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THE INFLUENCE OF JOB-EMBEDDED PROFESSIONAL LEARNING AND LEADERSHIP ON SCHOOL PROFESSIONAL CULTURE

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DISSERTATION

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Dedication

To Isolina, Erik, and Diego.

For your unwavering support and patience throughout the duration of my schooling.

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ABSTRACT

Educational leaders are increasingly facing low student achievement and engagement, low teacher morale, and more rigorous standards that require greater teacher preparation and professional development. There is overwhelming evidence from the literature on successful school systems that restructuring schools to make time for job-embedded professional learning (JEPL) with a relentless focus on continuous improvement will not only improve student learning and achievement but also improve school professional culture. Despite such near-universal agreement among educational scholars and practitioners alike, we see very little professional learning in U.S. schools. The absence of professional learning in schools provides a compelling need to understand more thoroughly the change process that embodies the structural and cultural shift necessary to create the conditions essential for teachers to engage in professional learning, and particularly, the role leadership must play to create the conditions for successful implementation.

This study answers two questions: how do job-embedded professional learning and leadership influence school professional culture? And, what are the implications for

leadership? Face-to-face interviews of teachers and principals at six school sites and annual evaluation reports from the Math and Science Academy for three consecutive years were utilized to collect data for this study. There is strong evidence that restructuring schools to provide the time for teams of teachers to engage in structured collaboration and the continuous improvement model is a powerful mechanism to improve both teaching and learning in a school as well as school professional culture. Committed teachers working together in meaningful professional learning with clear goals tend to be more motivated and engaged. Additionally, teachers who engage in JEPL tend to make progress in their work–a significant driver of a positive inner work life and school professional culture.

However, the right conditions must be in place for the collaboration and professional learning to yield results. Making JEPL work for all teachers requires a school leader who deeply understands the steps for transformational change. The study includes a conceptual model–A Leadership Model for Maximizing Teacher Engagement and Effectiveness–that leaders can use to guide decision-making as they seek to create and sustain transformational change.

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Chapter One

Introduction to the Study

"You take a school, you change the conditions, give people a different sense of possibility, a different set of expectations, a broader range of opportunities, you cherish and value the relationships between teachers and learners, you offer people the discretion to be creative and schools that were once bereft spring to life" (Sir Ken Robinson, 2013). The education community knows enough to dramatically improve schools–it stems largely from restructuring and re-culturing schools to create the proper conditions–what are we waiting for?

Since the publication of *A Nation at Risk* in 1983, public schools have been under scrutiny from the general public and policy makers alike to improve. Additional pressure was added in 2002 with the passage of the No Child Left Behind (NCLB) Act that mandated all students in the United States be proficient in mathematics and reading by 2014 (U.S. Department of Education, 2002). Today, teachers across the country are under even more pressure as most states have adopted the Common Core State Standards (CCSS)–standards for mathematics and language arts that are significantly more rigorous than previous versions of most states' standards. Meeting the demands of CCSS will require a dramatic shift, forcing teachers to deliver their instruction in fundamentally different ways in order to ensure student learning and achievement (Coggshall, 2012a). There may be additional changes and demands with the passage of the Every Student Succeeds Act (ESSA) in December of 2015. ESSA is the reauthorization of NCLB and it remains to be seen how it will impact education reform in the coming years. This research was conducted when NCLB was in effect.

In addition to retooling to meet the new demands of the CCSS, teachers in most states are under pressure from new evaluation systems. Policy makers across the country have turned their attention to developing stringent accountability measures in the form of school grading and teacher and administrator evaluation systems.

In the midst of this tremendous flux, one issue remains constant: U.S. students' performance on international tests. Since the year 2000, students in the United States have witnessed their test scores decline in every subject area on the Program for International Student Assessment (PISA) test (Organization of Economic Cooperation and Development [OECD], 2012). In addition to declining performance, a recent nationwide study shows that forty-five percent of students are not actively engaged in the learning process (Gallup, 2013). Furthermore, teacher and principal job satisfaction is at a twenty-five-year low with over fifty percent of teachers reporting they feel under severe stress for much of their workweek (Metropolitan Life Insurance Company, 2013) and seventy percent of all teachers reporting either not feeling engaged in their work or feeling actively disengaged (Gallup, 2013). With low student achievement and engagement, low teacher and principal morale, rigorous standards that require more teacher preparation and professional development, and an ever-expanding teacher and principal accountability system, the education challenges in the U.S. can look insurmountable. If we have any hope for the future, we need to rethink how we conduct education.

Problem Statement

Although no silver bullets exist, there is overwhelming evidence from the literature on successful school systems that restructuring schools to make time for job-embedded professional learning with a relentless focus on continuous improvement will not only

improve student learning and achievement but also improve teacher morale and increase accountability (Barber & Mourshed, 2007; Darling-Hammond, 2013; DuFour & Fullan 2013; DuFour & Mattos, 2013; Fullan, 2011, 2014; Hargreaves & Shirley, 2012; Tucker, 2011)–all things that current reform efforts are desperately trying to accomplish but with limited success. Despite such near-universal agreement among educational scholars and practitioners alike, we see very little professional learning in U.S. schools (OECD, 2014a; Schmoker, 2006; Wie, Darling-Hammond, Andree, Richardson, & Orphanos, 2009). Why aren't more schools, districts, and states adopting the best practices that have been proven to be successful? This absence of professional learning in schools provides a compelling need to understand more thoroughly the change process that embodies the structural and cultural shift necessary to create the conditions essential for teachers to engage in professional learning, and particularly the role leadership must play to create the conditions for successful implementation. If we are to mitigate the myriad problems in education described above, it is imperative that we use what we already know–what has been endorsed and championed by educational leaders and practitioners across the country and across the globe: restructuring schools to embrace collaboration and engage in job-embedded professional learning has the potential to dramatically improve the current state of affairs and set us on a bright path for the future.

There are probably a number of reasons that job-embedded professional learning is not ubiquitous in schools. It could be that principals have never actively participated in professional learning and therefore find themselves without the declarative and procedural knowledge to lead it, support it, or create the conditions necessary for it to flourish. Perhaps the inertia of an entrenched culture characterized by teachers working in isolation is simply

too difficult to overcome. Or, maybe the daily challenges of finding time within the workday for teachers to meet and engage in professional learning is the obstacle: sufficient time is necessary to establish the conditions of professional learning (Darling-Hammond, 1999). If school leaders do not have the resources–time and staff–to make professional learning an integral component of the professional workday, they may feel any attempt to do so is futile and respond by doing nothing.

Given the importance of professional learning with a relentless focus on continuous improvement, it is imperative that we understand the dynamic between how teachers engage in job-embedded professional learning, the cultural shift that happens as a result, and the barriers to implementation. A deeper understanding of this dynamic will enable school leaders to more effectively create the conditions under which professional learning has the opportunity to flourish. The results of this study will add to the body of knowledge necessary for the education community, policy makers, school districts, principals, and teachers to analyze existing school conditions and begin to eliminate barriers to and create opportunities for implementing the change process. Additionally, they will be better equipped to make good decisions and design and implement training and support programs to ensure professional learning becomes the norm rather than the exception in all schools.

The need for this study is significant because the sense of urgency to improve education outcomes and teacher and principal morale and engagement has never been higher. And, since the evidence is clear that restructuring schools to support teams participating in job-embedded professional learning with a focus on continuous improvement improves both student outcomes and teacher morale and engagement, there is a compelling need to

understand this dynamic with the intent to help proliferate this practice to as many schools as possible.

Purpose of the Study

Increased accountability measures, low student achievement and engagement, low teacher and principal morale and engagement, and more rigorous standards that require greater teacher preparation and professional development are colliding in a perfect storm of challenges. However, the overwhelming agreement among scholars and practitioners, based on the evidence of the world's most successful school systems, that restructuring schools to make time for job-embedded professional learning with a relentless focus on continuous improvement will improve student learning and achievement, increase teacher morale, engagement, and accountability (Barber & Mourshed, 2007; Darling-Hammond, 2013; DuFour & Fullan 2013; DuFour & Mattos, 2013; Fullan, 2011, 2014; Hargreaves & Shirley, 2012; Tucker, 2011) provides a sense of hope for the future. It also provides a sense of urgency to understand what it takes to create the conditions of possibility.

The purpose of this study is to add to the body of knowledge of creating effective professional learning opportunities focused on continuous improvement by specifically identifying the influence job-embedded professional learning has on school professional culture. A clearer understanding of how school professional culture can be influenced through job-embedded professional learning and leadership actions will no doubt be beneficial to informing the education community at large, policy makers, districts, individual schools, principals, and professional development providers who design policy and training.

I conducted this descriptive qualitative study to examine the dynamics of creating and maintaining these conditions. Specifically, I sought to explore this research question, "How

do job-embedded professional learning and leadership influence school professional culture and what are the implications for leadership?" I analyzed the myriad variables that contribute to implementing job-embedded professional learning with the hope of better understanding why or why not it was successful. The results of this study will add to the body of knowledge in order to inform the Math and Science Academy (MSA), the U.S. Bureau of Indian Education (BIE), the education community, policy makers, districts, and professional development providers on how to proceed with restructuring schools, and implementing training and support programs to ensure professional learning becomes the norm rather than the exception in all schools.

Position of the Researcher

Understanding how to create the conditions in which professional learning, characterized by teams of teachers working collaboratively with a relentless focus on continuous improvement, is particularly important for the organization that I work for, The Los Alamos National Laboratory Math and Science Academy (MSA), and the Bureau of Indian Education (BIE), the overseer of our seven current partner schools. The Los Alamos National Laboratory Math and Science Academy is an intensive and comprehensive professional development (PD) program designed to support continuous improvement of teaching and learning mathematics and science. The goal of MSA is to significantly improve math and science education in participating school districts. This goal is being accomplished through an intensive professional learning program for participating teachers, focused on mathematics and science content, pedagogy, and on building whole systems professional learning capacity. There are four program objectives (MSA, 2012):

1. Increase teacher content knowledge for teaching mathematics and science that bridges content knowledge and knowledge about the practice of teaching.
2. Increase teachers' use of research-supported practices to conduct effective math and science lessons in their classrooms.
3. Develop school and district leadership capacity that supports continuous improvement in teaching and learning.
4. Ultimately, improve student learning and achievement in math and science in northern New Mexico.

All components of the MSA program focus on standards-based education, research-based best practices in teaching math and science, and math and science content that is closely connected to the curricula being taught. To accomplish these goals, we engage teachers and principals in a three-week summer institute that includes one week of mathematics or science content instruction and two weeks of instructional best practices focused on assessment, student engagement, brain-based learning, effective instruction, and math and science writing. The MSA staff teaches all of the summer institute courses and conducts on-going support and follow-up at each school site throughout the school year. In addition, teachers attend an all-day professional development in math content once per month for a total of eight days during the school year. In total, teachers attend over 150 hours of formal professional development each year. The MSA theory of change model in Figure 1 and Appendix A show the specific program activities that are intended to lead to short term outcomes, long term outcomes, and then ultimately improved student learning and achievement.

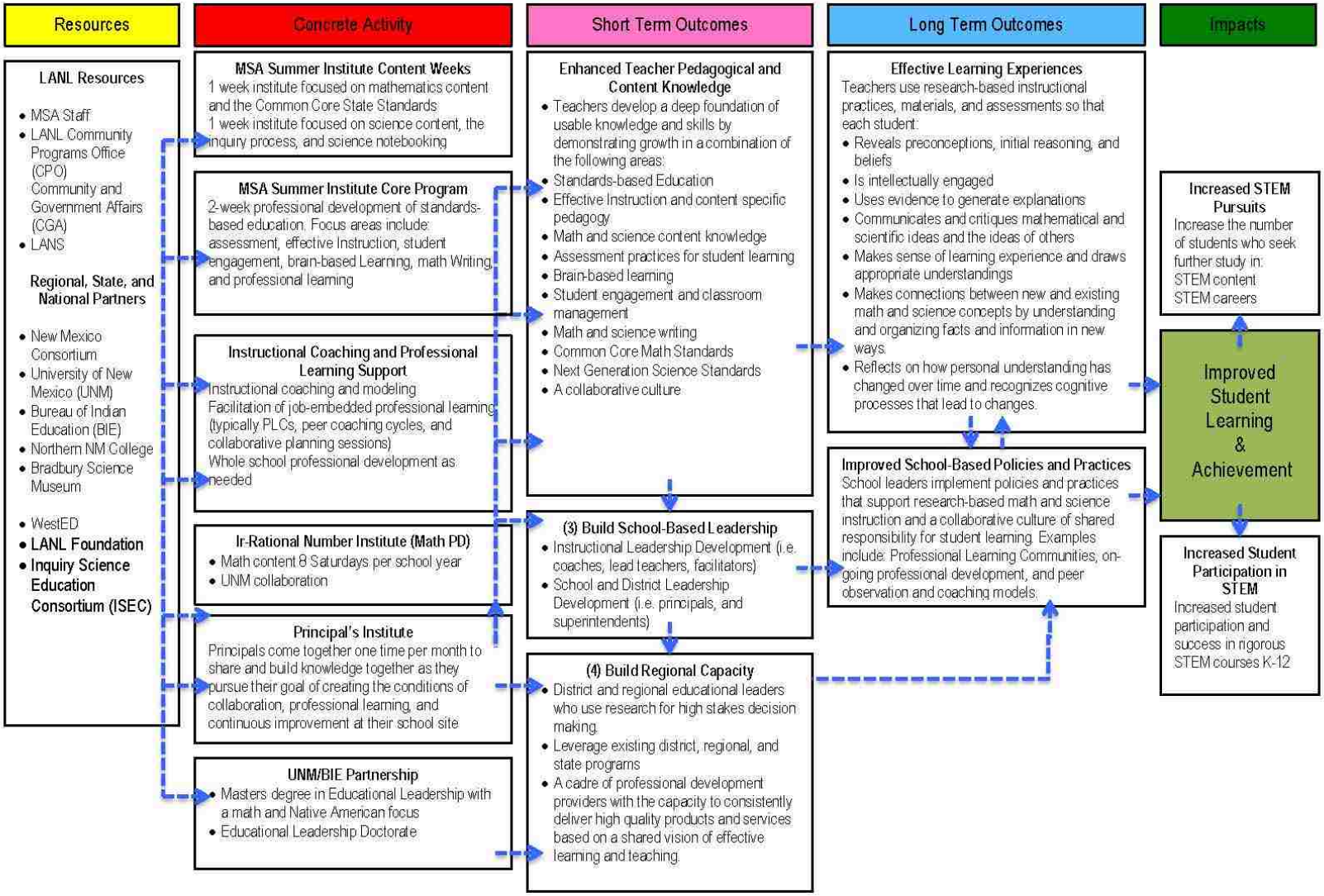


Figure 1. The Los Alamos National Laboratory Math and Science Academy theory of change model.

In addition to copious formal professional development, the MSA program includes a comprehensive school-year support component. Historically, the school-year component has been characterized by the fact that MSA staff work individually with teachers to provide instructional coaching, content and pedagogy support, and modeling for teachers. Typically, members of the MSA team would conduct three or four coaching visits per teacher per semester. In 2013, however, the MSA team had an opportunity to modify the in-school component. Rather than supporting teachers mostly on an individual basis, we shifted our efforts toward supporting teams of teachers working together in continuous improvement cycles. Mostly, this consisted of two professional learning activities: (1) peer coaching cycles, and (2) teachers reviewing student work together driven by the four critical questions (see the definition of terms section later in this chapter). Peer coaching cycles were characterized by two or three teachers coming together to discuss a lesson in a pre-conference led by the teacher being observed, observing their peers teach the lesson, gathering again for a post conference to debrief the lesson, reflecting on what was learned, and finally, working together to develop an action plan to improve teaching and learning in the classroom. Throughout the coaching cycle the Goals, Access Prior Knowledge, New Knowledge, Application, and Summary (GANAS) Effective Instruction Framework guide the discussion. The GANAS framework is an observation and planning tool that contains the elements of research-based effective instruction. Additionally, it helps teachers make sense, and implement, the best practices they learn throughout their three-year duration in the Math and Science Academy.

The second professional learning activity consisted of teachers reviewing student work together guided by the four critical questions. This process was beneficial for many

reasons. First, a focused review of student work typically generated rich conversations around content and content specific pedagogy. Second, the process provided deep insight into student thinking, which allowed, if necessary, teachers to make informed decisions about next steps in their teaching, and design interventions. Both of these professional learning activities provide the collaborative teams with new learning and insight that is vital to any continuous improvement process.

Despite clear evidence of increased student performance, and gains in change in teacher practice and content knowledge and beliefs over its fourteen-year history, MSA has yet to see student proficiency results in its partner schools surpass the level of sixty five percent. In part, this results from the fact that, despite the high quality and generous amount of professional development and school year support MSA provides, teachers still have to make the choice to improve–MSA does not have the positional authority to mandate the change. In fact, our only lever is the trusting relationships we build with teachers and principals and the quality of our professional development and professional learning. MSA cannot hold teachers directly accountable for changing their teaching practice–this is the job of the principal and the organization itself; without effective leadership and a school structure to support professional learning, even copious amounts of professional development may result in very little change.

In 2012, the Math and Science Academy program had an opportunity to modify how it conducts its school-year support for teachers. As a result of a partnership with two Bureau of Indian Education (BIE) schools, MSA, for the first time, was able to engage the entire school staff in its three-year program and work much more closely with the principal. The BIE schools in New Mexico are overseen by the Bureau of Indian Education Line Office in

Albuquerque. The line officer has control over funding, compliance, and hiring the principal for each school. The principals, in conjunction with the local school board, are responsible for hiring teachers and support staff. With the support of the each school principal and the BIE Line Office–which provided additional financial support for teachers by extending their contracts to participate in formal professional development–we were able to have a more meaningful impact on the entire system of schools.

