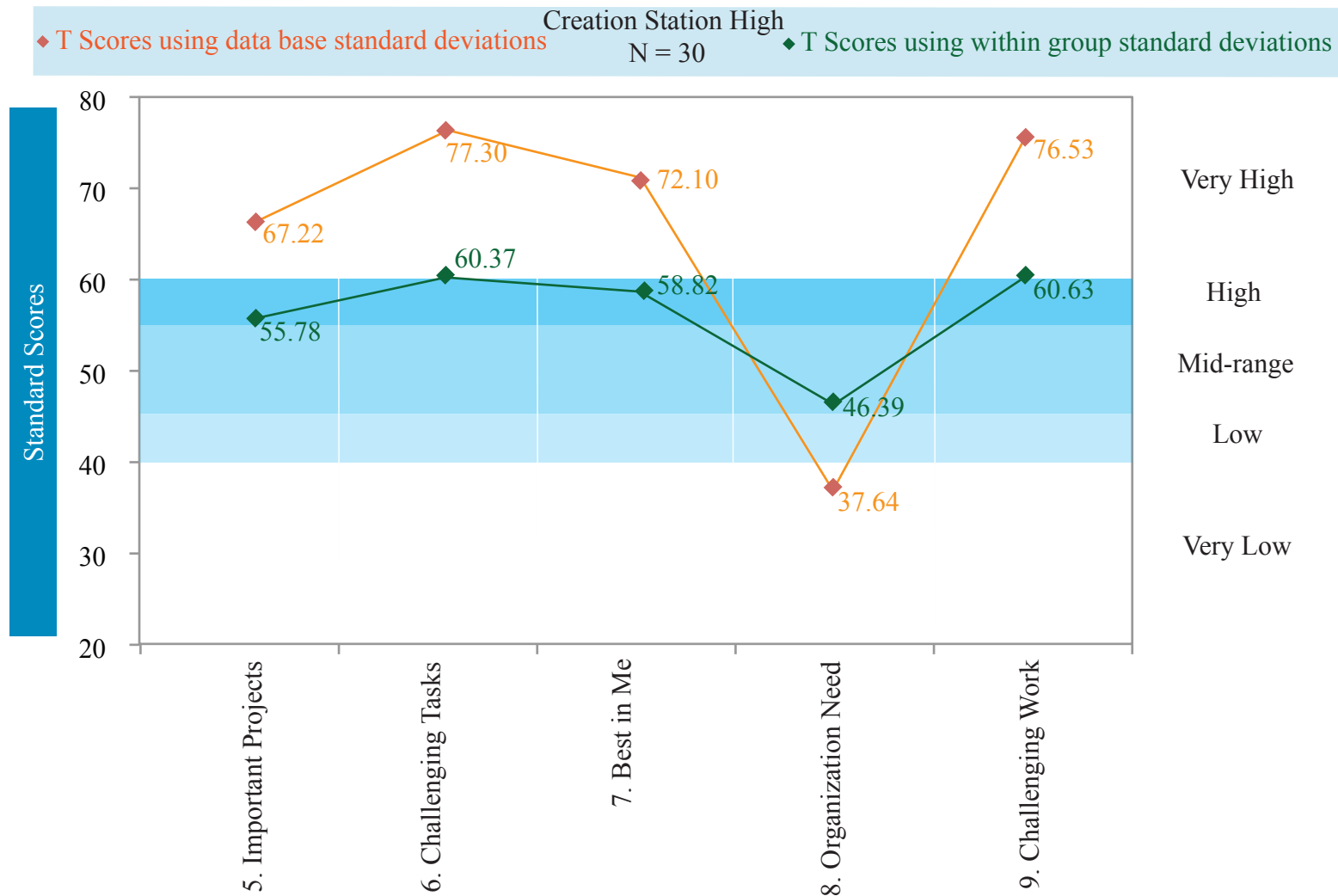


Figure 9

Figure 9 (cont'd)

Challenging Work: A sense of having to work hard on challenging tasks and important projects

	 C.S. High VH	 C.S. High H
5. I feel that I am working on Important Projects .	VH	H
6. The Tasks in my work are Challenging .	VH	VH
7. The tasks in my work call out the Best in Me .	VH	H
8. The Organization has an urgent Need for successful completion of the work I am now doing.	VL	M
9. I feel Challenged by the Work I am currently doing.	VH	VH

VH = Very High

H = High

M = Mid-range

L = Low

VL = Very Low

Item Level Data - Managerial Encouragement

◆ T Scores using data base standard deviations Creation Station High N = 30 ◆ T Scores using within group standard deviations