In 2013, MSA partnered with two additional schools, another BIE school, and one tribally controlled grant school. Tribally controlled grant schools are still funded by the Bureau of Indian Education but are independently operated. The tribe has complete control over all aspects of the school, and employees of the school work directly for the tribe. For the grant school partnership, we had the support of the principal, the school board, and tribal officials. This multi-level support allowed us to work with leadership to improve the entire school system as opposed to only working with teachers.

These new partnerships provided an opportunity to shift from a professional development program with a school year follow-up component that focused mostly on coaching individual teachers to a professional development and learning program with more of a focus on job-embedded professional learning within the school day. Our work shifted to supporting teams of teachers working together and learning from one another together in professional learning during the school day. This close partnership allowed MSA staff to work more closely with principals to support professional learning and experiment with leading job-embedded professional learning at our partner school sites.

After only one year of implementing job-embedded professional learning at one school, our preliminary data showed this program shift was promising. External evaluation

reports from the 2013/2014 school year indicated that teachers were inspired to work with their colleagues, observe them teach, and were gaining tremendous insights from one another as they watched each other teach and collaborate around the review and discussions of student work. Everyone agreed—the teachers, the principal, and the MSA team–that something was different about the school atmosphere after the professional learning was up and running on a weekly basis. Teachers reported a satisfaction with their new learning. For many teachers, their participation in peer coaching cycles was the first time they were given the opportunity to observe their colleagues. Additionally, they reported that being observed by their peers, although stressful, provided the positive peer pressure necessary to spend real time preparing for their lesson–an action that ultimately resulted in a more effective lesson. They reported this by way of evidence of student learning and student feedback–a noticeable change, many admitted, from their average lesson. Additionally, teachers pointed to a new transparency within the school. Since everyone had the opportunity to observe each other and review each other's student work, the climate and culture underwent a noticeable shift. Teachers found themselves sharing and building knowledge together for the first time and then were able to celebrate each other's successes and support each other when necessary. Transparency, it turned out, fueled excitement, celebration, and a renewed sense of professionalism. These results–collected from qualitative interviews twice during the year–were unexpected and proved very exciting. In conducting the evaluation, the MSA team was primarily looking to determine if teachers were making a shift in their teaching practices as a result of their involvement in MSA. What we learned was quite surprising: not only did teachers report teaching differently, and that they understood the content at a deeper level, they also reported feeling a new joy and excitement around teaching and learning–they

reported feeling more engaged in their work. From our perspective this excitement translated into motivation to improve their practice even more and seemed to build confidence and fuel creativity and experimentation. Although these positive benefits were not explicitly stated in our theory of change model, it was these positive unexpected consequences of professional learning that piqued the interest of the MSA team and ultimately fueled my interest in conducting this research study.

If we were able to generate this much excitement among teachers after just one year of implementing professional learning activities focused on continuous improvement, then imagine the impact after two or three years with even more insight into the process. Therefore, there is a compelling need to understand the group dynamics that led to teachers feeling a renewed sense of excitement for their profession. As it turns out, the new structure of the MSA model is remarkably similar to what many of the world's most successful school systems are doing–high quality professional development coupled with restructuring the school day to allow for teachers to work collaboratively in professional learning communities focused on continuous improvement. I explore the relationship between the MSA model and high-performing schools in more depth in the next chapter.

Our initial results indicating a renewed sense of excitement around teaching addresses directly the problem of low teacher morale and engagement noted in the introductory paragraphs. These preliminary findings reach far beyond improving MSA and its partner schools. Better understanding of how to improve school professional culture and teacher morale and engagement is vital information for public education departments, school districts, and individual schools. Without a deep understanding of the variables that directly

influence school professional culture and teacher morale and engagement, these organizations will struggle to implement policy changes successfully.

Broad Social, Political, Economic, and Educational Background for the Study

In this section, I review several areas from the literature that provide a compelling argument to restructure schools to make job-embedded professional learning with a focus on continuous improvement the foundation of any school. First, I provide some historical context to the frenzy of education reforms sweeping the nation. Second, I discuss the status quo of our over one-hundred-year-old model of education–explaining why isolation has led to mediocrity–and why the teacher evaluation system really does need to be overhauled. Third, I discuss the climate of accountability that has swept the nation–arguably a good thing–but explain that using top-down accountability measures alone is not the most effective approach. Fourth, I explain why the adoption of CCSS, a more robust set of standards than many states previously used, will require a different way of teaching and thus require teachers to learn from one another in new ways in order to be effective. Fifth, I briefly review the highlights from the successful schools literature and explain how the findings clearly point in favor of restructuring the school day to embrace job-embedded professional learning. Sixth, I argue that what has passed historically for professional development must be replaced by something very different–job-embedded professional learning–if we are to realize our true potential of schools. And finally, I make the case for restructuring schools based on the literature from business, which clearly emphasizes the importance of learning teams and leaders who can foster cultures of continuous learning.

The Current Context of Education Reform

Over the last fifteen years we have seen myriad education reforms attempt to revolutionize the education system. Some of the most popular strategies include providing school choice characterized by charter schools and the decentralization movements of the late 1990's and 2000's. According to Hargreaves and Shirley (2012) both of these reforms are driven by the belief that markets will solve our education challenges. Another popular strategy (Ravitch, 2013), includes the use of technology to drive individual learning– typically referred to as cyber academies. The reality, however, is that neither the reliance on technology nor our faith in the mystique of the capitalist market place with competition, choice, and financial incentives have improved education (Hargreaves & Shirley, 2012; Ravitch, 2013). After more than a decade in existence, these savior attempts are not providing any better education to students than public schools (Ravitch, 2013). Additionally, the No Child Left Behind Act (NCLB) legislation and the subsequent Race to the Top Legislation (RTTT) place an extreme emphasis on a variety of reform measures that to date have no convincing evidence to support them. Some of the RTTT strategies include promoting the use of the value-added model in order to reward the teachers with the highest test scores and punish those who do not perform (Hargreaves & Shirley, 2012). Other strategies include rewarding the "turnaround models" where the entire school staff is removed and replaced (Hargreaves & Shirley, 2012). Despite the allure and occasional academic improvement, these efforts also come with serious unintended consequences. Hargreaves and Shirley (2012) contend that the noted reform measures will not improve the system as a whole and they clearly do not align with what high-performing schools are doing.

One of the most notable and particularly disconcerting attempts at reform is the popularity around merit pay based on student test scores. Many states' teacher evaluation systems include using test scores to determine merit pay for teachers (Ravitch, 2013). However, doing so has many unintended consequences such as narrowing of the curriculum, disincentive to collaborate with colleagues, disincentive to work with the neediest students, and the incentive to cheat (Baker, Barton, Darling-Hammond, Haertel, Ladd, Linn, Ravitch, Rothstein, Shavelson, & Shephard, 2010).

The basic premise is that the United States seems to be caught up in a frenzy of searching for quick-fix solutions to right our nation's education ship. This frenzy, coupled with partisan politics and market influences, seems to blind us from learning from others, the nations and school systems around the world that have made and are continuing to make dramatic improvements.

The Status Quo

There is universal agreement among the education community and society at large that every child in the school system has a right to a well-educated, competent teacher (Baker et al., 2010). Teachers who are proficient in their content area and know how to deliver that content effectively through proven pedagogical techniques should be teaching students (Baker et al., 2010). Additionally, teachers have the most influence on student outcomes of any school-based factors (Hattie, 2009; Marzano, 2003). Unfortunately, when we look across the United States, we do not find effective teachers in every classroom (Weisberg, Sexton, Mulhern, & Keeling, 2007). Furthermore, there is no coherent system in place for good instructional practices to be proliferated and for ineffective ones to die (Schmoker, 2006). The Bill and Melinda Gates Foundation (2010) reported, "most schools in our nation ignore

the differences between teachers" (p. 1). Part of the reason stems from the fact that the majority of schools today are still structured so that teachers operate in isolation (DuFour, DuFour, Eaker & Many, 2010; Fullan, 2014). Schmoker (2006) contends the "system we place our teachers in, with its isolation and lack of constructive feedback or supervision, ensures that most of what we see is at odds with good practice" (p. 16). This quote directly addresses the fact that teachers, in the United States at least, have been given the autonomy to do mostly as they please within the confines of their own classrooms. In general, throughout the twentieth century, one could argue that most students and society were served relatively well (DuFour et al., 2008; Schmoker, 2006). Unfortunately, the situation today is very different; the global economy demands more from our education system. We can no longer be competitive practicing the teaching profession in isolation and on gut instinct alone. We need a mechanism built into the system to ensure that all educators, teachers especially, are first nurtured, and then continuously supported to improve their practice guided by research. United States students' scores on the PISA exam, a test for fifteen-year-olds that measures problem-solving abilities, declined over the last fourteen years while test scores from students in several other nations improved dramatically (Organization of Economic Cooperation and Development [OECD], 2014b). To compete in the global workforce, we can no longer settle for the status quo. As Collins (2001) states, "Good is the enemy of great. And that is one of the key reasons why we have so little that becomes great. We don't have great schools, principally because we have good schools" (p. 1). We need to shed the reputation of the status quo and take a more scientific approach to improving schools by developing them into learning organizations with a relentless focus on continuous improvement: doing so will

tap the motivation, talent, and creativity of our current teaching force and radically improve the entire system.

Unfortunately, our current state and national dialogue centers on top-down accountability measures, often placing teachers as the root cause of many of our problems. Although this dialogue is helping to create a sense of urgency to improve education, it is important to recognize that complacency used to describe the status quo stems from larger problems within the entire system–teachers are in fact a product of the system. In the next section, I discuss that when resources are invested to build the capacity of the entire system, and when transparency replaces isolation, peer accountability is the best mechanism to erase the practices of the status quo.

Lateral vs. Top-down Accountability

There is little evidence that reform measures relying only on accountability have improved student outcomes (Barber & Mourshed, 2007; DuFour & Fullan, 2013; Hargreaves & Shirley, 2012). Rather, the evidence points to the necessity of building the capacity in teachers and principals to create and maintain a culture of professional learning and job-embedded continuous improvement. Compelled by a sense of urgency to improve education, many policy makers around the country are "mandating structural reforms such as adopting new policies for teacher evaluation, merit pay to reward high-performing individuals, or sanctions for schools whose students do not perform well on state assessments" (DuFour & Fullan, 2013, p. 22). Does research support these top-down accountability measures? After researching education policy and systems change across the globe, Fullan (2011) claimed that stringent accountability measures can "at best tighten up an otherwise loose system and get temporary pockets of improvement, but can never establish the conditions for whole

system reform" (p. 8). This is exactly what happened after NCLB: schools and districts across the country tightened up their loose ends and made improvements; but unfortunately, those improvements did not result in dramatically improved outcomes for students. Worse, leading with accountability measures can yield negative results (Fullan, 2011)–something we are seeing first hand across the country as teacher morale and engagement plummet.

In summary, all the evidence from the successful school literature points to a theory of change model that embraces capacity building as the leading driver (Barber & Mourshed, 2007; DuFour & Fullan, 2013). Echoing these sentiments, Darling-Hammond (2014) claims that although there is unanimous agreement that the current teacher evaluation system must be overhauled, simply raising the accountability stakes will not improve the quality of teaching. Rather, she contends that what the country really needs is "a conception of teacher evaluation as part of a teaching and learning system that supports continuous improvement" (Darling-Hammond, 2014, p. 1). When teachers are engaged in problem solving with each other and learning becomes the work, they hold each other accountable: transparency creates peer accountability and the entire system improves (Fullan, 2008).

Rigorous Standards Will Require Making a Shift to Professional Learning

Forty-six states signed on to adopt the Common Core State Standards (Common Core State Standards Initiative, 2014). These standards for mathematics and language arts are significantly more rigorous than most states' previous standards and require teachers to teach in dramatically different ways in order to ensure student learning. In mathematics, for example, teachers will need to make the shift from teaching procedurally to a more conceptual approach–one that will ensure a deeper understanding of the concept and in turn allow students to solve more complex problems (Coggshall, 2012a). Many teachers across

the country are not currently teaching this way, nor are they prepared to teach this way. Deliberate efforts must be made by teachers to deepen their own content knowledge and pedagogical practices in order to be successful (Coggshall, 2012a). This shift will not come easily for most teachers; however, it can be done with deliberate actions. It will require teachers working together in teams sharing and learning from one another (DuFour & Fullan, 2013; Kanold & Larson, 2012; Learning Forward, 2011; Schmoker, 2006). "This new paradigm shift for professional development envisions mathematics teachers and other specialists collaborating interdependently to deepen their knowledge of mathematics' pedagogical content and competencies, and expects action on that knowledge with application to practice" (Kanold & Larson, 2012, p. 12). This, by definition, is job-embedded professional learning with a focus on continuous improvement. The literature on professional development is clear: the most powerful forms of professional development occur within the context of the school and classroom (Coggshall, 2012a; DeMonte, 2013; Guskey, 2003; Guskey & Yoon, 2009). Creating a professional learning environment within the school day that is ongoing ensures that learning is directly connected to the problems within the school and classroom. If the education community is serious about successfully implementing the Common Core State Standards, redesigning schools to accommodate the structural and cultural shift necessary to support the paradigm shift is imperative.

Research Question

The purpose of this study was to develop a richer understanding of the dynamic that occurs when teachers engage in job-embedded professional learning characterized by continuous improvement. The primary research questions are, "how do job-embedded professional learning and leadership influence school professional culture? And, what are the

implications for leadership?" Job-embedded professional learning relates to the types and conditions of professional learning teachers experience as defined partly by the concrete activities identified in the MSA theory of change model and partly by the professional learning that happens at each school site. I wanted to find out more information about the professional learning process itself and more about the actions of leadership that either enabled or not the conditions necessary for professional learning. Additionally, I wanted to learn more about how the professional learning process and leadership actions influence how teachers think about and conduct their work, how they feel about their work and their colleagues, and to what degree they are engaged in their work and satisfied with their job–all influences on school professional culture. The second question addressed how to apply the findings of part one to inform leadership. Given that there are so many variables associated with the successful implementation of job-embedded professional learning–structure, time, human resources, capacity of the teachers, professional learning designs, the quality of the professional development providers, discussion norms, a trusting environment, use of effective discussion protocols, among others, my goal was not to validate a particular theory. Rather, I anticipated themes to emerge from the data that could then be pieced together with the intent of deepening my understanding of this complex dynamic.

Research Paradigm

I chose a blend of inquiry paradigms–constructivism and advocacy/participatory worldviews–as a way of thinking about this study as well as a guide to action. Social constructivists "seek understanding of the world in which they live and work" (Creswell, 2007, p. 20). My intent was to develop a grounded theory of how job-embedded professional learning influences school professional culture. In order to explore this question, I probed the

thinking of participants through a series of in-depth interview questions. I constructed these questions in a way to allow the participants to make sense of their experiences as they thought through their answers. The intent was to allow themes to emerge from the data in order to construct meaning. Although my research paradigm was grounded in constructivism, I had a clear agenda for conducting this research–advocating on behalf of teachers and principals for conditions that will allow them to be more successful in their work. Creswell (2007) claims that the "basic tenet of an advocacy/participatory world view is that research should contain an action agenda for reform that changes the lives of participants, the institution in which they live and work, or even the researchers' lives" (p. 21). My motivation for conducting this study derived from an acute awareness that the system in which teachers and principals work needs to be transformed. I intend for this work to contribute to the literature base that will ultimately help fuel a sense of urgency to change the system. For this reason, my work on this study can be characterized as advocacy research. In addition to a constructivist and advocacy worldview, this research study is characterized to some degree as participatory. I was a participant in the process because of my close relationship with teachers and my role as a participant in many of the professional learning activities. My responsibilities in this role are loosely defined but include such activities as leading professional development, facilitating professional learning cycles, collaborative planning, and celebrating successes. Throughout the duration of the research project, I continued to play the role of leader, coach, and peer as well as researcher.

Conceptual Framework

The conceptual framework for this study is based on the change process. Change is a difficult process consisting of myriad variables making it complex and often overwhelming

(Bolman & Deal, 2013; Fullan, 2001, 2008; Hargreaves & Fink, 2006; Kotter, 2012; Reeves, 2009). Fullan (2001) explained the competency of *understanding change* as being grounded in the understanding that change is incredibly complex. He is adamant in saying that change cannot be controlled or managed, and that at our best, we can only hope to understand it in order to lead it more effectively. The primary intended outcome of implementing job-embedded professional learning is to change how teachers and school leaders go about doing their work and so that the school itself becomes a learning organization focused on continuous improvement. Therefore, it is helpful to place the work of job-embedded professional learning in a framework of the change process. I used the MSA theory of change model as shown in Figure 2 (also shown in more detail in Figure 1 and Appendix A). I also used an adapted version of Fullan's theory of change (2008). The MSA theory of change model attempts to link concrete activities to short and long term outcomes, which are intended to transform how teachers teach and how they conduct their work in order to improve student learning. The purpose of my work was to study the influence of the professional learning dynamic, as facilitated by the MSA model, and leadership actions on school professional culture.

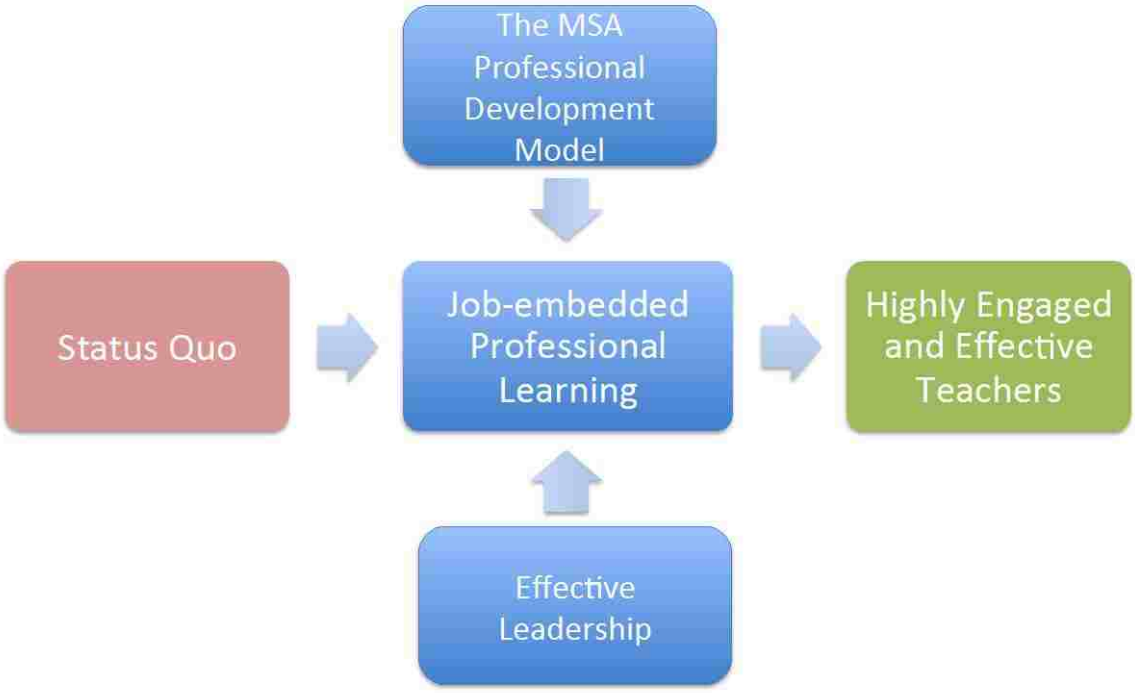


Figure 2. Abbreviated theory of change model for this study.

In theory, when schools engage in job-embedded professional learning combined with the MSA Professional Development Model and effective leadership the result should yield highly engaged and more effective teachers. The MSA theory of change model presented in Appendix A illustrates how the MSA program components work together toward three short-term outcomes: (1) to enhance teacher pedagogical content knowledge and best practices in teaching, (2) develop capacity for professional learning within the workday, and (3) build school leadership capacity and sustainability. The long-term outcomes are characterized by improved learning experiences for teachers and improved school-based policies and practices. This theory of change model is very consistent with the practices found in the literature on high-performing schools. However, since MSA is interested primarily in improving teaching and learning in order to improve student achievement, the theory of change model does not explicitly list the psychological outcomes

that generally characterize school professional culture. These qualitative outcomes, however, are extremely important, some of which include teacher morale and engagement, professional confidence, intrinsic motivation, and creativity among others. It is these qualitative outcomes that I intended to understand more fully through this qualitative study.

In addition to the MSA theory of change model, it is also helpful to view the change process, and specifically, the concrete activities of the MSA model through the lens of *The Six Secrets of Change* shown in Figure 3: (1) love your teachers, (2) connect peers with purpose, (3) capacity building prevails, (4) learning is the work, (5) transparency rules, and (6) systems learn (Fullan, 2008).

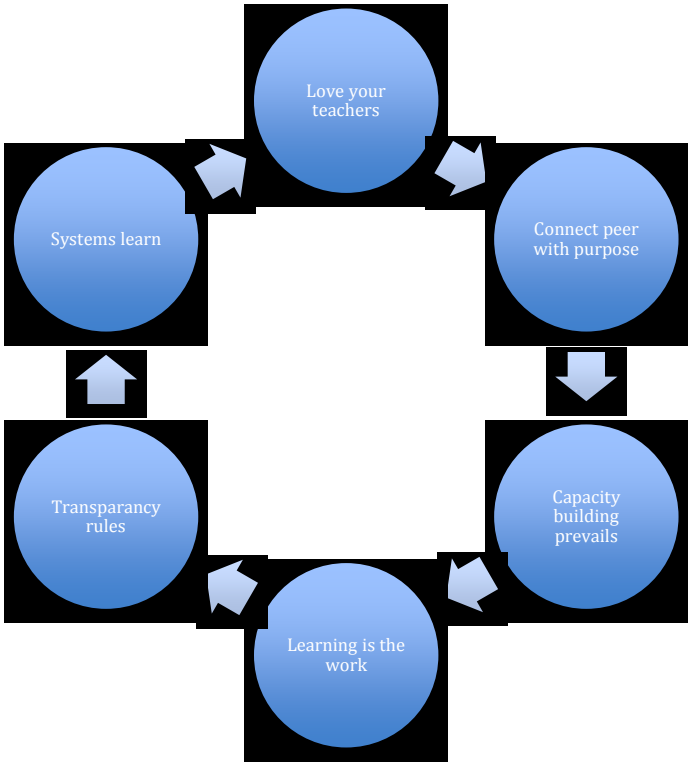


Figure 3. Six secrets of change, Adapted from Fullan (2008).

Fullan's (2008) change process was particularly relevant for this study as it encompasses the influence of the entire MSA model that includes both formal professional

development activities as well as job-embedded professional learning and formal celebrations. Although quite simple, this theory is a powerful and clear way to organize ideas, and with very little modification it takes up all elements of the MSA model and the change process necessary to transform schools into learning organizations focused on continuous improvement. Additionally, it is consistent with the research on high-performing learning organizations. Further, this theory of change, along with my leadership model presented at the end of Chapter Two, helped guide the design of my research interview questions. The interview questions, although intended to determine the influence of school professional culture, were guided by this overall idea that if one successfully uses the theory to guide and lead the change process, school professional culture will improve. In the literature review, I directly link each concrete action of the MSA model to the work of Fullan (2008) and other scholars.

Definition of Terms

Collaboration–Teachers working together in the pursuit of common goals in the process of continuous improvement to improve student learning.

Formal Professional Development–"Refers to the varied programs and activities teachers participate in to obtain knowledge, skills, and qualifications. Professional development can serve diverse purposes: individual professional growth and career advancement, instructional and school improvement, support of program and technology implementation. Professional development can consist of coursework, conference attendance, workshops, institutes, mentoring, coaching, or action research. Professional development is usually vendor driven, with external experts providing the training, and teachers often experience it as a set of discrete activities with little follow-up. Professional development

tends to be undifferentiated no matter the teachers' needs, prior knowledge, or experience and often does not support teachers in solving immediate problems of practice" (Coggshall, 2012a, p. 4).

Professional Learning–"Refers to planned and organized processes that actively engage educators in cycles of continuous improvement guided by the use of data and active inquiry around authentic problems and instructional practices. The primary purpose of professional learning is instructional improvement; thus, the content of the learning is around the content knowledge, skills, and dispositions teachers need to help students perform at high levels. Professional learning is typically collaborative and is embedded in teachers' daily work throughout the school year. Professional learning is aligned with teachers' professional goals as well as with school and district improvement goals and priorities. Professional learning is sustained through follow-up, feedback, and reflection to support transfer to teachers' schools and classrooms" (Coggshall, 2012a, p. 4).

Job-embedded Professional Learning (JEPL)–Job-embedded professional learning can be defined as learning that occurs on a regular basis and is grounded in day-to-day teaching practice. It should consist of teachers working collaboratively guided by professional learning designs with the goal of finding solutions to immediate problems of practice. Typically these designs include analyzing students' learning to inform instruction and intervention design, analyzing teaching practice, and collaborative planning. Job-embedded professional learning may also include teachers engaging in authentic learning themselves focused on content or specific pedagogical content knowledge. All job-embedded professional learning should be driven by the continuous improvement process, aligned to

standards, school curricula, and school improvement goals (Croft, Coggshall, Dolan, Powers, & Killion, 2010; Darling-Hammond, 2013; Hirsh, 2009).

Learning Community–"Professional learning that increases educator effectiveness and results for all students, occurs within learning communities committed to continuous improvement, collective responsibility, and goal alignment" (Learning Forward, 2013, p. 15).

The Three Big Ideas of a PLC–(1) "A relentless focus on learning for all students, (2) A collaborative culture and collective effort to support student and adult learning, and (3) A results orientation to improve practice and drive continuous improvement" (DuFour & Fullan, 2013, p. 14-15).

Continuous Improvement (CI) based on the Four Critical Questions–

1. What is it we want our students to learn? What knowledge, skills and dispositions do we expect them to acquire as a result of this course, this grade level, and this unit of instruction?
2. How will we know if each student is learning each of the skills, concepts, and dispositions we have deemed most essential?
3. How will we respond when some of our students do not learn? What process will we put in place to ensure students receive additional time and support for learning in a way that is timely, precise, diagnostic, directive, and systematic?
4. How will we enrich and extend the learning for students who are already proficient?

(DuFour & Fullan, 2013, p. 14-15)

Leadership–"The ability of an individual to employ practices that mobilize others to want to make extraordinary things happen in organizations. It is the ability to transform

values into actions, visions into realities, obstacles into innovations, separateness into solidarity, and risks in rewards" (Kouzes & Posner, 2012, p. 2).

School Professional Culture–"The complex pattern of norms, attitudes, beliefs, values, ceremonies, traditions, and myths, that are deeply engrained in the core of the organization" (Barth, 2001, p. 198).

Peer Coaching–Peers work together to increase their effectiveness and student learning by observing one another and providing feedback. "Peer collaboration involves co-pondering and co-learning. Without a perceived expert, all participants have equal responsibility to act as coach and client (at different times). This type of coaching can help reduce teacher isolation, make effective teaching strategies more transparent, and support the habit of reflective practice" (Killion, Harrison, Bryan, & Clifton, 2012, p. 44).

Research Design/Methodological Framework

For this qualitative research study, I employed the methodology of grounded theory. Creswell (2007) describes grounded theory as qualitative research design that uses data (observations, interviews and site related documents) from between twenty to twenty-five participants to develop a theory from the ground up. Additionally, I used the approach of systematic procedure, and thus I "systematically develop[ed] a theory that explains process, action, or interaction on a topic" (Creswell, 2007, p. 64) until all categories were saturated.

My intent was to study the perceptions of how teachers feel about participating in job-embedded professional learning and the continuous process and how their experiences influence their morale and engagement, commitment to their work, their creativity, and how they feel about and interact with their colleagues. Additionally, I was very interested in understanding the role of the principal in the process of job-embedded professional learning.

For example, I wanted to know what actions the principal takes to enable or not the conditions required for professional learning to occur. I designed interview questions intended to tease out these specific actions. I collected interview data from both teachers and principals based on participants' experience, perceptions, emotions, actions, and interactions. Additionally, I used Math and Science Academy evaluation data as necessary to help me develop a more comprehensive grounded theory. The MSA evaluation data were in the public record and I could access the data without the permission of MSA or the individual teachers, principals, or schools.

Assumptions

The schools in my study are all predominantly Native American (5 Bureau of Indian Education run schools and one tribally controlled grant school) schools that are located within tribal reservation boundaries. Also, school staff consisted of several Native American staff members, teachers and principals. I further recognize the schools in my study are unique, as one hundred percent of the students they serve are Native American children; are located within Native American communities; and include many Native American staff members, teachers, and principals. However, my intent was not to understand Native American culture and schooling; I was solely focused on school professional culture. I made the assumption that teaching professionals, no matter their ethnic background or culture, will develop certain professional characteristics, behaviors, and mindsets based on the organization where they work. It is these organizational characteristics and dynamics that I was interested in, not the dynamics that take place outside the organization.

Delimitations of the Study

The study design was limited to the Math and Science Academy's partnership schools. All teachers in this study received similar professional development and professional learning treatment as described earlier in the chapter and under the concrete activities in Appendix A. Briefly, these include three weeks of formal professional development in the summer months, eight additional days of mathematics content throughout the school year, and on-going school year support that consists of individual teacher support and professional learning activities driven by collaborative teams engaged in the continuous improvement process. Limiting the sample size to a small group of teachers receiving the same treatment avoided introducing additional variables that might otherwise complicate the results. According to Creswell (2007), a sample size of twenty to thirty participants should be used in order to ensure that enough detail emerges for the grounded theory. Since I was already working with these teachers and principals as part of my regular job responsibilities, I had assured access to conduct interviews.

Significance of the Study

Increased accountability measures, low student achievement and engagement, low teacher and principal morale and engagement, and more rigorous standards that require greater teacher preparation and professional development are colliding in a perfect storm of education challenges across the United States (Coggshell, 2012a; Gallup, 2013; Metropolitan Life Insurance Company, 2013; OECD, 2012). In a frenzied effort to right the ship, the majority of policy makers, politicians, philanthropists, and the business community seem to be placing their faith in market forces and top-down only reform measures (Fullan, 2011; Hargreaves & Shirley, 2012; Ravitch, 2013). The momentum in favor of these reform efforts

does not seem to be waning despite the fact that many of these same efforts have failed in the past, and most of the new efforts have little evidence that support their viability at scale (Hargreaves & Shirley, 2012). It appears that most people seem to be grasping desperately for solutions without using research and evidence to guide their decision-making. Waiting in the wings, however, is a systems-approach strategy that has been embraced by scholars and practitioners alike (Darling-Hammond, 2013) and is based on copious evidence from the high performing schools literature in the U.S. and the world's most successful school systems. It is not a simple solution, nor is it easy to implement. On the contrary, the strategy involves investing in the continuous development of teachers, restructuring schools to make time for job-embedded professional learning with a relentless focus on continuous improvement, and developing and supporting leaders to develop the conditions that support teams of teachers learning every day. Although this strategy of a whole professional learning system takes time and costs money, variations of it have been shown to dramatically improve student learning and achievement and increase teacher morale and engagement and accountability (Barber & Mourshed, 2007; Darling-Hammond, 2013; DuFour & Fullan 2013; DuFour & Mattos, 2013; Fullan, 2011, 2014; Hargreaves & Shirley, 2012; Tucker, 2011). In addition to the successful schools literature, there is substantial evidence from the business literature that the most successful organizations are those that place a high value on becoming a "learning organization" (Fullan, 2008; Liker & Convis, 2012; Senge, 2006). Senge (2006) maintained, "organizations that will truly excel in the future will be the organizations that discover how to tap people's commitment and capacity to learn" (p. 4). With substantial evidence across professions, redesigning schools in order to create the conditions for "learning organizations" to flourish should be the goal of education leaders. What is troubling, however, is why so few

education leaders and policy makers have embraced this common-sense approach. Whatever the reason, the themes of consistent professional development and professional learning are still complex; many try to retrofit a professional learning model over an existing public school model. There is still a great deal the education community does not understand about how to specifically go about adapting a model to fit within the context of our existing public education system, and in my case, the Bureau of Indian Education system.

Simply copying a model directly from others who may be seeing results is also not the answer. Within every context there are myriad variables that influence implementation–in many cases it is not practical to simply redesign the schools to mimic those in Finland. The context is different, the population, the culture, the training, and so on. Public schooling in America has developed plenty of inertia over its one hundred fifty-year history and changing it too fast could have devastating consequences (Graham, 2005). If, however, we can learn more about the dynamic and results of learning organizations within the school day, the education community will be better prepared to adapt the strategies of successful models to improve our current situation. Through this study, I intended to add to the body of knowledge of how a professional learning system model influences the school professional culture of a school: teacher confidence, expectations, transparency, creativity, teamwork, morale, engagement, overall job satisfaction, and satisfaction with the profession itself. The findings from this study may help the education community, policy makers, districts, and professional development providers determine how to proceed with adapting professional learning models to their own unique context. By understanding the dynamics involved in creating conditions for professional learning–the conditions it takes to create collaborative culture focused on the continuous improvement process–the education community will be better equipped to

support whole scale systems change. This is what we need to make a real impact on student learning and ensure that the teaching profession regains its footing now and into the future.

Summary

I sought to clarify through this study how the education community and policy makers alike can encourage the development of and continued support for professional learning within schools so that the school itself becomes a learning organization. Doing so could dramatically improve teacher morale and engagement and ultimately student performance. By developing a deeper understanding of the dynamic between implementing professional learning within the workday and its influence on school professional culture, we should be in a position to better support practitioners and school leaders to more effectively create the conditions for successful implementation and provide the advocates of change additional evidence needed to make their case. This task is not impossible but it will take time, open minded thinking by the whole education community, and a willingness to change the status quo. Persistence and critical reflection will help us prevail. “Good to great comes about by a cumulative process–step by step, action by action, decision by decision, turn by turn of the flywheel–that adds up to sustained and spectacular results” (Collins, 2001, p. 165).

Chapter Two

Review of the Literature

This literature review draws on several resources: books, journal articles, research studies, and professional literature to explore how job-embedded professional learning influences school professional culture. The literature review is divided into several sections.

The central themes in this research study include: (1) school leadership, (2) management and motivation, (3) professional development and job-embedded professional learning with a focus on the continuous improvement process, (4) the transformational change process, and (5) school professional culture. I start the literature review with the importance of leadership. Next, I examine the literature from the world's top-performing school systems as measured by PISA scores in order to paint a picture of what is possible. I then discuss leadership and management in a historical context, particularly as it connects to what motivates people. Next, I continue by reviewing the literature on professional development in order to show how important it is to replace the old paradigm of professional development with the new definition of professional learning that is job-embedded and has a focus on continuous improvement. I then shift the discussion back to leadership as I describe the conceptual framework that, in light of the preceding topics, leaders should use to guide their decision-making at the schools and whole system level for any meaningful change to take place. Next, I attempt to explain the importance of school professional culture and define how school professional culture is influenced by the continuous improvement model and leadership actions. I then explain the specific actions leaders must take to transform schools through the continuous improvement model. Lastly, I explain why job-embedded

professional learning and continuous improvement have not been effective thus far when implemented in other schools and districts.