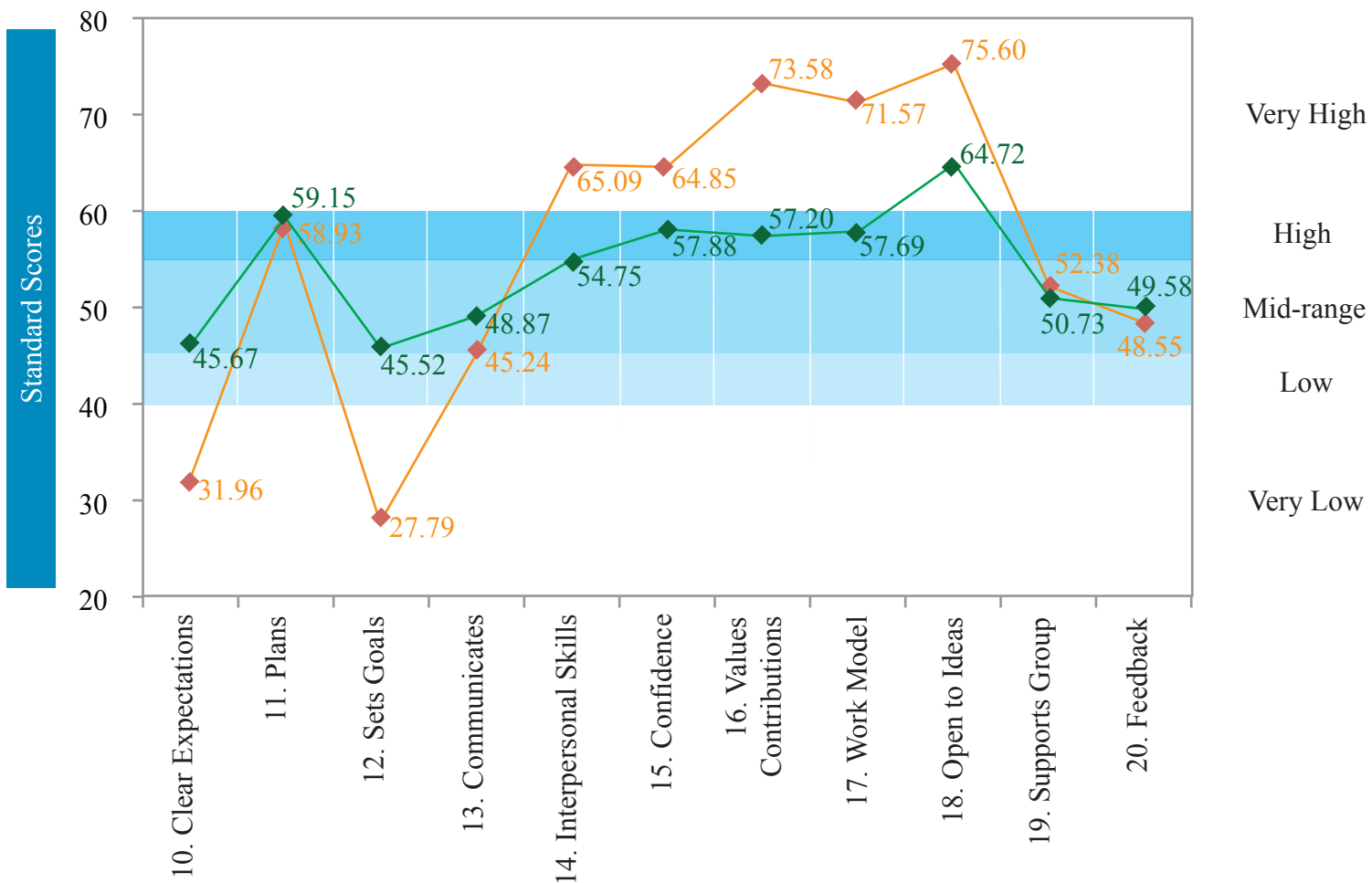


Figure 10

Figure 10 (cont'd)

Managerial Encouragement: A boss who serves as a good work model, sets goals appropriately, supports the work group, values individual contributions, and shows confidence in the work group

	 C.S. High VL	 C.S. High M
10. My boss's Expectations for my project(s) are Clear .		
11. My boss Plans well.	H	H
12. My boss clearly Sets overall Goals for me.	VL	M
13. My boss Communicates well with our work group.	M	M
14. My boss has good Interpersonal Skills .	VH	M
15. My boss shows Confidence in our work group.	VH	H
16. My boss Values individual Contributions to project(s).	VH	H
17. My boss serves as a good Work Model .	VH	H
18. My boss is Open to new Ideas.	VH	VH
19. My boss Supports my work Group within the organization.	M	M
20. I get constructive Feedback about my work.	M	M

VH = Very High

H = High

M = Mid-range

L = Low

VL = Very Low

Item Level Data - Work Group Supports

◆ T Scores using data base standard deviations Creation Station High N = 30 ◆ T Scores using within group standard deviations