The Importance of Leadership in Creating Change

Leadership makes a difference (Bass & Avolio, 1993; Bolman & Deal, 2013; Collins, 2001; DuFour & Marzano, 2011; Fullan, 2001; Kotter, 2012; Kouzes & Posner, 2012; Liker & Convis, 2012). According to Deming (1994) organizations do not spontaneously transform themselves; they only do so under effective leadership. Leadership in education today is very different from just a few years ago. Today's leaders live in a complex world of accountability, high-stakes testing, declining budgets, and diverse student populations with myriad demands. No longer is it sufficient simply to be a building manager by just making sure things run smoothly. In contrast, principals today must be symbolic leaders, instructional leaders, and building leaders all at the same time if they wish to truly transform their organizations (Bolman & Deal, 2013). DuFour and Marzano (2011) stated, "the research now supports what practitioners have known for decades: powerful school leadership on the part of the principal has a positive effect on student learning" (p. 48). What then are the characteristics of leadership that contribute to high student learning and a successful school? Although there are a handful of key characteristics that define effective principals, it turns out that the literature on effective organizations and schools in particular predominantly points to just a couple of key characteristics: (1) building a culture of collaboration focused on results, and (2) creating the conditions for employees/teachers to transform into a learning organization committed to continuous improvement (DuFour & Marzano, 2011; Fullan, 2014; Liker & Convis, 2012; Leithwood, Seashore, Anderson, & Wahlstrom, 2004; Senge, 2006). Supporting this finding, DuFour, DuFour and Eaker (2008) and Darling-Hammond (2014)

maintain that successful school leaders create an environment of high expectations where professional learning is job-embedded, focused on clear learning targets, is collaborative in nature, and data-driven.

Essential to building a culture of collaboration with a focus of continuous improvement is the ability of the leader to effectively communicate the shared vision such that they help to inspire individuals to pursue common goals that create and sustain momentum toward the shared vision (Shulman & Sullivan, 2015). These leadership character traits as exhibited in both transformational and charismatic leadership. Specifically, this is the ability of leaders to inspire individuals to align their own interests and identity with the shared vision and goals of the organizations (Bass & Avolio, 1993; Kouzes & Posner, 2012; Sinek, 2009).

The two types of leadership discussed in the literature most relevant to motivating individuals to pursue a shard vision are transformational leadership and charismatic leadership. According to Burns (1978), transformational leadership is the ability of leaders to convince individuals to put aside their personal pursuits in exchange for a common end goal that benefits the collective interests of the leaders and followers, where leaders and followers are interdependent, and where change is expected and achieved. The author explains what transforming leadership is not: transactional leadership. He explicitly states that when individuals engage in transactions, they may achieve their individual goals but unless they are united by, and collectively pursuing a shared vision or larger purpose, the leadership is not transformative. Building on the work of Burns, Bass and Avolio (1993) further distinguish between transformational leadership and transactional leadership. Transactional leaders work and lead within the existing culture and structure of an organization.

Transformational leaders, in contrast, work to transform the existing culture. They do this by first describing an attractive vision for the future; second, working to understand the existing culture of the organization; and third, taking deliberate actions to change the culture by aligning it with the new vision (Bass & Avolio, 1993). Transformational leaders create an allure for pursing the collective goals and shared vision of the organization, and in doing so, convince individuals to disregard their self-interest in exchange for the interest of the collective. Additionally, transformational leaders help individuals' find significant meaning in their work so that they are motivated by the work itself and the goals of the organization rather than an external incentive (Bass & Avolio, 1993).

Similar to transformational leadership, charismatic leaders also possess the ability to inspire followers to pursue a shared vision with relentless focus. According to Shamir, House, and Arthur (1993), the motivation that followers have to pursue the organization's end goals can be explained by how follows see themselves–their self-concept. The theory posits that charismatic leaders have the ability to connect an individuals' self-concept with the shared vision of the organization so that the goals, commitments, and values of the individuals become an integral part of their identity and moral purpose. Conger (1999) describes four different ways that leaders transform the self-concept of their followers. Charismatic leaders: (1) "change follower perceptions of the nature of the work itself, (2) offer an appealing future vision, (3) develop a deep collective identity among followers, and (4) heighten both individual and collective self-efficacy" (p. 155).

Transformational and charismatic leadership possess similar characteristics to the collegial model of leadership in that they both assume the interests of the collective are embodied within the shared vision (Bush, 2011). Collegial models of leadership:

> Assume that organizations determine policy and make decisions through a process of discussions leading to consensus. Power is shared among some or all members of the organization who are thought to have a shared understanding about the aims of the institution. (Bush, 2011, p. 72)

Since leadership is such a determining factor of the success of a positive school professional culture of collaboration characterized by professional learning with a focus on continuous improvement, it was also a focus of this research study.

Lessons from the World's High-Performing School Systems

Professional learning characterized by teacher collaboration and job-embedded professional learning with a focus on continuous improvement has been proven to improve schools (Barber & Mourshed, 2007; DuFour et al., 2008; Hargreaves & Shirley, 2012; Mourshed, Chijioke, & Barber, 2010; Tucker, 2011; Wei et al., 2009). Evidence shows that high-performing school systems around the world (1) invest in the quality of their teachers from the start, (2) put systems in place to continuously develop the capacity of teachers, and (3) invest in mechanisms that support students at every level (Barber & Mourshed, 2007).

In addition to student outcomes, high-performing schools report high teacher job satisfaction, morale, engagement and self-efficacy as a result of job-embedded professional learning. The Organization of Economic Cooperation and Development (2014a) found that teachers who participate in collaborative professional learning once a week or more experience a high self-efficacy compared to teachers who do not. Additionally, the OECD reports, "when teachers work closely with their colleagues, whether teaching or learning together, job satisfaction increases substantially" (p. 27). Unfortunately, schools in the U.S. fall short of their high-performing peers when it comes to collaboration and professional

learning. On average, teachers in the U.S. spend more time teaching students than their counterparts in other countries (OECD, 2014a; Tucker, 2011; Wei et al., 2009). According to the Organization of Economic Cooperation and Development (2012), Finnish teachers, among the highest performing in the world, teach students 522 hours per year versus 1051 hours in the United States. Slightly less than fifty percent of teachers in the U.S. report that they observe their peers teach, receive feedback on their own teaching, and have opportunities to provide feedback to others. In contrast, over ninety percent of the teachers in Japan and Korea, and over eighty percent of teachers in Singapore and Poland report opportunities to observe their peers, provide feedback, and receive feedback on their own practice–all countries that performed well above average on the Program for International Student Assessment in 2012 (OECD, 2014b).

In most of the high-performing nations, job-embedded professional learning is an expectation of the profession. Japanese teachers, for example, engage in research lessons that entail teachers collaboratively planning a lesson together, observing a colleague teach it, discussing ways to improve the lesson, and then redesigning the lesson–a process of continuous improvement that typically takes 10 - 15 hours per week spread out over a 3 - 4 week period (Stigler & Hiebert, 1999; Wei et al., 2009). Finland is another country that dedicates a tremendous amount of time for collaborative lesson planning and school-based curriculum study. Finnish teachers only spend about half of their contract time engaged in actual teaching; the remainder is dedicated to professional learning activities (Wei et al., 2009). Singapore is another example of a highly ranked country that puts professional learning activities at the center of their daily business. In Singapore, teachers participate in Teacher Network Learning Circles, in which they solve common problems, discuss lessons,

and engage in action research (Tucker, 2011; Wei et al., 2009). The examples discussed above are just a few of the many where collaboration among teachers is the norm rather than the exception. Although each country has a different name for its own process, they commonly resemble the practice of job-embedded professional learning with a focus on continuous improvement.

It is no accident that the high-performing schools mentioned above are leading the pack. Policy at the district, state, and national levels significantly influences the success of any initiative (Fullan, 2011). It takes an active role by all players at all levels within the system to ensure proper implementation, support, and sustainable change of smart policy. A lone school may be able to initiate and maintain changes within its small sphere for a short time, but that change will become harder and harder to sustain over time without systems-level support. The reality is that, policy either enables positive change or it constrains it. The energy of the people within the larger system, if not enabled by coherent policy and subsequent support within the system, will eventually lose steam (Fullan, 2011).

For example, both Finland and Singapore have not always occupied the top places on the world stage in education: in the 1970s both countries had dismal education systems. In both cases, the government made a conscious choice to improve the entire education system. Policy was created that specifically supported the recruitment of talented teachers. Additionally, the profession was made attractive with increased salaries and time to engage in professional learning dedicated to continuous improvement mechanisms embedded in the workday (Hargreaves & Shirley, 2012; Mourshed et al., 2010; Tucker, 2011; Wei et al., 2009). The message is clear: in order to ensure that the system as a whole continuously improves, the responsibility cannot be left solely to individual schools. Rather, smart policy

crafted from a research-based vision must be implemented in a way that it allows for coherence at all levels within the system (DuFour & Fullan, 2013). It should then be up to the district entities to ensure that schools have the necessary resources and support to realize that vision. I am not advocating for a centralized system; my point is that school systems will not be able to make the necessary changes to dramatically improve without a smart policy-driven system that enables and helps sustain what works. Highly successful schools are almost always part of a larger system, district, state, or nation. As a larger entity they have the ability to put systems in place to continuously develop the capacity of teachers and invest in mechanisms that support students at every level (Barber & Mourshed, 2007).

Management in Historical Context

Job-embedded professional learning can be characterized by a number of actions: continuous learning, continuous improvement, and continuous feedback. Although the term job-embedded professional learning tends to be used primarily within the education literature, its origins are firmly rooted in the business literature, dating back to the 1950s, beginning with the work of Edward W. Deming–an icon in the business and management world (Deming, 2013).

However, in order to fully grasp the big picture–to fully understand professional learning in the context of American business and management history–it is necessary to go back another fifty years. To accomplish this goal, I start with a description of the work of Frederick Winslow Taylor, an engineer who pioneered the scientific management movement in the early twentieth century (Pink, 2009). According to Taylor (1939) the real goal of management was to get the most out of workers in order to maximize production–he argued that in order to accomplish that goal it was necessary to apply incentives. Taylor contended

that the generally accepted school of thought for effective management to date was that the workers themselves were solely responsible for the task. Furthermore, the primary role of management was simply to provide monetary gains or improved working conditions to incentivize more work or harder work, which in turn lead to higher rates of production. Taylor (1939) referred to this type of management as "initiative and incentive"–basically a *carrot-and-stick* approach to management. In contrast to the "initiative and incentive" approach, the accepted rule of thought for the previous one hundred years, Taylor (1939) developed scientific management, which was governed by a new set of principles that developed a scientific approach to work. Scientific management was founded on the premise that managers knew best how to accomplish the work, and rather than relying on the "initiative and incentive" approach, work productivity could be maximized by breaking work into specific elements, training workers to accomplish specific tasks, and ensuring that management monitored all aspects of the work (Taylor, 1939). Taylor's scientific management approach effectively split the responsibility of increased work output between the worker and manager–a revolutionary concept at the time–but was still largely predicated on the idea of *carrot-and-stick* management. Scientific management was widely adopted and became the industry standard for more than half a century (Bolman & Deal, 2013). According to Pink (2009), "for as long as we can remember, we've configured our organizations and constructed our lives around its bedrock assumptions: the way to improve performance, increase productivity, and encourage excellence, is to reward the good and punish the bad" (p. 17). In the 1950's and 1960's, however, some interesting dynamics began to occur, catalyzed by both the historical and economic context of the post World War II era and emerging research from the social sciences and business literature. As a result, new

insight emerged that began to unravel the age-old accepted thinking of how to motivate workers and improve work output and quality. First, the simple fact that our society and the economy were evolving, moving from a mostly mechanized industrial economy to one that was more complex, required that workers be equipped with more sophisticated skills (Bolman & Deal, 2013; Pink, 2009). Pink (2009) described this new paradigm as one with more "heuristic" work tasks versus "algorithmic" tasks. Algorithmic tasks require the worker to "follow a set of established instructions down a single pathway to one conclusion" (p. 27). Heuristic tasks in contrast, are more complex and require creative problem-solving skills. As a result of these social and economic changes the "initiative and incentive" approach, the accepted management techniques of the nineteenth century and early twentieth century, as well as Taylor's scientific management principles that had been the norm from the early twentieth century, were starting to be questioned (Bolman & Deal, 2013; McGregor, 1957; Pink, 2009).

In the post-World War II timeframe, two prominent psychologists emerged on the scene that had significant influence on business management practices. The first, Frederick Herzberg, is widely regarded as a pioneer in motivation psychology. The second influential thinker was Abraham Maslow, who became well known for his theory of hierarchy of needs, which first appeared in his 1943 paper, *A Theory of Human Motivation*. Both of these scholars put forth complex theories to help explain human needs and motivation, and these theories significantly influenced the business literature and subsequent practice of the time. Maslow (1943) developed a theory of psychology that described how humans move through a continuum of developmental stages based on needs. These needs listed in order starting from the most basic include: physiological needs, safety needs, love and belonging, self-

esteem, and self-actualization (Maslow, 1943). The author contended that humans must completely meet each need before they can move to the next level. Maslow's work is significant because it helped explain the sociological changes of the economically prosperous times. In other words, as economic prosperity became more and more the norm in the post World War II era, and as the middle class continued to grow, more people found themselves much higher on the pyramid of psychological needs. This dynamic was important because it meant that management had to reconsider how they approached their work if they wanted to motivate their employees effectively.

In a similar vein, Herzberg (1987, p. 113) proposed that two factors were key to explaining how people behaved in the work environment. The first, he contended, were the "hygiene" factors, extrinsic motivators such as compensation and work environment. The second, he explained, were the "motivators" consisting of satisfaction with the work, purpose, and enjoyment. As the second half of the twentieth century progressed, the "motivators" became much more important in the workplace. Another scholar with similar ideas was Douglas McGregor, a psychologist turned management professor, whose seminal work, *The Human Side of Enterprise,* was pivotal in laying the groundwork for management changes to come (Bolman & Deal, 2013; Pink, 2009). McGregor (1957) contended how "under the proper conditions, unimagined resources of creative human energy could become available within the organizational setting" (p. 41). He further claimed that the *carrot-and-stick* approach could work well under certain conditions, when workers yearn for their basic physiological needs, managers have control of these and can use them as leverage. However, as workers increasingly found more of their physiological needs fulfilled (McGregor, 1957), it became virtually impossible to truly motivate them through the *carrot-and-stick* approach.

McGregor (1957) coined the terms theory X and theory Y to describe the new versus old thinking of management. Theory X, he contended, was the view that workers are inherently lazy, prefer to be led by others, and therefore must be controlled with extrinsic motivators. Theory Y, in contrast, assumed that people have an intrinsic need for self-fulfillment needs and are more productive under their own self-direction as long as that direction is aligned with organizational goals (McGregor, 1957).

At roughly the same time McGregor coined the terms theory X and theory Y, W. Edwards Deming, another scholar and practitioner, was helping companies and industry achieve dramatically improved results. Deming, often described as the father of the quality movement, was hard at work helping industry transform (Marzano, Waters, & McNulty, 2005). Deming (1994) professed that management needed a complete transformation. Additionally, he was one of the first scholars to focus on systems thinking, advocating that the secret to quality and productivity was cooperation between components toward the aim of the organization. Deming used systems thinking in his work with Japan and their rebuilding efforts following World War II–an effort, which among other innovations, resulted in Japanese industry capturing much of the vehicle and electronic market in the 1970's and 1980's. Deming (1994) is also recognized for continuous improvement, in particular, the Plan, Do, Study, Act–a model that originated from his work in Japan in the 1950's. Additionally, Deming is well known for his famous fourteen points of management (actions) that he claims are necessary for managers to act upon in order to transform any organization (Deming, 2013). Although my intention here is not to list all fourteen points, I will highlight six management points that are very relevant to school leaders if they intend to create the

conditions within schools for teachers to maximize performance. These management points as discussed by Deming (2013) include:

- creating an unwavering purpose for the organization (p. 107),
- not depending solely on inspection to improve quality (p. 113),
- engaging in a cycle of continuous improvement to improve service (p. 129),
- improving quality and productivity by developing a system of on-the-job training (p. 130),
- creating a robust program of education and self-improvement (p. 130), and
- instituting quality leadership (p. 131).

Many companies and organizations actively implemented and benefitted from the strategies that emerged from Deming's work. I will return to these points later when I discuss learning organizations and professional learning in schools.

Building on Deming's work, Senge (2006) discussed the core disciplines of building a learning organization in *The Fifth Discipline*, originally published in 1990. The five disciplines include: personal mastery, mental models, shared vision, team learning, and systems thinking. In this seminal work, Senge argued that for continuous improvement to occur in any organization the members within that organization must be continually learning, and that for this to occur, there needs to be a structural and cultural shift from how most companies do business. Organizations in general will not be able to meet the challenges of the future until they make the shift to become a learning organization. Senge (1995), in an interview for the professional journal *Educational Leadership*, claimed, "our fundamental challenges in education are no different than in business. They involve fundamental culture changes, and that will require collective learning" (p. 21). Senge (1995) further discussed the

idea that in both business and education much of the effort toward training has focused primarily on improving the skills of the individual. The author contrasts this approach to "enhancing the collective capacity of people to create and pursue overall visions" (p. 20). I will return to the topic of learning organizations later in the chapter when I discuss how they support the work of professional learning and the MSA model.

Although the work of Senge and Deming are borne out of the business literature, they have become the foundation for the quality and continuous improvement movements in education and of contemporary education scholars. Professional learning communities, popularized by the DuFours, the Baldrige Quality movement, and the professional learning movement and standards developed by *Learning Forward* (originally the National Staff Development Council) and others have taken the concept and adapted it to meet the specific needs of educators. However, the big idea presented in most of the recent work on education is the importance for schools to have a mechanism for continuous improvement built into the system. This continuous improvement mechanism should be defined by continuous learning of the individuals involved in the organization and the actions they take to implement their new learning.

Motivation–What Drives Us?

The historical context for management is important because it addresses the evolution of thinking that has emerged from how organizations were typically managed from the beginning of the twentieth century until now, including schools. Although I mentioned motivation throughout the previous section in the discussion of Maslow, Herzberg, and McGregor, I will now focus on motivation as a separate topic, as it is very relevant to twenty-first century education both from the perspective of students and from that of teachers and

the teaching profession. My discussion here will focus on the teaching profession as it relates to creating the conditions within schools to facilitate highly motivated and engaged individuals focused on professional learning and continuous improvement. One of the findings from our yearly evaluation report is that teachers who participate in the Math and Science Academy Program report feeling more motivated and excited about their work over time as they deepen their own learning and engage with others doing the same (Trujillo, 2014). Although this finding is based on a small sample size (data collected from the teachers who are in the MSA program), it is consistent with research findings (Amabile & Kramer, 2011; Pink, 2009; Senge, 2006). These findings related to teacher engagement were also part of the driving force for conducting this research study–I wanted to learn more about how to create the conditions within a school setting that lead to transformation of the school culture. Below I describe the literature on motivation, specifically intrinsic motivation–what drives people and sustains their interest and passion for work.