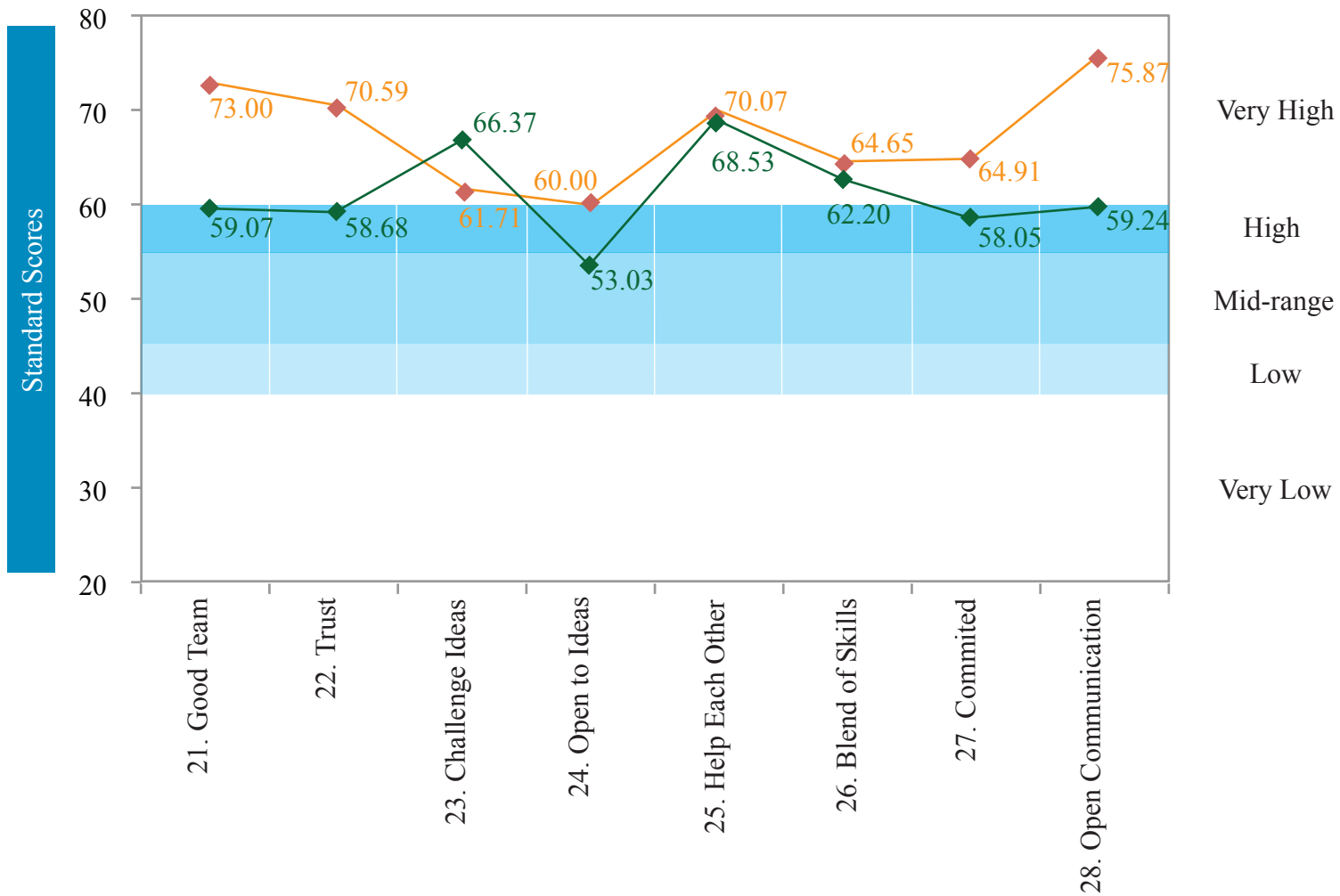


Figure 11

Figure 11 (cont'd)

Work Group Supports: A diversely skilled work group in which people communicate well, are open to new ideas, constructively challenge each other's work, trust and help each other, and feel committed to the work they are doing

	 C.S. High VH	 C.S. High H
21. My co-workers and I make a Good Team .	VH	H
22. There is a feeling of Trust among the people I work with most closely.	VH	H
23. Within my work group, we Challenge each other's Ideas in a constructive way.	VH	VH
24. People in my work group are Open to new Ideas.	H	M
25. In my work group, people are willing to Help Each Other .	VH	VH
26. There is a good Blend of Skills in my work group.	VH	VH
27. The people in my work group are Committed to our work.	VH	H
28. There is free and Open Communication within my work group.	VH	H

VH = Very High

H = High

M = Mid-range

L = Low

VL = Very Low

Item Level Data - Organizational Encouragement

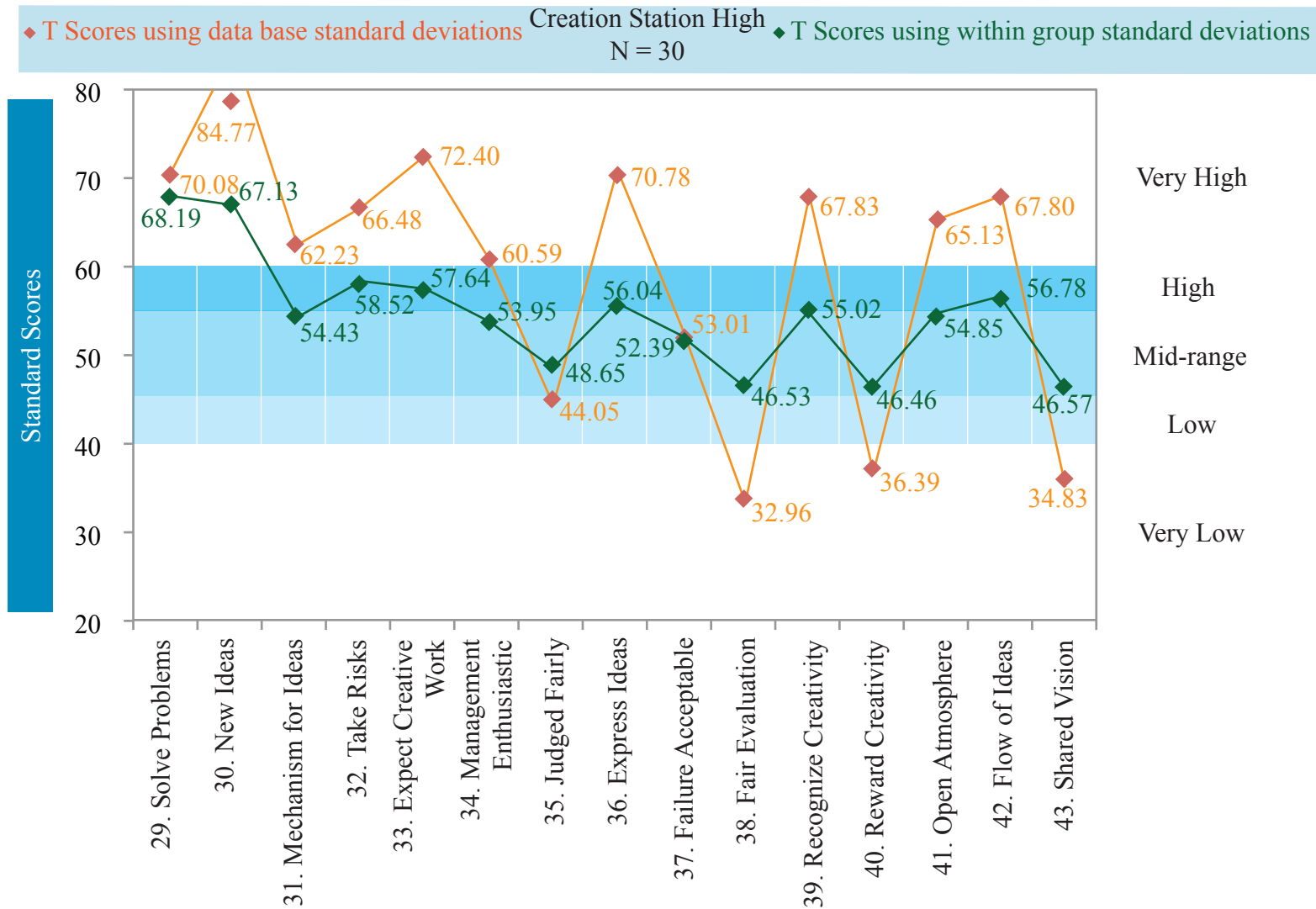


Figure 12

Figure 12 (cont'd)