First, I think it is necessary to define intrinsic and extrinsic motivation, as they are the terms most encountered in the literature and the terms I will use throughout my discussion. According to Amabile (1993), "individuals are intrinsically motivated when they seek enjoyment, interest, satisfaction of curiosity, self-expression, or personal challenge in their work" (p. 188). Ryan and Deci (2000) describes intrinsic motivation as "the natural inclination toward assimilation, mastery, spontaneous interest, and exploration" (p. 70). Amabile further contends, "individuals are extrinsically motivated when they engage in the work in order to obtain some goal that is apart from the work itself" (p. 188).

Building on the work of social scientists before them, Ryan and Deci (2000) conducted research around extrinsic and intrinsic motivation in the 1970's. The authors

concluded that, “extrinsic rewards can undermine intrinsic motivation” (Ryan & Deci, 2000, p. 70). Additionally, the authors discussed their meta-analysis in 1999 where they reviewed over 128 studies–their conclusion–all the research confirmed their original finding. This finding was significant because it provided further evidence that the age-old model of management to achieve results–the use of *carrots-and-sticks*–was not the most effective way to produce results. Ryan and Deci (2000) described in their Self Determination Theory (SDT) that humans have psychological needs and if the right conditions are present they are not just intrinsically motivated but more productive and content with their lives. Those needs, the authors posit, consist of autonomy, competence, and relatedness. Pink (2009) describes the body of research on SDT and intrinsic motivation as mostly drawing the same conclusion: “human beings have an innate inner drive to be autonomous, self-determined, and connected to one another. And, when that drive is liberated, people achieve more and live richer lives” (p. 71). According to Amabile and Kramer (2011), the inner work life system plays a significant role in one’s individual performance. They described the inner work life system as perceptions/thoughts, emotions/feelings, and motivations/drive. Figure 4 shows the inner work life system.

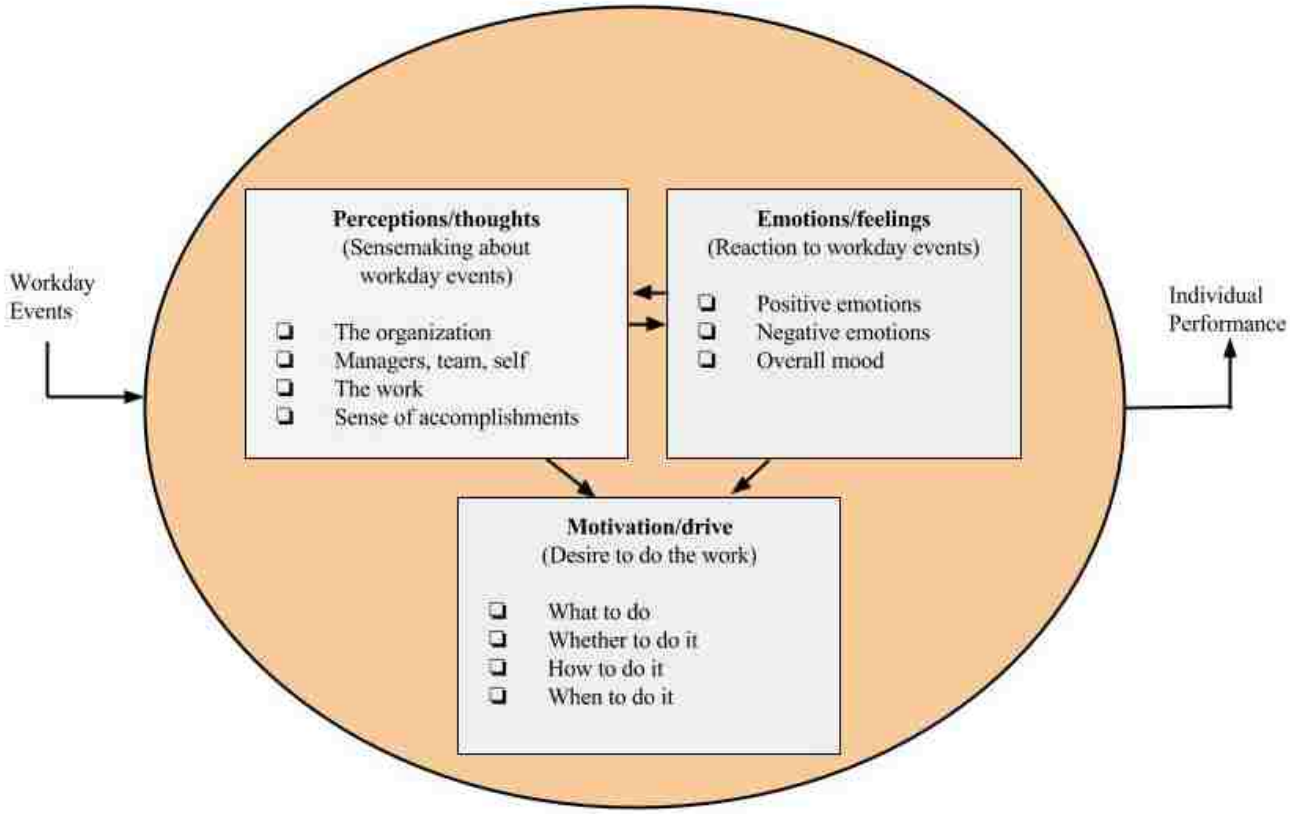


Figure 4. The Inner Work Life System (Amabile & Kramer, 2011).

When an individual worker's inner work life is healthy, they are more creative, productive, committed, and collegial (Amabile & Kramer, 2011). This begs the question of what are the workday events that contribute to one's positive inner work life. Based on a recent study, Amabile and Kramer (2011) determined that three key influences contribute to inner work life, the greatest of which is when people make progress in their work (the progress principle). Figure 5 shows the key three influences on inner work life.

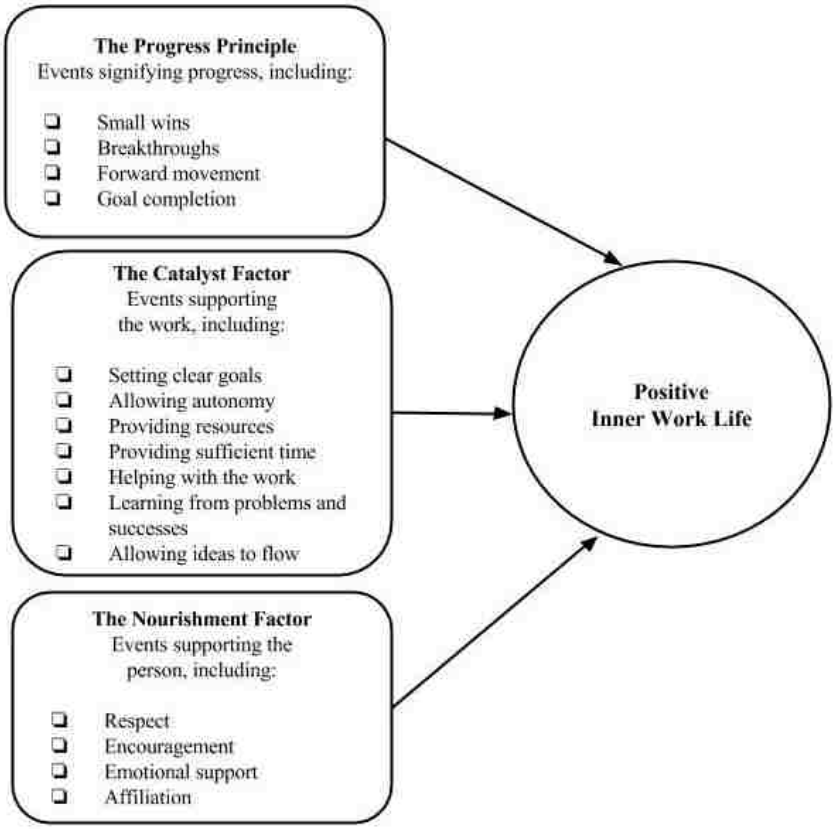


Figure 5. The Key Three Factors of Inner Work Life (Amabile & Kramer, 2011).

These finding are consistent with those from the work of Ryan and Deci (2000) on intrinsic motivation as well the psychology literature in general. These findings are significant because they inform leaders of the characteristics necessary to create the conditions for high-functioning organizations to thrive, specifically, how to more effectively engage people in their work. Professional learning, defined by collaboration focused on the continuous improvement process, is the built-in mechanism that facilitates progress and thereby contributes to one's improved inner work life. I will return to these conditions later in the paper when I discuss the MSA model and how the design is meant to promote and sustain change.

Another important theory in psychology is found in the work of Mihaly Csikszentmihalyi. According to Csikszentmihalyi (1997), the effect of synergistic team learning can be described as "Flow." *Flow* is "an effortless action that happens when a person's skills are fully involved in overcoming a challenge that is just about manageable so it acts as a magnet for learning new skills and increasing challenges" (p. 47). People are highly engaged and energized when they are in a state of flow. Csikszentmihalyi (1997) describes the potential for achieving a state of *flow* at work: "*flow* activities allow a person to focus on goals that are clear and compatible and provide immediate feedback" (p. 47). Figure 6 displays the graphic of the flow channel.

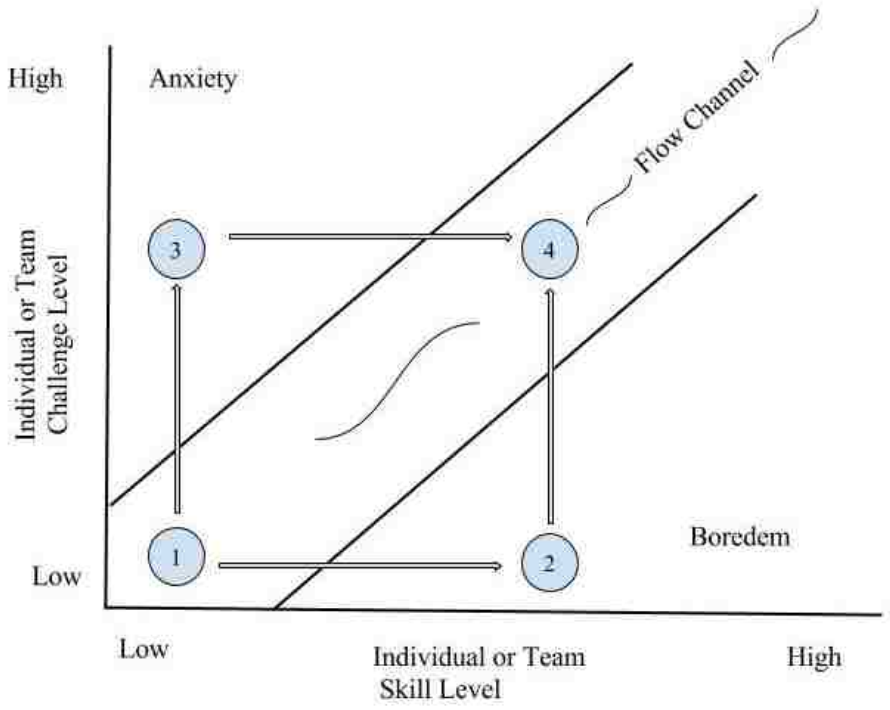


Figure 6. The Flow Channel is adapted from Csikszentmihalyi (1990).

When individuals and teams of teachers have an equal match of challenge and skills, they will be in the *flow* channel and more likely to feel highly engaged and energized in their work. In contrast, if skill level and challenge level are not matched, the results can be either

anxiety or boredom–neither one is a good option. The concept of *flow* can be overlaid nicely onto the three key influences of inner work life as it relates directly to the progress principle, the catalysts factor, and the nourishment factor. Additionally, the concept of *flow* is particularly important for leaders of professional learning designs and continuous improvement because it helps explain the conditions for optimal engagement. I will return to the flow channel later in the chapter when I discuss the MSA model and my leadership model for maximizing teacher engagement and effectiveness.

One frequently discussed topic in education is the concept of the growth versus fixed mindset. According to Dweck (2008), "the growth mindset is based on the belief that your basic qualities are things you can cultivate through your efforts. Although people may differ in every which way–in their initial talents and aptitudes, interest, or temperaments–everyone can change and grow through application and experience" (p. 7). In contrast, Dweck defines the fixed mindset as the belief that talent and success is based on one's innate ability. There is clear evidence that people who possess the growth mindset tend to be more content with their lives and more successful over time (Dweck, 2008). An understanding of mindset is critical to the education profession as it is necessary to help students overcome entrenched and negative self-perceptions. It is also very relevant to professional learning, especially in the areas of mathematics and science where teachers may not feel they are experts, or worse yet, may even try to avoid the subjects for lack of confidence. Job-embedded professional learning is critical to the teaching profession as it brings teachers together to solve math and science problems, promotes conversation and dialogue around math concepts and strategies, and ultimately builds confidence. If teachers who are willing to engage in the process of continuous learning–wherever they are on the continuum of content knowledge–they will

gain confidence that should then translate into improved teaching. Dweck (2008) reinforced this point when she discussed former General Electric CEO Jack Welch by saying that he chose employees based on their potential and capacity for growth.

In his book *Drive*, Pink (2009) builds on McGregor's Theory X and Theory Y when he discusses Type I and Type X behaviors. Type I behavior he claims, "concerns itself less with the external rewards to which an activity leads and more with the inherent satisfaction of the activity itself" (p. 75). Type X behavior in contrast "concerns itself less with the inherent satisfaction of the activity and more with the external rewards to which the activity leads" (p. 75). Similar to the Self Determination Theory (Ryan & Deci, 2000), Pink contends that Type I behavior requires "three nutrients: autonomy, mastery, and purpose. Type I behavior is self-directed. It is devoted to becoming better and better at something that matters. And it connects that quest for excellence to a larger purpose" (p. 79). Not surprisingly, these nutrients required to create the conditions for Type I behavior are supported in the literature (Deming, 1994; Fullan, 2008; Senge, 2006).

In summary, the ideas presented in this section are critical for education leaders to understand in order to create the conditions of high quality professional learning and continuous improvement within schools. Leaders must understand that the nutrients of motivation are grounded in autonomy, mastery, confidence, purpose, and relatedness. Additionally, they must understand the difference between a growth and fixed mindset; be able to facilitate optimal experiences for their teachers; and understand that progress, above all, is the greatest contributor to one's inner work life. I will weave the ideas of intrinsic motivation throughout this paper as they apply directly to the understanding of the MSA Model, the conceptual framework of change that I discuss later in the chapter, and as they

form the foundation for a healthy school professional culture, which was the purpose of this research study.

Job-Embedded Professional Learning, Collaboration, and Continuous Improvement

High quality and effective professional development. The most important school-based factor that influences student learning and achievement is the classroom teacher (Hattie, 2009; Marzano, 2003). We know that one pathway to improving the knowledge and skills of teachers is by providing the opportunity to attend high-quality professional development. The term "professional development" is ubiquitous in education circles, but what does the term really mean, and does it mean the same for everyone? Mizell (2010) reported, "the most effective professional development engages teams of teachers to focus on the needs of their students. They learn and problem solve together in order to ensure all students achieve success" (p. 1). Teachers who do not participate in effective professional development do not improve their practice, and as a result, student learning suffers (Mizell, 2010).

So what does effective or high quality professional development look like? Before I respond to this question, let me first consult the research on how people learn–the foundation on which high-quality professional development is built. According to Donovan and Bansford (2005), research on learning and cognition is vital to designing high-quality professional development. The authors claim that four environments support learning: (1) a learner-centered environment–where new knowledge is constructed on students' prior knowledge; (2) a knowledge-centered environment–one where the learning goals are clear, the importance for learning is clarified, and what proficiency looks like is clear; (3) assessment-centered environment–where on-going formative assessment to ensure that students are learning what is intended and to inform instructional adjustments if sufficient

progress is not being met; and (4) community-centered–where the learning takes place in a community of learners who value and practice risk-taking, respect for opposing ideas, and questioning.

Despite scientific advances in our understanding of how people learn, there remains disagreement on the definition of effective and high quality professional development (Guskey, 2003). Scholars and organizations such as Learning Forward have researched the effectiveness of teacher professional development in hopes of distilling the characteristics down to a cogent list. Learning Forward (2011), formerly known as the National Staff Development Council, has dedicated the last decade to determining characteristics of effective professional development, which have resulted in the development of the Standards for Professional Learning. These include: learning communities, leadership, resources, data, learning designs, implementation, and outcomes.

Guskey (2003) examined several published lists of effective professional development produced by 13 different professional organizations including the American Federation of Teachers, Association of Supervision and Curriculum Development, National Institute of Science Education, The U.S. Department of Education, and others. Each organization derived its list in a different way; each "used different criteria to determine 'effectiveness,' and varied widely in the characteristics they identified" (Guskey, 2003, p. 748). Additionally, although most of these lists could technically be described as researched-based, only a couple actually investigated the relationship between characteristics, change in teacher practice, and increases in students' learning (Guskey, 2003). Among the common characteristics were: (1) enhanced teacher content and pedagogical knowledge, (2) sufficient time, (3) promotion of collegiality, (4) structure and purpose, and (5) alignment to curriculum

and other reform efforts. Although Guskey's findings demonstrate that a comprehensive list of characteristics may never emerge, he insists that the education community needs to continue working toward agreement on their criteria for "effectiveness" in order "to improve the quality of professional development endeavors" (Guskey, 2003, p.750).

Additional studies reveal similar findings. A synthesis of the professional development research by Yoon, Duncan, Lee, Scarloss, and Shapley (2007) published in a Southwest Regional Educational Laboratory report confirmed the considerable challenge of connecting professional development to change in teacher practice and student learning outcomes. A review of the evidence found no statistically significant effects on student achievement when teachers participated in professional development between five and fourteen hours (Yoon et al., 2007). In contrast, however, the synthesis revealed that teachers who received substantial professional development, 49 hours or more, were able to boost their students' proficiency scores by about 21 percentage points. Guskey (2003) and Yoon et al. (2007) contend that "effective professional development requires time; the time must be well structured, purposefully directed, and focused on content or pedagogy or both" (p. 497).

Despite the absence of a definitive list, we do know enough to get to work. DeMonte (2013) reports that "in many ways professional development is the link between the design and implementation of education reforms and the ultimate success of reform efforts in schools" (p. 2). Other scholars echo the call by claiming that:

> Improving professional learning for educators is a crucial step in transforming schools and improving academic achievement. To meet the federal requirements and public expectations for school and student performance, the nation needs to bolster teacher skills and knowledge to ensure that every teacher is able to teach increasingly

> diverse learners, knowledgeable about student learning, competent in complex core academic content, and skillful at the craft of teaching. (Wei et al., 2009, p. ii)

The intended purpose for providing what the research tells us about effective professional developed is two-fold. First, it is intended to point out that professional development is extremely complex and that our understanding of it is continually evolving. Second, despite the lack of a universal consensus of the exact characteristics, engaging in professional development is critical to changing teacher practice and ultimately seeing results in student learning and achievement. The characteristics listed below are the ones that appear most frequently in the literature and are all necessary to ensure that professional development is of high quality (Garet, Porter, Desimone, Birman, & Yoon, 2001; Guskey, 2003; Learning Forward, 2011; Yoon et al., 2007; Wei et al., 2009).

- Aligns to school and district goals, curriculum and other reform efforts
- Focuses on core content knowledge aligned to state standards
- Focuses on active learning of pedagogical knowledge and best practices
- Ensures coherence with other learning activities
- Promotes collegiality and time for collaboration
- Includes follow-up coaching support with continuous feedback
- Is job-embedded and sustained over time
- Provides teachers with 50 or more hours per year.

The purpose of professional development programs is to catalyze change in the way teachers practice, change teachers' beliefs and attitudes, and ultimately to improve student learning (Guskey, 2002). Teachers typically engage in professional development because they have a genuine desire to improve their practice by improving their knowledge and skills

but also because they believe that it will help their students learn. The order in which change occurs is critical for professional development designers to understand. Guskey (2002) insists that change in teachers' beliefs and attitudes will not occur until teachers see the evidence of improved learning outcomes as shown in Figure 7.

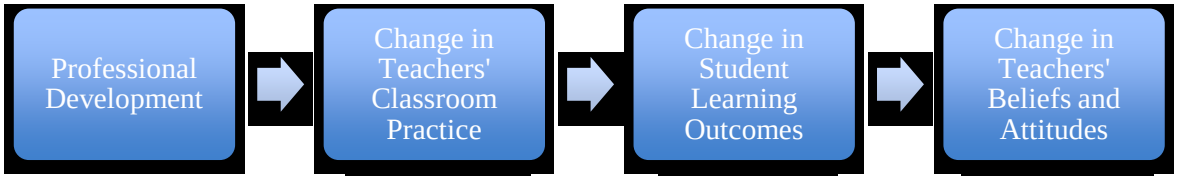


Figure 7. A model of teacher change (Guskey, 2002, p. 383).

Most professional development is predicated on the assumption that teachers' beliefs and attitudes will change first and that they in turn will leave the professional development experience and be willing to implement what they have learned. Based on the research, however, Guskey (2002) claims teachers' beliefs and attitudes about their practice will not change until they see clear evidence of results–improved student leaning based on some form of assessment. This is why a continuous improvement model is essential to the professional development process. First, it ensures that what is learned is transferred into practice because teachers set both student and teacher goals and then hold each other accountable for implementing, assessing, and then reflecting on the effectiveness. Since the continuous improvement process requires that teachers assess student learning–and that reviewing evidence of student learning is a collaborative task–there is always the presence of positive peer pressure to implement what is effective. In essence, the continuous improvement process is the vehicle by which teachers can turn the shared vision into reality (DuFour & Fullan, 2013; Kanold & Larson, 2012).

There are three principles that support Guskey's (2002) model of teacher change. The first principle acknowledges that change is a slow process and that teachers will feel a certain amount of anxiety, fear, and reluctance during the process. Additionally, facilitating change requires that leaders who intend to change build personal relationships with the people that wish to change (Bolman & Deal, 2013; Fullan, 2001). The second principle states that teachers must receive immediate and reliable feedback on the progress of their students' learning (DuFour et al., 2008; Guskey, 2002). Teachers need to see evidence of change in student learning, because without it, they may be inclined to abandon the change in favor of what feels comfortable (Guskey, 2002). Therefore, timely feedback about one's teaching practice is critical to sustaining any change initiative. The third principle insists that simultaneous support and pressure are necessary in order to see student learning outcomes improve. Since the model requires teachers to act first, it is critical that all high-quality professional development have a built-in mechanism to support teachers and simultaneously provide positive pressure to insure consistent implementation. Furthermore, it is very costly to retain professional development providers and even instructional coaches, a continuous improvement process built into the system is the best mechanism to ensure accountability. Of course, teachers and the mechanism need nudging and support in the form of monitoring and high expectations connected to the shared vision from the school leader. Collins (2001) refers to this concept as the flywheel effect. At first it requires tremendous energy to move the flywheel. After it begins to build momentum, however, it becomes easier to keep it in motion. The three principles explained above are essential for professional developers, designers, and school and district leaders to understand.

The Math and Science Academy model has traditionally been about delivering content professional development, then coaching and providing feedback in the classroom. However, there has never been a built-in mechanism of accountability–one that ensures teachers implement the best practices they learn in the program. Job-embedded professional learning within the school day, driven by the continuous improvement process and monitored by a school leader, is the mechanism that provides the positive peer pressure and lateral accountability necessary to instigate change. This in turn leads to improved student learning outcomes and then to change in teacher beliefs and practice (DuFour & Marzano, 2011; Fullan, 2008, 2010; Kanold, 2011).

Formal professional development. Formal professional development is typically defined as workshops, in-service training, summer institutes, or university courses, and is usually conducted by an outside expert (Coggshall, 2012a; Wei et al., 2009). Effective formal professional development should be consistent with the first three characteristics above: (1) it aligns to school and district goals, (2) is linked to curriculum and other reform efforts, (3) focuses on core content aligned to state standards, and (4) it focuses on active learning of pedagogical knowledge and best practices.

According to Wei et al. (2009), 95% of U.S. teachers reported participating in some form of formal professional development during the school year 2003-04. In a 2012 National Survey of Science and Mathematics Education, Banilower, Smith, Weiss, Malzahan, Campbell, & Weis (2013) reported that 59% of elementary teachers, 82 % of middle school science teachers, and 85% of high school science teachers received science-focused professional development in the last three years. The numbers are slightly higher for mathematics: 87% of elementary teachers, 89 % of middle school math teachers, and 88% of

high school math teachers. On the surface, these statistics paint a rosy picture. However, when teachers reported on the number of hours spent participating in professional development in the last three years, the situation appears grim. Elementary teachers spent only four hours, middle school teachers 31 hours, and high school teachers 32 hours on math-focused professional development in the last three years. Yoon et al. (2007) found that teachers must participate in 50 or more hours of professional development in a year in order to see significant student learning gains. This does not mean that all professional development that does not meet this mark is meaningless. However, it is a lesson to school and district leaders, as well as policy makers, that simply participating in professional development will not translate to noticeable student learning outcomes unless it is sufficient in length and developed based on the accepted characteristics of high quality professional development described above.

Job-embedded professional learning (the continuous improvement model). In order to maximize the gains of formal professional development, it must have a job-embedded component; there must be mechanism within the school system to ensure that what is learned in the formal professional development setting gets transferred to the classroom and becomes part of a teacher's professional practice. This component is vital to the equation because so much of professional development is also context-based. Schools that help teachers realize this transfer of formal professional development to classroom practice by supporting them and holding them accountable to engage in a continuous improvement process are the ones that realize the largest gains.

In Chapter One, I discussed how DuFour and Fullan (2013) and Fullan (2011) advocate for the right drivers, explaining that capacity building, social capital, instruction,

and “systemness” have been shown to achieve much higher results than accountability-only reforms. What do these terms mean exactly, and how do they translate into change at the school and district level? It turns out that a large part of all of the drivers can be explained through job-embedded professional learning with a focus on continuous improvement. Job-embedded professional learning can be defined as learning that occurs on a regular basis and is grounded in day-to-day teaching practice. It should consist of teachers working collaboratively guided by professional learning designs with the goal of finding solutions to immediate problems of practice. Typically these designs include analyzing students’ learning to inform instruction and intervention design, analyzing teaching practice, and collaborative planning. Job-embedded professional learning may also include teachers engaging in authentic learning themselves focused on content or specific pedagogical content knowledge. All job-embedded professional learning should be driven by the continuous improvement process, aligned standards, school curricula, and school improvement goals (Croft et al., 2010; Darling-Hammond, 2013; Hirsh, 2009). Job-embedded professional learning is fundamentally about educators working together to solve problems around student learning, and while doing so, experiencing tremendous learning themselves.

Croft et al. (2010) claimed, “similar to students as learners, teachers as learners benefit from multiple opportunities to learn. Those opportunities are created when teachers are afforded the time, space, structures, and support to engage in job-embedded professional development” (p. 8). Additionally, Coggshall, Rasmussen, Colton, Milton, and Jacques (2012b) claimed, “a growing consensus among researchers and practitioners suggests that the most effective teacher learning activities (i.e., those that improve instruction and, in turn, student achievement) involve forms of job-embedded professional learning” (p. 4). Further,

according to Wei et al. (2009), “there is increasing consensus that the most effective forms of professional development are those that are directly related to teacher instructional practice, intensive and sustained, integrated with school-reform efforts, and that actively engage teachers in collaborative professional communities” (p. 39). Job-embedded professional learning is a continuous improvement process–a mechanism–to engage teachers and principals in becoming better and better every day (DuFour & Marzano, 2011; Kanold, 2011; Killion & Roy, 2009). When professional learning and continuous improvement become part of the structure and culture of the school, it ensures that teachers, administrators, and staff never stop learning, always in pursuit of improvement of students.

One popular and effective model to support job-embedded professional development is through Professional Learning Communities (PLCs), which are defined as groups of educators working collaboratively toward clear goals in an effort to improve teaching and learning (DuFour, DuFour, Eaker, & Many, 2010). The term “professional learning communities” is very prevalent in the education lexicon today and has been for the last ten years. Widespread use of the term, however, does not necessarily mean the practice is common in schools. Although they are becoming more prevalent, particularly in districts that are experiencing student achievement success, almost no one provides the time like the OECD nations described earlier. As Joyce (2004) explains, the concept of PLCs is one thing, but the implementation is quite another. DuFour et al. (2008) ask what it would take to convince educators that engaging productively in professional learning communities is the most promising path to genuinely improving teaching practice and student learning in schools. Canadian policy makers and politicians have embraced professional learning communities as a core component of national school reform (Riveros, Newton, & Burgess,

2011). If there is such a unanimous consensus on the value of PLCs, why is it then that schools across America have not universally adopted the practice? It turns out that all ideas, despite how great and easy they sound, always confront challenges at the implementation phase.

Schmoker (2006) urgently explained that PLCs bring teachers together to plan, implement, assess, and adjust instruction for improvement all within a short cycle time frame. Japuith, Mindich, Wei, and Darling-Hammond (2010) contend that professional learning communities are "one strategy to increase teacher capacity and improve student learning outcomes" (p. 7). Japuith et al. (2010) further reported that the professional learning community model is a significant characteristic of education policy in Colorado, New Jersey, Missouri, and Vermont, the four states where teacher professional learning is high and student achievement scores are on the rise. Additionally, the organization and managements literature points to how successful companies in many cases are those that deliberately invest in becoming learning organizations (Fullan, 2008; Liker & Convis, 2012; Senge, 2006). With substantial evidence across professions, redesigning schools in order to create the conditions for "learning organizations" to flourish should be the goal of education leaders.

As I discuss later in the literature review, leadership at all levels is vital to successfully creating the conditions for job-embedded professional learning and the continuous improvement model to occur (DuFour & Marzano, 2011; Fullan, 2010; Kanold, 2011). It takes effective leadership to lead the creation of a shared vision and monitor and celebrate the actions and accomplishment of the continuous improvement model. Additionally, it takes an effective leader to hold individuals accountable to the shared vision and confront those who choose not to act in alignment with agreed upon behaviors and norms

(DuFour et al., 2008). DuFour and Fullan (2013) contend that job-embedded professional learning–the professional learning community process–"is a cultural transformation with lasting value" (p. 2). I discuss the importance of leadership and the leaders' role in transforming the structure and culture of schools later in the literature review.

Elements and designs of job-embedded professional learning. Despite the desire to do so, job-embedded professional learning cannot be categorized as one or two things; there is no defined recipe and hence no simple solution. Rather, job-embedded professional learning consists of myriad things that when done well allow the continuous improvement cycle to be on going. The most well known in the business community is the problem-solving model, the Plan-Do-Study-Act (PDSA) Cycle. This continuous improvement model is simply a systematic way to solve a problem or improve a process, improving instruction or designing student interventions (Deming, 1994). The PDSA Cycle consists of planning for improvement by defining what will be changed and developing an action plan to initiate the change. Doing involves carrying out the change. Studying entails scrutinizing the results for evidence of what went well and what did not. Lastly, acting consists of either adopting the change because it was effective, modifying it and repeating the cycle, or abandoning the change because it did not achieve the desired results (Deming, 1994).

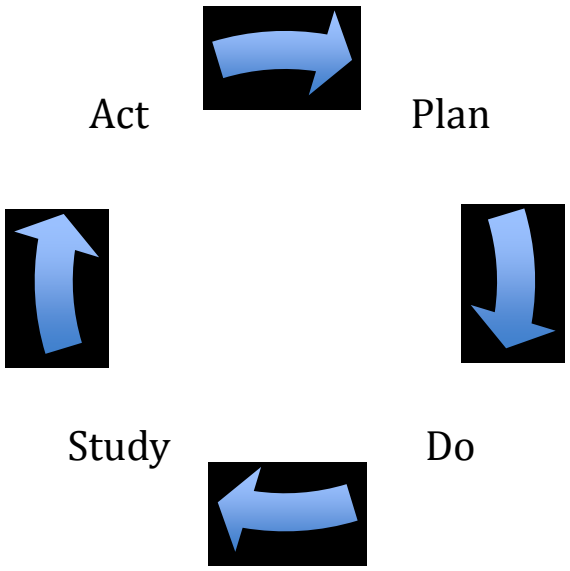


Figure 8. The Plan-Do-Study-Act (PDSA) Cycle: A flow diagram for learning and for improvement of a product or process (Deming, 1994, p. 132).

The continuous improvement process ensures that teachers, administrators, and staff never stop learning; they are always in pursuit of improving student learning. Figure 8 shows the Plan, Do, Study, Act, a generic model used to communicate the continuous improvement process across disciplines. However, any learning design can be inserted into the cycle; I discuss this in more detail later in the study. Croft et al. (2010) and Lewis and Hurd (2011) describe a few examples of job-embedded professional learning designs: conferencing or planning with a mentor to discussing an upcoming lesson; watching video clips of exemplary teaching where best practices are being used, and then engaging in professional discussion afterward; participating in peer coaching cycles and developing action steps based on the findings; and working with colleagues to plan, implement, observe, reflect on, and then adjust instruction for a lesson (lesson study). One powerful form of job-embedded professional learning comes from collaboratively discussing student work (DuFour, Dufour & Eaker, 2008). This effective approach requires teachers to work collaboratively with

colleagues to define the learning outcomes of a lesson, use evidence of student work to determine whether students learned what was intended, and then work together to develop an action plan for next steps. Regardless of the specific professional learning design, the important part is that educators commit to working collaboratively guided by clear goals, and commit to achieving results for students (Deming, 1994; DuFour & Marzano, 2011; Kanold, 2011; Learning Forward, 2011). Additional professional learning designs consist of action research and a variety of discussion protocols used to facilitate focused discussion and feedback.

The three job-embedded professional learning designs most commonly used in the MSA model are the review of student work, peer observations and coaching, and collaborative planning. However, there is not consistent implementation across schools as it depends on resources, time, and the willingness and capability of the school leader to make it an expectation of the job. For example, out of our seven partner schools only three engage regularly in the process of professional learning to look at student work. Of these three, only one school is consistent. Additionally, only one of the schools regularly provides opportunities for teachers to participate in peer coaching cycles and collaborative planning sessions.

As I discussed in Chapter One, forty-six states have signed on to adopt the Common Core State Standards (Common Core State Standards Initiative, 2014). These mathematics and language arts standards are significantly more rigorous than most states' previous standards and in order to meet these new demands, teachers will have to teach in dramatically different ways in order to ensure student learning (Coggshall, 2012a). According to Kanold and Larson (2012) "this new paradigm shift for professional development envisions

mathematics teachers and other specialists collaborating interdependently to deepen their knowledge of mathematics' pedagogical content and competencies, and expects action on that knowledge with application to practice" (p. 12). In order to meet the demands of the new shift, education systems will be required to rethink how schooling is conducted (Darling-Hammond, 2013; DuFour & Fullan, 2013). Although it could take on many forms, the most current thinking for how to tackle this new challenge is to restructure schools to make time for job-embedded professional learning with a relentless focus on continuous improvement (Barber & Mourshed, 2007; Darling-Hammond, 2013; DuFour & Fullan, 2013; DuFour & Mattos, 2013; Fullan, 2011, 2014; Hargreaves & Shirley, 2012; Tucker, 2011). Doing so will not only improve student learning and achievement but also improve teacher morale and engagement, and increase accountability.