Organizational Encouragement: An organizational culture that encourages creativity through the fair, constructive judgment of ideas; reward and recognition for creative work; mechanisms for developing new ideas; an active flow of ideas; and a shared vision

	 C.S. High VH	 C.S. High VH
29. People are encouraged to Solve Problems creatively in this organization.	VH	VH
30. New Ideas are encouraged in this organization.	VH	VH
31. This organization has a good Mechanism for encouraging and developing creative Ideas.	VH	M
32. People are encouraged to Take Risks in this organization.	VH	H
33. In this organization, top management Expects that people will do Creative Work .	VH	H
34. I feel that top Management is Enthusiastic about my project(s).	VH	M
35. Ideas are Judged Fairly in this organization.	L	M
36. People in this organization can Express unusual Ideas without the fear of being called stupid.	VH	H
37. Failure is Acceptable in this organization, if the effort on the project was good.	M	M
38. Performance Evaluation in this organization is Fair .	VL	M
39. People are Recognized for Creative work in this organization.	VH	H
40. People are Rewarded for Creative work in this organization.	VL	M
41. There is an Open Atmosphere in this organization.	VH	M
42. In this organization, there is a lively and active Flow of Ideas .	VH	H
43. Overall, the people in this organization have a Shared Vision of where we are going and what we are trying to do.	VL	M

VH = Very High

H = High

M = Mid-range

L = Low

VL = Very Low

Item Level Data - Lack of Organizational Impediments

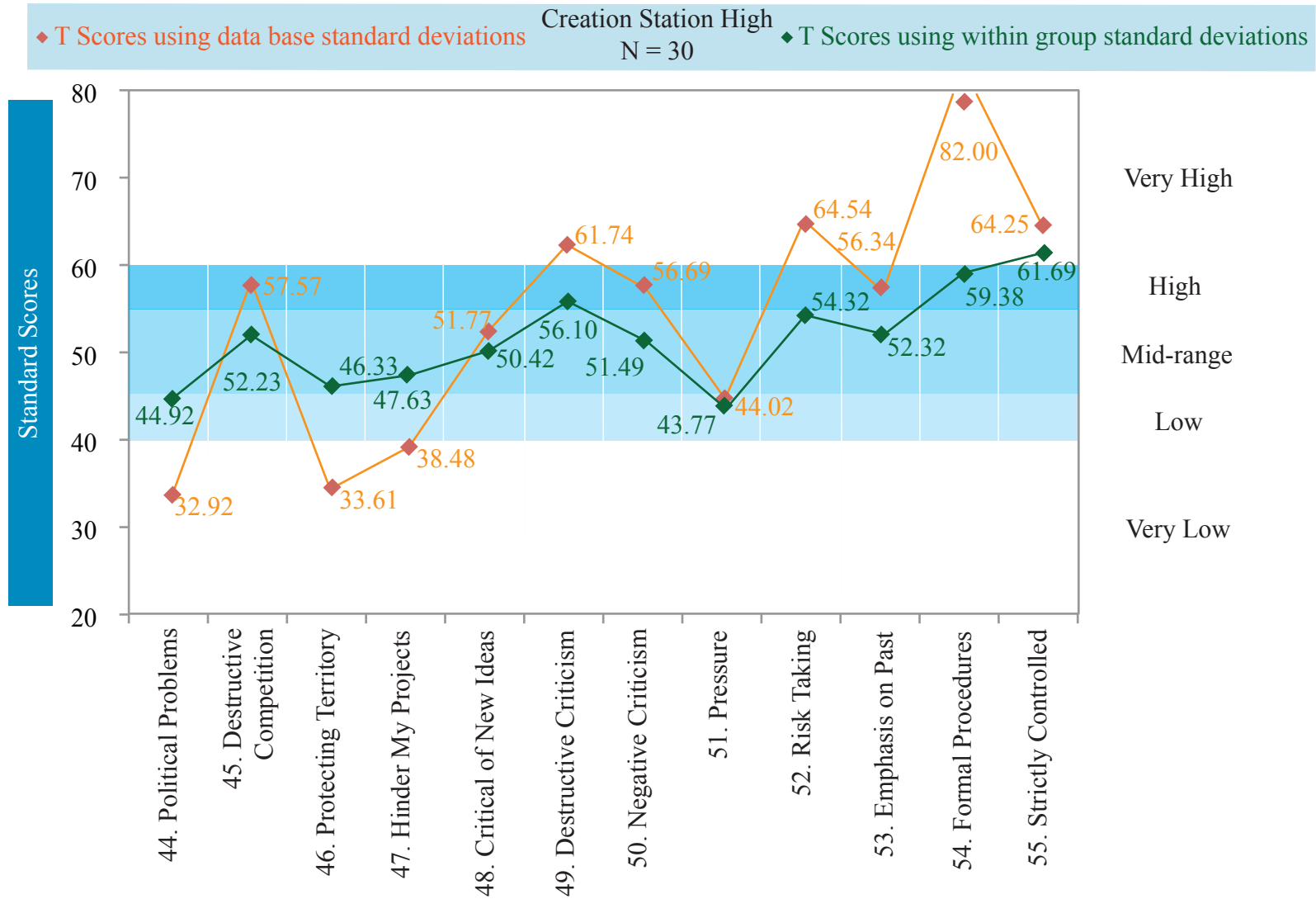


Figure 13

Figure 13 (cont'd)

Lack of Organizational Impediments: An organizational culture that does not impede creativity through internal political problems, harsh criticism of new ideas, destructive internal competition, an avoidance of risk, and an overemphasis on the status quo