Overlaying a Conceptual Framework of Change on the MSA Model

Job-embedded professional learning–the professional learning community process–"is a cultural transformation with lasting value" (DuFour & Fullan, 2013, p. 2). But what does it take to significantly transform school professional culture in order to become a genuine learning organization defined by teachers collaboratively working together, focused on results, and engaged a continuous cycle of improvement? In order to answer this question, I will now attempt to weave together all of the big ideas presented thus far in the paper. Additionally, I will attempt to overlay a conceptual change framework for transforming schools onto the MSA professional learning model. In order to help organize my ideas, I use the work of Michael Fullan, a prominent scholar on educational change and transformation. Specifically, I use his 2008 book *The Six Secrets of Change* as my lens through which I view the change process. The six secrets of change Fullan outlines include: (1) love your

employees, (2) connect peers with purpose, (3) capacity building prevails, (4) learning is the work, (5) transparency rules, and (6) systems learn (Fullan, 2008). I begin each section by describing the big idea of each secret as presented by Fullan. I then layer on additional scholarly work that support his change premise as well as weave in other ideas presented earlier in the literature review. Lastly, I describe how the current MSA model addresses each of the necessary change components. See Figure 9 for the conceptual framework of the change process.

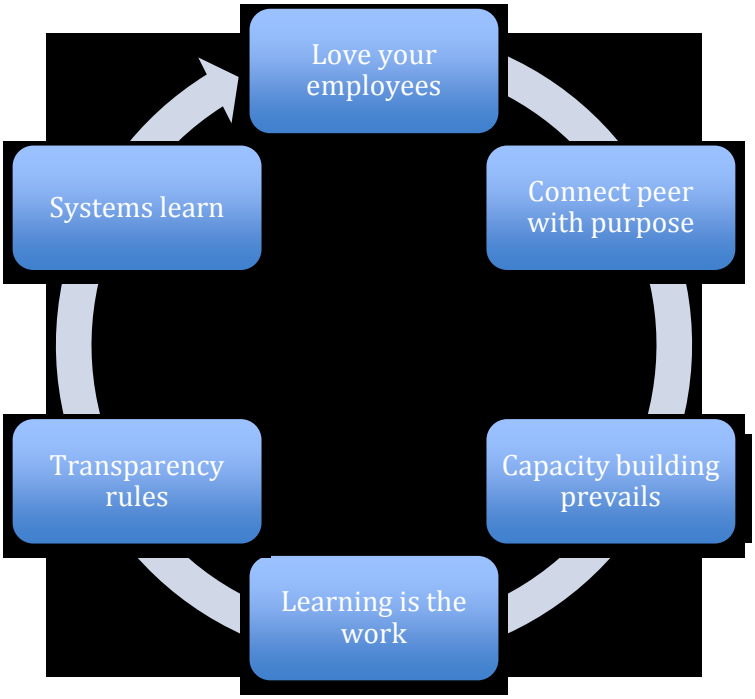


Figure 9. From *The Six Secrets of Change: What the best leaders do to help their organizations survive and thrive* (Fullan, 2008).

Love your employees. Fullan (2008) contends that the first secret of change is to love your employees. The big idea is that employees of an organization must be respected as much as the customers of the organization; in the case of education this means that a clear focus must be on the teachers as well as the students and families in the system. It implies

treating teachers and school leaders as professionals because they are the first and second most influential factors on student learning. Simply put, if the people in the organization are not happy, the organization will not reach its potential. Additionally, loving your employees implies "helping all employees find meaning, increased skill development, and personal satisfaction in making contributions that simultaneously fulfill their own goals and the goals of the organization" (Fullan, 2008, p. 25). The high-performing schools that consistently rank atop the leader board of student performance have made concerted efforts to create the climate and conditions, both physical space and human interactions, necessary for teachers to be successful (Barber & Mourshed, 2007; Fullan, 2008; Tucker, 2011; Wei et al., 2009).

The organizational management scholars provide copious evidence to support the claim that leaders must love their employees. Sisodia, Wolf, and Sheth (2003) compared companies that met humanistic performance criteria–essentially had a people focus–with companies that did not. The researchers concluded that the companies that invested in their employees–had policies in place committed to employee growth, autonomy, and well-being–actually outperformed their control group counterparts–convincing evidence that placing people first works. Companies that met the humanistic performance criteria include Target, Starbucks, Google, Amazon, Trader Joe's, and Southwest Airlines. Additionally, the study found that these same companies had lower employee turnover resulting in a more stable workforce, a factor that ultimately contributed to their bottom line (Sisodia, Wolf, & Sheth, 2007).

Placing the first secret, love your employees, within the context of history assumes that managers and school leaders should not use Theory X to guide their actions. Recall that McGregor (1957) claimed that Theory X managers assume their employees are inherently

lazy, prone to resist change, and need to be directed. Unfortunately, managers who adhere to this philosophy often find their expectations realized (Bolman & Deal, 2013). Despite the data showing that it is not as effective, Theory X still seems to govern many leadership decisions; this is particularly true when we look at many national and state education policy makers across the country. For example, the theory of change for many states' evaluation systems, for example, is designed to be extremely hard on teachers. Many systems place most, if not all, the burden on teachers to improve student learning by tying their pay to how their students do on the annual high stakes test. This strategy mirrors the *carrot-and-stick* approach of Frederick Taylor and follows the prevailing wisdom and management practices of the first half of the twentieth century. What is most troubling is the universal consensus in the research community that these stringent top-down *carrot-and-stick* approaches are not effective (Deming, 1994; DuFour & Marzano, 2011; Fullan, 2008, 2010; Ravitch, 2013).

Theory Y, in contrast, explains that people are not passive by nature, are generally motivated, and will work toward organizational goals in a self-directed way provided the conditions are conducive to doing so (McGregor, 1957). Bolman and Deal (2013) argue that organizations need people and that people also need organizations. Organizations, they claim, rely on the dedication, creativity, and efforts of its employees. Similarly, people rely on financial stability, and myriad other intrinsic and extrinsic rewards provided by the organization. When the needs of the organization and the needs of the people in the organization are not compatible, both suffer, and organizations have no hope in reaching their full potential (Bolman & Deal, 2013). The first secret of change–love your employees–should be used as a guide for all managers and change leaders as the first rule toward achieving the results they truly desire–it is particularly relevant for education leaders and

policy makers. Additionally, Bolman and Deal (2013) purport that proven strategies exist to create high-involvement and high-commitment from people in the organizations and that the secret is for managers to create the conditions of motivation and personal well-being. Although there are many, a few stand out that align particularly well with the conditions for intrinsic motivation mentioned earlier in the chapter. Among these, Bolman and Deal (2013) contend are "to encourage autonomy and participation, redesign the work, and invest in learning" (p. 142). Deming (2013) suggests that the "aim of an organization should be to make sure that everyone involved wins, in particular the employees. Organizations should strive to provide adequate education, training, opportunities for a career path, and other things that contribute to the joy of work and quality of life" (p. 110).

Loving your employees does not imply that leaders lower the bar so that people do not have to work hard within the organization. To the contrary, it assumes that leaders of schools, school systems, and state and national policy makers set the bar high for all teachers. However, it also assumes that these same leaders use research to guide the intended changes and that they create systems to adequately support the people working within that system; without adequate support, people cannot be expected to realize the expectations. As stated earlier, schools, districts, states–systems in general–that mandate from the top down only and do not provide the necessary supports tend not to accomplish their intended goals and often create more problems than they solve (DuFour & Marzano, 2011; Fullan, 2011). The premise of a people focus should be "to create the structures and cultures by which current educators continuously improve both their individual and collective professional practice" (DuFour & Marzano, 2011, p. 19). Leaders who allow their decisions to be guided by this first secret of change are partly on their way to transformational change leadership. We will not solve our

education challenges by recruiting talented teachers and placing them in a system that is ineffective and unprofessional. In contrast, we will only make strides if we build a system where the conditions allow the people in the system to find meaning, personal satisfaction, fulfillment, and support toward their continued growth, and allowed to pursue personal goals and organizational goals (Bolman & Deal, 2013; DuFour & Marzano, 2011; Fullan, 2008).

Schools who choose to partner with MSA have taken one step in the right direction by sending a message to their teachers that they are willing to invest in them by providing professional tools to support and improve their practice. The MSA model consists of several components that directly invest in teachers by placing them front and center. First, participating MSA teachers convene for three weeks in the summer to engage in new learning with colleagues from their own schools and other regional schools in the partnership. This three-week professional learning consists of a week of math content instruction and two weeks of core instruction: assessment, student engagement, differentiated instruction, and brain-based learning. Teachers and principals are paid their full daily wage during this professional learning time and as a result report feeling valued as a professional (Trujillo, 2013, 2014, 2015). During the school year teachers receive coaching, mentoring, and content support. Additionally, MSA's staff works with the principals of each partner school in order to help them create time during the workweek so that teachers can engage in professional learning; MSA staff typically facilitates that professional learning. The Math and Science Academy program is only a partner with schools and does not have any direct control over the principal or school staff. Our influence in school leadership decisions and best management practices is limited as a result. MSA's influence is built only on credibility and

where possible we make our best efforts to be guided by Fullan's secret one, love your employees.

Connecting peers with purpose. Secret number two, connecting peers with purpose, implies what the title says: bringing people together to work toward a common goal connected to a higher moral purpose. Even though they are not exactly the same, I will also attach shared vision to this secret as both produce an intrinsic drive necessary for a successful change process. In the educational setting, connecting people to a moral purpose tends to be more straightforward and easier than a company in the business of making and selling products. After all, educators work in service of other human beings–students–and they have a profound effect on shaping their lives every day. Many teachers choose teaching because of an inherent drive to "do good" or "give back" to their communities or to help shape the next generation of young people to become thinkers, with strong character traits, such that they are able to participate actively in our democratic society.

However, mired in the daily minutia of schooling, both internal and external, many teachers and school leaders lose sight of their moral purpose and organizational goals. Consequently, moral purpose needs to be a focus of all leaders who intend to transform their organization (Deal & Peterson, 2009; Deming, 1994; DuFour & Fullan, 2013; Fullan, 2008; Pink, 2009). Fullan (2008) describes the phenomenon that occurs as peers engage in purposeful work, claiming, "identifying with an entity larger than oneself expands the self, with powerful consequences. Enlarged identity and commitment are the social glue that enable large organizations to cohere" (p. 49).

Connected closely to moral purpose is shared vision, which is essential to any successful change initiative and successful organization (DuFour et al., 2008; Kotter, 2012;

Senge, 2006). A shared vision is greater than an idea; it is a force that guides and drives people to accomplish amazing things. It is the spark that ignites action and carries momentum toward the pursuit of a larger purpose. A shared vision binds people together and provides a powerful connection between individuals (Senge, 2006). According to Kotter (2012), visions matter because they clarify the picture of what the future will look like and they speak to the purpose of why people should strive toward that vision. A shared vision helps to accomplish three essential goals (Kotter, 2012): (1) provides clarity and purpose for where the organization is going, (2) catalyzes people into action and motivates them to sustain over the duration, and (3) helps coordinate the direction and efforts of many people. DuFour et al. (2008) describe vision as one that answers the question, "what must we become to fulfill our purpose, what future do we hope to create for this organization?" (p. 119). The authors further contend that vision helps describe the ideal future–the place where the organization one day hopes to be–a place where the conditions are better than the current ones. If people can see meaning in their work and continuously connect their actions to a larger purpose beyond themselves, they are more likely to find genuine meaning and contentment in their work (Amabile, 1993; Csikszentmihalyi, 1990, 1997; Ryan & Deci, 2000; Pink, 2009; Senge, 2006). Additionally, Fullan (2008) posits, "when peers interact purposefully, their expectations of one another create positive pressure to accomplish goals important to the group" (p. 63).

A deep understanding on the part of leaders and organizations of moral purpose and shared vision is vital to the change process and the transformation of any organization (Bolman & Deal, 2013; Pink, 2009; Sinek, 2009). Pink (2009) explains that, "in business, we

tend to obsess over the ‘how’–as in ‘here is how to do it.’ But we rarely discuss the ‘why’–as in ‘here is why we’re doing it” (p. 138).

Additionally, most scholars agree that a shared vision should be constructed together (Preskill & Brookfield, 2009; Senge, 2006). A vision that is built from the ground up–one that involves input from everyone–is more likely to provide the direction and conditions for intrinsic motivation that will help propel everyone in the organization into a leadership role, acting in support of the larger vision or purpose (Preskill & Brookfield, 2009). Shared vision also promotes experimentation and justification to take risks to achieve results (Senge, 2006).

The MSA model provides partner schools and leaders with several concrete actions that help the transformation process. However, MSA does not directly address shared vision and moral purpose. Rather, it is the responsibility of school leaders to work with their staff to articulate their own moral purpose shared visions. MSA indirectly facilitates this process in a number of ways. For example, MSA helps principals and teachers understand the instructional shifts required to teach the Common Core State Standards. Additionally, MSA teaches and models the best practices for teaching and learning. These actions help provide the common language and tools to understand what effective instruction should look like in the classroom; these common experiences coupled with a shared language help contribute to a shared vision for effective teaching and learning. Despite being a vital component of the change process, very few schools dedicate time to collectively building and articulating a shared vision and defining their moral purpose. MSA has recently started to work with principals to help them build a collective vision and moral purpose within their respective schools through the principals’ PLC.

Capacity building prevails. Capacity building implies that the people within the organization are continuously working to develop knowledge and skills (Fullan, 2008). It also assumes that teachers and leaders don't enter the schoolhouse as full vessels; rather, the term assumes that people should engage in continuous learning, both individually and as a collective group, and that the people in the system should be nurtured, encouraged, and supported in their learning. This concept of capacity building is discussed extensively in the literature:

> Human capital in teaching is about having and developing the requisite knowledge and skills. It is about knowing your subject and knowing how to teach it, knowing children and understanding how they learn, understanding the diverse cultural and family circumstances that your students come from, being familiar with and able to sift and sort the science of successful and innovative practice, and having the emotional capabilities to empathize with diverse groups of children and also adults in and around a school. It is about possessing the passion and the moral commitment to serve all children and to want to keep getting better in how you provide that service. (Hargreaves & Fullan, 2012, p. 89)

Capacity building and the development of social capital are two proven drivers of whole system reform (DuFour & Fullan, 2013; Fullan, 2011). Hargreaves and Fullan (2012) explain that the concept of professional capital is made up of three components: human, social, and decisional capital. "Professional capital is the cornerstone concept that brings together and defines the critical elements of what it takes to create high quality and high performance in all professional practice–including teaching" (Hargreaves & Fullan, 2012, p.

102). In the following paragraphs I explore the importance of building professional capital and explain how this relates to the research question this study examined.

Human or individual capital is defined in the education setting as the knowledge, skills, and dispositions administrators and teachers possess (Hargreaves & Fullan, 2012). If the system is filled with teachers and administrators who possess high degrees of individual capital, one could reason then that the whole system would improve. Since we know that the teacher is the single most important factor in student learning, and that the principal is the second most important factor in contributing to student achievement (DuFour & Marzano, 2011), then it makes sense to invest in improving people. This is why cultures of professional learning are so critical to the equation: we must provide continuous learning opportunities for individual teachers and administrators in order to increase their knowledge and skills.

Although different scholars use different terms to describe capacity building: professional capital, Fullan (2008); personal mastery, Pink (2009) and Senge (2006); profound knowledge, Deming, (1994); or discipline thought, Collins (2001)–they all basically refer to the same thing–individual dedication resulting in deepened knowledge. Or, as Pink (2009) describes, “the desire to get better and better at something that matters” (p. 109). Senge (2006) explains personal mastery as “the discipline of personal growth and learning” (p. 131). He further contends that, “people with high levels of personal mastery are continually expanding their ability to create the results in life they truly seek” (p. 131). Personal mastery requires that individuals continuously strive for competence, pursue new skills, and seek spiritual growth. It also assumes that people view their work and life together as a creative work of art (Senge, 2006). Full personal development is vital because it speaks to fulfillment, self-esteem, and happiness. Since much of our life is spent working, it is

critical that we find happiness in our work. When individuals learn new things they experience an inherent pleasure in that learning; people find themselves intrinsically motivated to continue the process. As I described earlier in the chapter, when teachers experience a consistent positive inner work life they are more creative, productive, committed, and collegial (Amabile & Kramer, 2011). The feeling one has when completely engaged in something, where one loses track of time, is the optimal experience, or "flow" (Csikszentmihalyi, 1990). *Flow* happens when the skills of an individual are fully engaged: "if the challenge is too great one can return to the *flow* state by learning new skills" (1997, p. 47). As teachers engage by themselves or with others to tackle difficult math problems, for example, and their skills are fully involved in overcoming the challenge of solving those tasks, they are likely to experience *flow*. In this state of *flow*, individuals are engaged in making progress toward their goals. According to Amabile and Kramer (2011), the single greatest influence on inner work life is making progress in one's work. Mastery then is integral to progress, which has a positive influence on inner work life and in turn engagement. Pink (2009) further claims "the days that people make progress are the days that they feel most motivated and engaged" (p. 127). Ryan and Deci (2000) confirmed that competence and autonomy help lead to intrinsic motivation. Hence, the act of personal mastery helps lead to the conditions for an environment where people are intrinsically motivated to accomplish their own goals and the goals of the organization. We are now ready to see how personal mastery is related to shared vision and how a shared vision can be a powerful motivating force that contributes to personal mastery.

Senge (2006) describes shared vision, as I stated in the previous section, as a specific destination of where everyone in the organization wants to go, or, the picture of the desired

reality. This picture is typically different than the currently reality. Shared vision and the current reality are connected to one another by a rubber band–imagine the vision above and the current reality below connected by a taut rubber band (Senge, 2006). As we know from physics, tension seeks a state of equilibrium. The force of the rubber band continually attempts to pull the current reality toward the vision, or the vision toward the current reality. The goal, then, is to maintain a disciplined focus on the vision so that it acts as a force constantly pulling the organization toward the ideal reality (Senge, 2006). Personal mastery represents the discipline necessary to achieve the shared vision both from an individual and collective perspective.