	 C.S. High VL	 C.S. High L
44. There are few Political Problems in this organization.	VL	L
45. There is no Destructive Competition within this organization.	H	M
46. People in this organization are Not very concerned about Protecting their Territory .	VL	M
47. Other areas of the organization Do Not Hinder My Project(s) .	VL	M
48. People are Not Critical of New Ideas in this organization.	M	M
49. Destructive Criticism is Not a problem in this organization.	VH	H
50. People are Not concerned about Negative Criticism of their work in this organization.	H	H
51. People in this organization Do Not feel Pressure to produce anything acceptable, even if quality is lacking.	L	L
52. Top management is Willing to Take Risks in this organization.	VH	M
53. There is Little Emphasis in this organization on Doing Things the Way We Have Always Done Them .	H	M
54. Procedures and structures are Not too Formal in this organization.	VH	H
55. This organization is not Strictly Controlled by upper management.	VH	VH

VH = Very High

H = High

M = Mid-range

L = Low

VL = Very Low

Item Level Data - Sufficient Resources

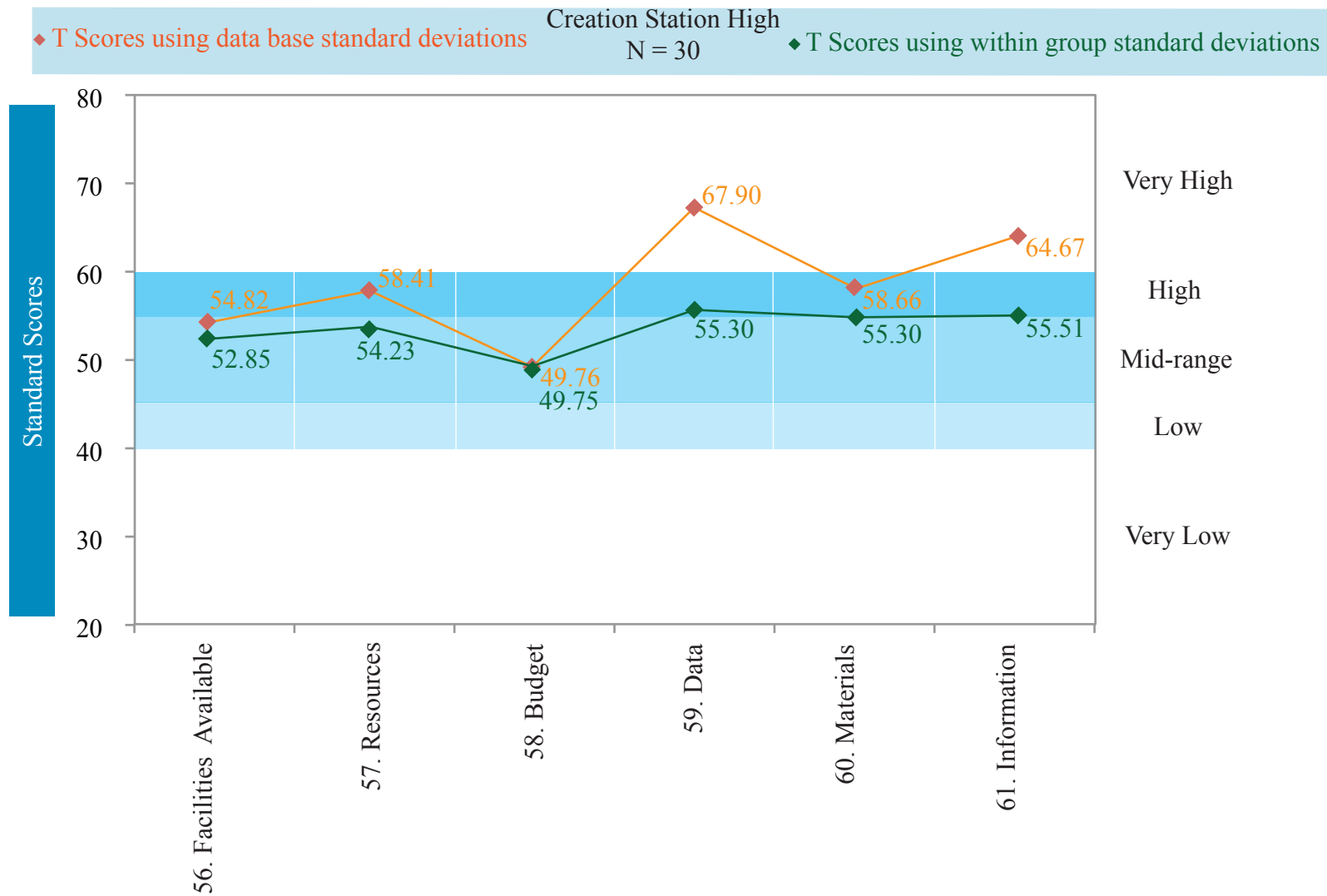


Figure 14

Figure 14 (cont'd)

Sufficient Resources: Access to appropriate resources, including funds, materials, facilities, and information

	 C.S. High M	 C.S. High M
56. The Facilities I need for my work are readily Available to me.	M	M
57. Generally, I can get the Resources I need for my work.	H	M
58. The Budget for my project(s) is generally adequate.	M	M
59. I can get all the Data I need to carry out my projects successfully.	VH	H
60. I am able to easily get the Materials I need to do my work.	H	H
61. The Information I need for my work is easily obtainable.	VH	H

VH = Very High

H = High

M = Mid-range

L = Low

VL = Very Low

Item Level Data – Realistic Workload Pressure

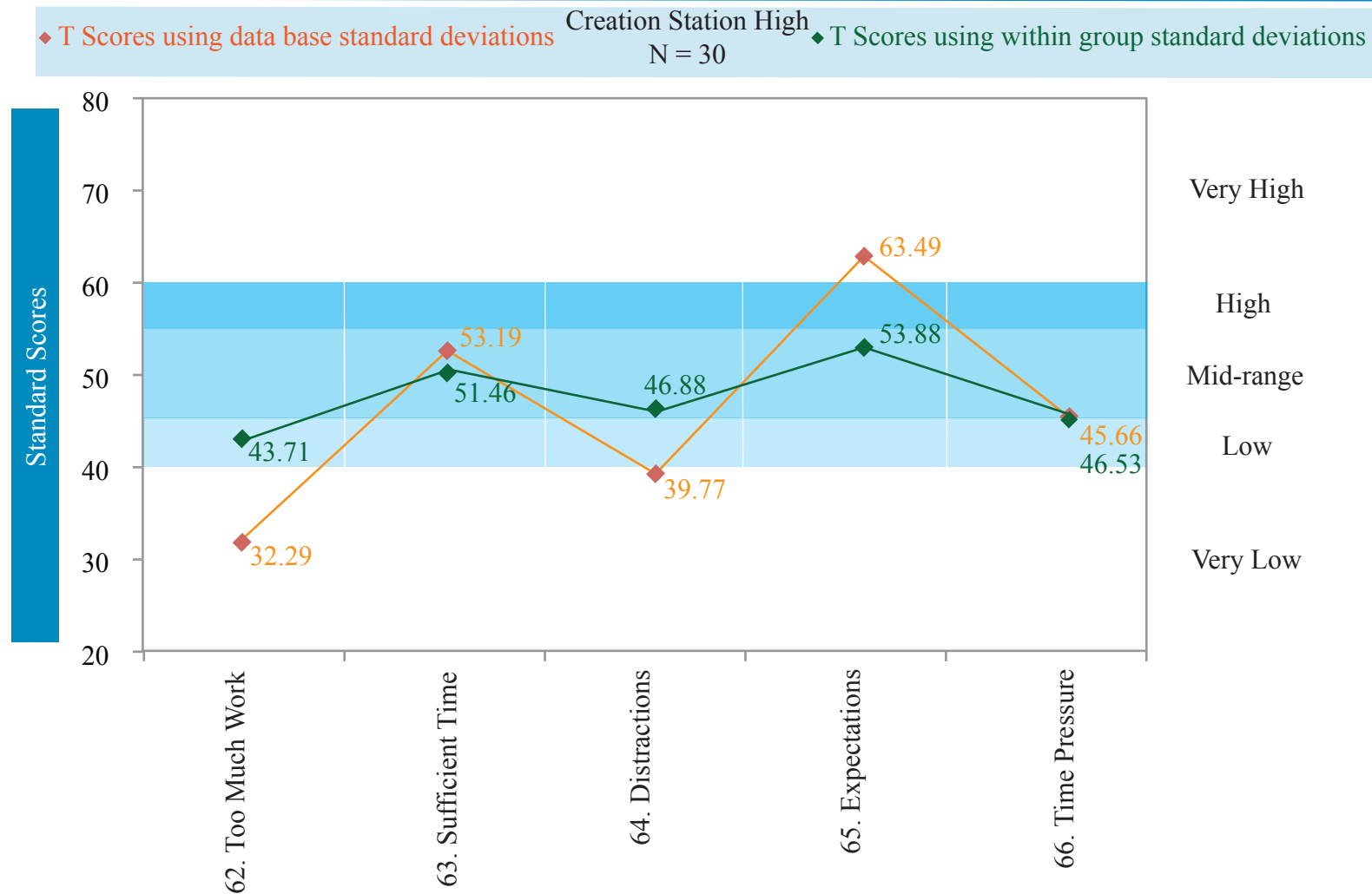


Figure 15

Figure 15 (cont'd)

Realistic Workload Pressure: Absence of extreme time pressures, unrealistic expectations for productivity, and distractions from creative work

	 C.S. High VL	 C.S. High L
62. I do Not have too Much Work to do in too little time.	VL	L
63. I have Sufficient Time to do my project(s).	M	M
64. There are not too many Distractions from project work in this organization.	VL	M
65. There are realistic Expectations for what people can achieve in this organization.	VH	M
66. I do Not feel a sense of Time Pressure in my work.	M	M

VH = Very High

H = High

M = Mid-range

L = Low

VL = Very Low

Item Level Data - Creativity

◆ T Scores using data base standard deviations Creation Station High ◆ T Scores using within group standard deviations
N = 30

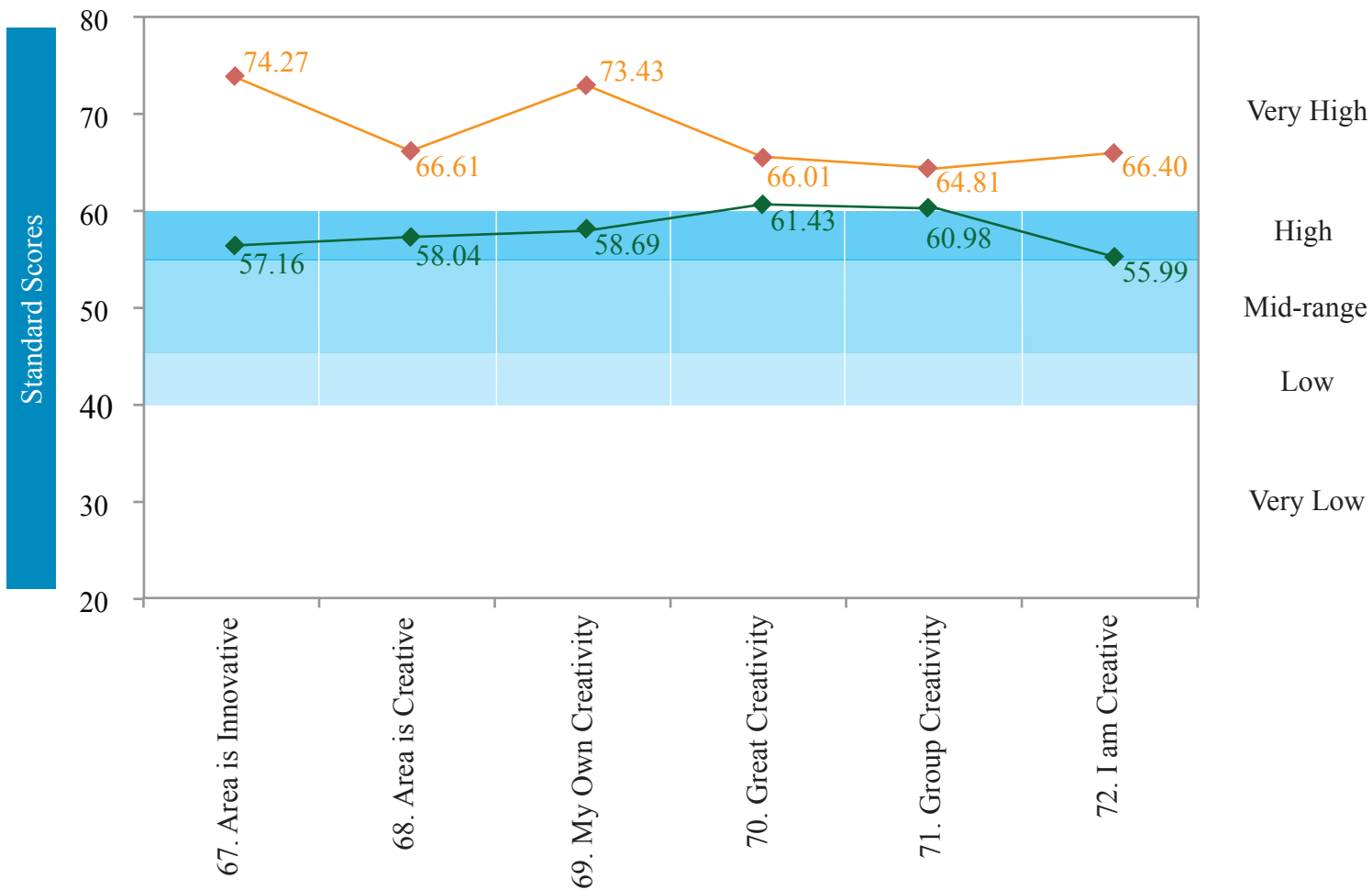


Figure 16

Figure 16 (cont'd)

Creativity: A creative organization or unit, where a great deal of creativity is called for and where people believe they actually produce creative work

	 C.S. High VH	 C.S. High H
67. My Area of this organization is Innovative.	VH	H
68. My Area of this organization is Creative.	VH	H
69. Overall, my current work environment is conducive to My Own Creativity.	VH	H
70. A Great deal of Creativity is called for in my daily work.	VH	VH
71. Overall, my current work environment is conducive to the Creativity of my work Group.	VH	VH
72. I believe that I am currently very Creative in my work.	VH	H

VH = Very High

H = High

M = Mid-range

L = Low

VL = Very Low

Item Level Data - Productivity

◆ T Scores using data base standard deviations Creation Station High N = 30 ◆ T Scores using within group standard deviations

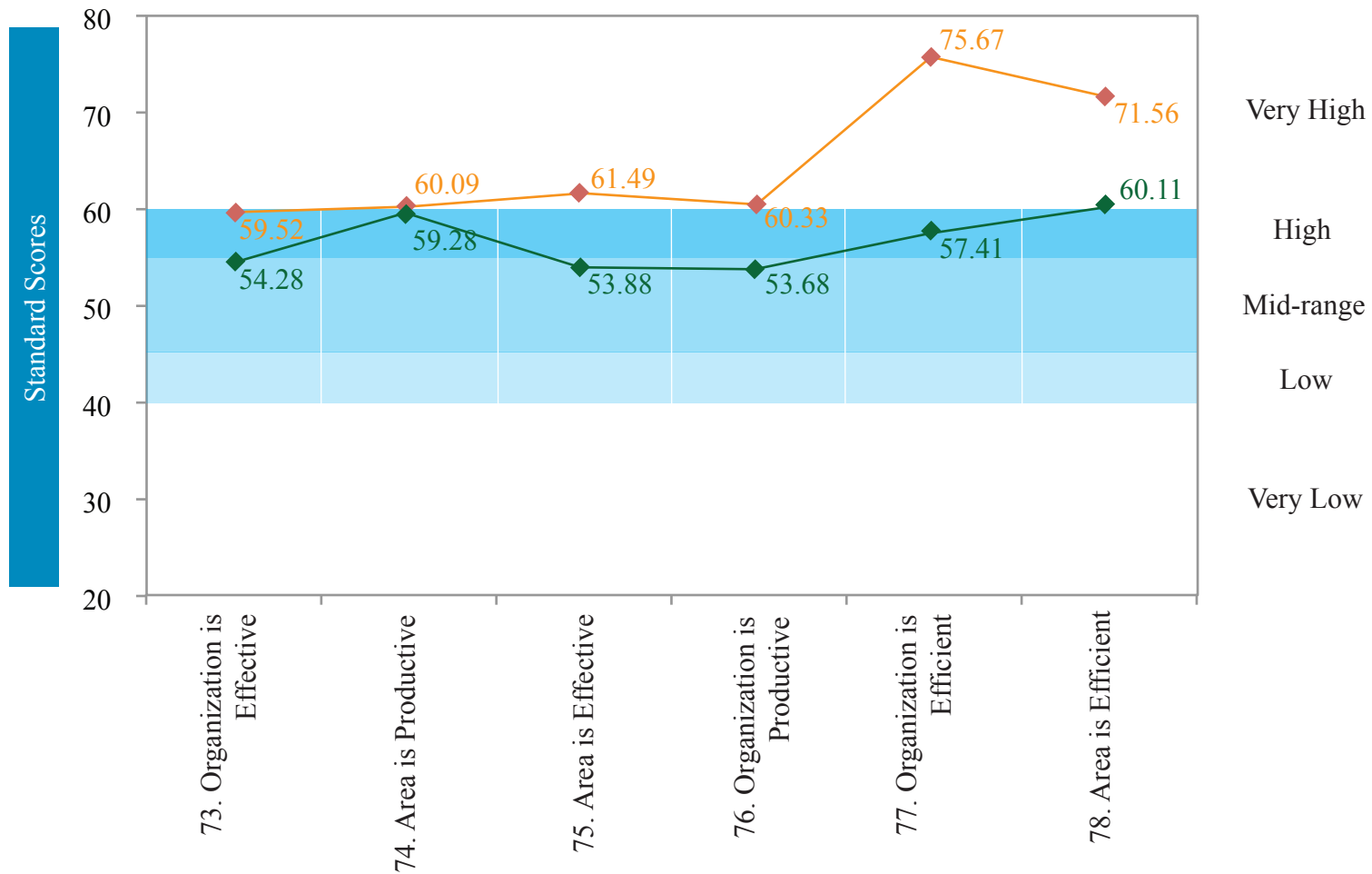


Figure 17

Figure 17 (cont'd)

Productivity: An efficient, effective, and productive organization or unit

	 C.S. High H	 C.S. High M
73. Overall, this Organization is Effective.		
74. My Area of this organization is Productive.	VH	H
75. My Area of this organization is Effective.	VH	M
76. Overall, this Organization is Productive.	VH	M
77. Overall, this Organization is Efficient.	VH	H
78. My Area of this organization is Efficient.	VH	VH

VH = Very High

H = High

M = Mid-range

L = Low

VL = Very Low

Ten Highest Rated Items for Sample Organization - Overall

Listed below are the items with the highest standard scores compared to the KEYS normative group.

Item	KEYS Dimension	Standard Score Compared to KEYS Normative Group	Standard Score Compared to KEYS Normative Group
		C.S. High	C.S. High
3. I have the freedom to decide what project(s) I am going to do.	Freedom	95/VH	85/VH
4. In my daily work environment, I feel a sense of control over my own work and my own ideas.	Freedom	93/VH	80/VH
1. I have the freedom to decide how I am going to carry out my projects.	Freedom	92/VH	72/VH
25. In my work group, people are willing to help each other	Work Group Supports	70/VH	69/VH
29. People are encouraged to solve problems.	Managerial Encourage	70/VH	68/VH
30. New ideas are encouraged in this organization.	Managerail Encourage	85/VH	67/VH
23. Within my work group, we challenge each other's ideas constructively.	Work Group Support	62/VH	66/VH
18. My boss is open to new ideas.	Managerial Encourage	76/VH	65/VH
26. There is a good blend of skills in my work group.	Work Group Supports	65/VH	62/VH
55. This organization is not strictly controlled by upper management.	Lack of Impediments	64/VH	62/VH

VH = Very High

H = High

M = Mid-range

L = Low

VL = Very Low

Figure 18

Ten Lowest Rated Items for Sample Organization - Overall

Listed below are the items with the lowest standard scores compared to the KEYS normative group.

Item	KEYS Dimension	Standard Score Compared to KEYS Normative Group	Standard Score Compared to KEYS Normative Group
		C.S. High	C.S. High
62. I do not have too much work to do in too little time.	Workload Pressure	32/VL	44/L
51. People in this organization feel pressure.	Lack of Org. Impediments	44/L	44/L
44. There are few political problems in this organization.	Lack of Org. Impediments	33/VL	45/L
12. My boss clearly sets goals for me.	Organizational Encourage	38/VL	46/M
10. My boss's expectations for my projects are clear.	Organizational Encourage	32/VL	46/M
46. People in this organization are not very concerned about protecting their territory	Lack of Org. Impediments	34/VL	46/M
8. The organization has an urgent need for successful completion of the work I am now doing.	Challenging Work	38/VL	46/M
40. People are rewarded for creative work in this organization.	Organizational Encourage	37/VL	46/M
38. Performance evaluation in this organization is fair.	Organizational Encourage	33/VL	46/M
43. Overall, the people in this organization have a shared vision	Organizational Encourage	35/VL	47/M

VH = Very High

H = High

M = Mid-range

L = Low

VL = Very Low

Figure 19

Most Important Factors Affecting Creativity and Innovation

Supporting Creativity and Innovation as reported - Overall

A. The most frequently mentioned factors **supporting** creativity and innovation in your current work environment are:

Supporting Factor	Work Content	Percent
		C.S. High
Autonomy or freedom in choosing projects	The Work or the Project	16%
Autonomy or freedom in carrying out projects	The Work or the Project	14%
Communication and cooperation around ideas	Organizational Attitudes, Structures, and Procedures	11%
Personal characteristics or abilities of my team members	Teams or Co-workers	9%
Openness to new ideas	Organizational Attitudes, Structures, and Procedures	7%
Recognition of creative work	Management	4%
Trust across the organization	Organizational Attitudes, Structures, and Procedures	4%
Being allowed to work in teams	Teams or Co-workers	4%
Trust within the team	Teams or Co-workers	4%
Interesting work	The Work or the Project	4%

The percent column(s) reflects the proportion of respondents who selected this item as one of the three most important factors affecting creativity and innovation.

Figure 20

Most Important Factors Affecting Creativity and Innovation

Inhibiting Creativity and Innovation as reported - Overall

A. The most frequently mentioned factors **inhibiting** creativity and innovation in your current work environment are:

Inhibiting Factor	Work Content	Percent
		C.S. High
Insufficient money	Resources Available	21%
Sufficient time for the work that must be done	Resources Available	16%
Conducive physical environment	Resources Available	7%
Lack of training/development	Resources Available	6%
Insufficient tools	Resources Available	6%
Lack of recognition of creative work	Management	3%
Lack of trust across the organization	Organizational Attitudes, Structures, and Procedures	3%
Lack of encouragement/ support from immediate boss	Management	3%
Personal characteristics or abilities of my team members	Teams or Co-workers	3%
Lack of constructive debate within the team	Team or Co-workers	3%

The percent column(s) reflects the proportion of respondents who selected this item as one of the three most important factors affecting creativity and innovation.

Figure 21

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