According to Pink (2009) there are three laws of mastery. They include: (1) mastery is a mindset, (2) mastery is pain, and (3) mastery is an asymptote. The first, mastery is a mindset, is an extremely important condition of the change model, specifically to personal mastery and capacity building. As I mentioned earlier in the chapter, Dweck (2008) describes how people fall into two categories of mindsets, the growth mindset or the fixed mindset. In a growth mindset "everyone can change and grow through application and experience" (p. 7) and people who possess the growth mindset tend to be more content with their lives and more successful over time (Dweck, 2008). People with a growth mindset will be much more likely to engage in the hard work of personal mastery because they believe that it will pay dividends. This leads into the second law of mastery–mastery is pain. It is very relevant to point this out because, quite frankly, becoming an expert at anything is hard. According to Gladwell (2008), individuals need at least ten thousand hours of practice before they become an expert at that activity. Translating this research into teaching means that when teachers enter the profession, based on required credit hours in mathematics to graduate as a teaching

professional for example, they have nowhere near the experience with the subject matter necessary to be labeled an expert in mathematics. Mastery will require teachers to commit to continuous learning to achieve the level of knowledge and skills necessary, not only to be labeled as an expert but to do justice to the profession.

According to Pink (2009) the last law of mastery states that mastery is an asymptote. This simply means that one typically makes the most progress toward their goals in the beginning and that over time the gains become less noticeable, forming the shape of an asymptote as it slowly approaches the horizontal axis without ever making contact. If we take the example of teachers learning mathematics, specifically content and pedagogy that support the Common Core State Standards shift, we see that teachers should begin to see results in the classroom by simply teaching in a different way. Since change in practice and understanding is dramatic, the results should be measurable. Over time, however, the progress will become less noticeable, and even though one may still be engaged in personal mastery the results will be less noticeable. Collaborating with colleagues in cycles of continuous improvement is essential to personal mastery because the process helps address each abovementioned law. Collaboration coupled with personal mastery will be the focus of the discussion in the next section.

Organizations should be designed to foster personal mastery in every employee–if so–the organization will grow and become stronger (Senge, 2006). Collins (2001), reporting on the results of a study of the companies that moved from good to great, posits, “a culture of discipline is not just about action. It is about disciplined people who engage in disciplined thought and who then take disciplined action” (p. 142). Although the term is different, the idea is the same as Pink’s, disciplined thought requires the dedication of mastery. Barber and

Mourshed (2007) state very explicitly, “the quality of an education system cannot exceed the quality of its teachers” (p. 16). In order to improve the entire system then, it is absolutely necessary that leaders and policy makers alike figure out ways to embed personal mastery into the culture of the teaching profession–doing so would have a profound positive effect. Currently, there are two barriers that prevent most teachers from engaging in mastery: (1) limited time during their workday dedicated to individual or team learning, and (2) limited opportunities to attend professional development courses in order to acquire knowledge and develop additional skills. Furthermore, when teachers do have an opportunity to attend professional development, the majority of the time it does not provide opportunity for deep learning. Often this is because most professional development takes the form of a one-day workshop–hence not long enough to really deepen one’s knowledge base and acquire new skills (Wei et al., 2009). Since most professional development workshops target a general and broad audience, they rarely differentiate instruction or make direct connections to teachers’ individual classrooms.

The Math and Science Academy facilitates, in part, the realization of capacity building by the nature of its design. One week of each summer and eight days throughout the school year are dedicated to mathematics content courses–totaling more than seventy-five hours per year continued over a three-year duration. In the content course, teachers and principals engage in the “doing” of mathematics. They discuss mathematics content and pedagogical content knowledge required to teach the mathematics in an effective way. This component of the program is particularly relevant now as many teachers are struggling to make the shift from teaching their old state standards–a more procedural-based mathematics approach–to teaching the Common Core State Standards where a deeper understanding of the

mathematics content is required and where the pedagogy looks very different. The amount of time that teachers dedicate to deepening their content knowledge of mathematics is part of the personal mastery that Senge (2006) claims is required to becoming a true learning organization. Dedication to personal mastery is at the heart of all capacity building models that are integral to the change process an essential to transforming schools.

Learning is the work. Fullan (2008) contends that "the essence of secret four, learning is the work, concerns how organizations address their core goals and tasks with relentless consistency, while at the same time learning continuously how to get better and better at what they are doing" (p. 76). When teams of teachers fully engage in professional learning and the continuous improvement process they in essence become a learning organization. Learning Forward (2011) contends the process involves: (1) engaging in continuous improvement, (2) developing collective responsibility, and (3) creating alignment and accountability. This process ignites the creation of new ideas and creativity and is at the heart of motivation. People are motivated when they experience new learning (Deming, 1994; Pink, 2009; Senge, 2006). This is precisely the goal of classroom teachers. We know effective teachers strive to create conditions where teams of students work in collaborative groups interdependently with a common set of learning goals. Marzano, Pickering, and Pollock (2001) ranked cooperative learning as the seventh most effective strategy for student learning. The reality is that teams of teachers working collaboratively to accomplish collective commitments are also highly effective–unfortunately, this practice is not the norm in schools.

According to Senge (2006), "individuals may work extraordinarily hard, but their efforts do not efficiently translate to team effort. By contrast, when a team becomes more

aligned, a commonality of direction emerges, and individuals' energies harmonize. There is less wasted energy. In fact, a resonance or synergy develops. Like the 'coherent' light of a laser rather than the incoherent and scattered light of a light bulb" (p. 217).

Team learning has also been described by some scholars as developing social capital. Hargreaves and Fullan (2012) explain, "social capital refers to how the quantity and quality of interactions and social relationships among people affect their access to knowledge and information; their sense of expectation, obligation, and trust; and how far they are likely to adhere to the same norms or codes of behavior" (p. 90). In essence, "learning is the work, and social capital is the fuel. If social capital is weak, everything else is destined for failure" (p. 90). The collaborative cultures that support job-embedded professional learning and the continuous improvement process is the social capital that fuels school improvement. Social capital is built when teachers are involved in knowledge building and sharing while simultaneously developing a sense of professionalism and high expectations–something essential to moving instruction and assessment to the next level. The collaborative element of professional learning generates excitement, as teachers learn from one another, observe each other, steal best practices, discuss student work, and make evidence-based decisions. According to Trujillo (2014) teachers who engage in job-embedded professional learning report feeling more engaged in their work.

Recall the previous section where I described the gap and subsequent tension between the current reality and the shared vision. "Truly creative people use the gap between the vision and currently reality to generate energy for change" (Senge, 2006, p. 142). Team learning is fueled by that energy. Csikszentmihalyi (1997) discusses the effect of synergistic team learning as *flow*, the effortless action that "happens when a person's skills are fully

involved in overcoming a challenge that is just about manageable so it acts as a magnet for learning new skills and increasing challenges" (p. 47). When teachers work in this way, they are in essence identifying best teacher practices for instruction. They are building systems of continuous improvement into the fabric of their daily work and this affects the culture of the school in a profound way (Fullan, 2008).

This addresses the shift from professional development to professional learning as described earlier. Historically, teachers have received professional development outside of the workplace. This professional development is often disconnected from their classroom practice and not in context (Coggshall, 2012a). Although outside professional development is often a necessary component to capacity building, it cannot be the only learning in which teachers engage. In schools, this additional learning can take the form of job-embedded cycles of continuous improvement around the critical questions, peer coaching, lesson study, collaborative planning, or action research. According to Preskill and Brookfield (2009), "Groups that take action, reflect on the action, and then take further and more informed action (and so on in a continuous loop of action and reflection) are more likely to exert significant influence on the issues and concerns that matter to them most" (p. 110). Essential to team learning are a schedule, structure, culture that supports it, and leadership that makes it happen. I will explain the importance of leadership actions later in this section.

Another form of capital integral to high-performing schools is decisional capital, which is defined by Hargreaves and Fullan (2012) as "the capital that professionals acquire and accumulate through structured and unstructured experience, practice, and reflection– capital that enables them to make wise judgments in circumstances where there is no fixed rule or piece of incontrovertible evidence to guide them" (p. 94). School leaders who actively

create conditions of collaboration and professional learning and promote job-embedded cycles of continuous improvement are more likely to witness better decision-making at their school about the decisions that matter most.

The MSA model supports the design and facilitation of team learning within the school day. The MSA staff work with school leaders to plan and facilitate professional learning time that focuses on the continuous improvement process. As mentioned in earlier sections, this can take a variety of forms, but our efforts have primarily focused on reviewing student work to inform next steps in instruction, peer coaching, and collaborative planning. Whatever the learning design, all professional learning time should be guided by what DuFour and Fullan (2013) call the three big ideas of a professional learning community: (1) "a relentless focus on learning for all students, (2) a collaborative culture and collective effort to support student and adult learning, and (3) a results orientation to improve practice and drive continuous improvement" (pp. 14-15).

Transparency rules. Secret number five in the change process, transparency, "involves being open about results and practices and is essentially an exercise in pursuing and nailing down problems that recur while identifying evidence-informed responses to them" (Fullan, 2008, p. 99). When teachers work in teams to review student work, they open their practice to colleagues. When teachers engage in peer observation and coaching cycles, they open up their classroom and their professional practice for others to observe–not an easy thing to do if the culture of the school is one in which teaching in isolation is the norm. Transparent practice requires teachers to expose their vulnerabilities–their own weaknesses–and make a commitment to their peers and leaders that they will work to improve. Schools that practice transparency no longer operate in isolation but rather in learning teams where all

members are dedicated to improving their practice to improve student learning (DuFour & Marzano, 2011). Transparency allows teachers to learn from one another, adopt practices that get results–and discard those that do not (Schmoker, 2006). No longer should teachers operate inside the black box, rather, they should be asking the question of how to open their classroom practice–share what is most effective–and help the school grow (Fullan, 2008).

Each day teachers in the United States learn new techniques, strategies, solve problems, and develop innovative new methods of teaching. However, the majority of schools have no mechanism to share the knowledge they are building (Stigler & Hiebert, 1999). According to Mourshed et al. (2010) the schools that progressed from good to great consistently used collaborative teams to break teachers out of isolation. At the school district level, best practices were shared through school leaders working in teams. Classroom level teachers collaborated, observed one another, planned together, looked at student work together, and solved problems together. In other words, everyone in the system took collective responsibility for student learning and consciously used team learning and transparency to help the process. Additionally, peer accountability was found to be the most effective form of accountability and emerged naturally from collaborative teams working together in cycles of continuous improvement with a shared vision, and moral purpose (Mourshed et al., 2010). The results of establishing these conditions have shown to be the most effective form of accountability–lateral, or peer, accountability (Fullan, 2011; Learning Forward, 2011; Mourshed et al., 2010). Accountability in which peers set the expectations of each other results in success for students, one measure of which is student learning and achievement.

Transparency of practice requires a professional culture in order to be successful, one that is collaborative, results oriented, and built on respect and trust (DuFour et al., 2008). It also requires a shared vision, deep moral purpose, and collective commitment from all involved. Ultimately, this change process shifts the culture of the school to one where the unwritten rules, or norms, center on results, the highest quality instruction, and learning and sharing with each other. Learning Forward (2011) contends that teams of teachers who engage in professional learning should have the following characteristics: (1) the team engages in continuous improvement, (2) the team develops collective responsibility, and (3) the team creates alignment and accountability. Transparency and continuous improvement are interdependent.

Stigler and Hiebert (1999) and DuFour and Marzano (2011) discussed how the practice of lesson study is a powerful continuous improvement practice that can have positive influence on improving one's practice. One of the reasons lesson study is so effective is that transparency of practice is built in at every level, the planning stages, lesson observation, and lesson reflection and redesign. Due to the nature of its design, lesson study makes teaching practice transparent and therefore ensures lateral accountability. Lesson study also allows for another action critical to the continuous improvement process–the intentional celebration of success (Kanold & Larson, 2012; Learning Forward, 2011).

What we find from experience when schools make the shift to more transparency is profound—teachers tend to work harder to improve their practice because they are driven by a sense of accountability to their peers (Trujillo, 2014). The positive peer pressure exerted from knowing that one's peers will be either reviewing their student work or observing their practice sparks motivation to perform and improve.

The MSA model promotes the proliferation of best practices among classrooms, among schools, and among principals. This happens through the job-embedded professional learning during the school day on a weekly basis. It also happens during the MSA Summer Institute, the Ir-Rational Number Institute, and our MSA video sharing days. For example, during the school year the MSA staff provides instructional coaching support and modeling for teachers. Additionally, MSA staff helps to facilitate job-embedded professional learning (typically the review of student work and data, peer coaching cycles, or collaborative planning sessions). All of these activities promote the sharing of practice, which in turn supports the move toward school-wide transparency.

During the MSA Summer Institute teachers learn instructional practices focused on student learning (curricular goals, instructional strategies, formative assessment processes, student engagement strategies, classroom procedures) from research-based best practices, through assimilating new knowledge, deep reflection on and supported inquiry into their classroom practices. Teachers learn the value of collaboration with their peers, share best practices, find support in their struggles, and have the opportunity to look at student work together. As teachers learn, share, and reflect together they begin to use similar language and they slowly gain the confidence required to open their practice up for outside observation. During the Ir-Rational Number Institute, for example, teachers have the opportunity to delve into math content and to share different ways of solving problems in order to more deeply understand mathematics concepts. Sharing strategies with one another is an example of transparent practice. MSA Days are held once each semester and provide an opportunity for participants to share their practice through the use of video. Teachers record themselves

teaching a lesson and then share insights gained from a written reflection of the lesson with colleagues.

The principals' PLC occurs monthly throughout the school year. Its purpose is to increase school leadership capacity by providing a regular structured time where principals share and build knowledge together toward their goal of creating the conditions for collaboration, professional learning, and continuous improvement at their school sites–a necessary action to maximize the transfer of formal professional development teachers receive in the summer and throughout the year.

Systems thinking/Systems learn. The last secret, systems learn, embodies two big ideas, the first of which refers to a way of thinking and the second refers to how to approach systems change. I will discuss systems thinking first. According to Senge, Cambron-McCabe, Lucas, Smith, Dutton, and Kleiner (2012), "the discipline of systems thinking provides a different way to look at problems and goals–not as isolated events–but as components of larger but less visible structures that affect each other" (p. 124). Deming (1994) explains that a system is a "network of interdependent components that work together to try to accomplish the aim of the system" (p. 50). The aim of systems thinking, posits Deming (1994), is to provide a lens for looking at the organization and the system as a whole. As Deming described his work in Japan in the 1950's, he contended that Japan had tremendous technical knowledge about industry, particularly the car industry. The problem was that the knowledge was scattered. Deming claimed that the systems thinking approach, and systems thinking tools like flow diagrams, helped to link together knowledge and best practices. Organizations exist in a more complex world than they did in the past. Senge (2006) argued that systems

thinking–although it doesn't completely mitigate complexity–increases the likelihood for success.

Building on Senge's premise that the world in which organizations exist is exponentially more complicated than in the past, Fullan (2008) explains that entire system must engage in the practice of learning. He contends that the system as a whole must be designed so the people within the system are constantly learning from one another at all levels–hence the second big idea–systems learn. According to Fullan (2001) "it is one of life's great ironies: schools are in the business of teaching and learning, yet they are terrible at learning from each other. If they ever discover how to do this their fortune is assured" (p. 90). Fullan (2008) claims that systems can learn in a couple of ways. Decision makers at the top need to make a conscious effort to develop leaders at every level of the system (Bush, 2011; Fullan, 2008; Preskill & Brookfield, 2009). Mechanisms should then be put in place to bring those leaders together regularly to share and build knowledge and spread best practices in a systematic way. By developing leaders throughout the entire system, the system itself becomes more stable, less likely to be influenced by leadership turnover, and enjoys more coherence (Bolman & Deal, 2013; Bush, 2011). Critical to the development of a learning system is a shared vision that guides and pulls many individuals in the same direction (Deming, 1994; DuFour & Fullan, 2013; Kotter, 2012; Senge, 2006).

The MSA model is particularly valuable when it comes to helping the entire system learn. As I described earlier in the transparency section, the components of MSA facilitate learning between and among all the moving parts, namely the teachers, principals, education specialists, and line officers that operate within the seven partner schools. All components of the MSA model facilitate the exchange of ideas and sharing of knowledge.

The six secrets of change is a powerful conceptual model for change that can be used to guide decision-making and reflection as leaders pursue the transformation of education systems. Additionally, the conceptual model provides a lens through which one can peer into the true intentions of the Math and Science Academy design and make it more understandable. For example, leaders and outside parties might view the MSA professional learning model as a series of isolated parts rather than a web of interdependent parts working simultaneously together. The MSA model is strategically designed to improve teaching and learning by building capacity in both teachers and principals. It is also designed to foster confidence and inspire people to embrace personal mastery and team learning. Lastly, it is designed to promote collaborative professional learning between and among all parties within the system.

If one looks only at the MSA Theory of Change Model, many of the subtleties may be missed. This is why it is imperative that the six secrets of change be laid over the MSA model and used as the conceptual framework of the change process. The MSA Theory of Change Model is very black and white. It describes several concrete actions that lead to short term and then long term measurable outcomes before ending with the ultimate intended outcome–student learning. By overlaying the six secrets of change, a theory for transformational change, the reader has a powerful lens through which he can view the more subtle and humanistic changes that people in any organization must experience in order to achieve transformation. These six secrets as described by Fullan (2008) work together fluidly, support one another, and should not be thought of in isolation. Additionally, they embody the big ideas discussed in all of the educational change and school reform literature. There is no magic formula to creating an effective, high-functioning organization where the people are

engaged, where the work is always meaningful, and where people within the organization and system feel meaningful connections to one another. The best a leader can do is attempt to create the conditions by which she maximizes the probability that meaningful and effective change will occur. However, by using the conceptual model of the six secrets of change, based on the work of scholars and practitioners from a variety of disciplines, as a consistent guide to for planning, designing, and decision making, leaders will be better equipped to lead transformation. In the next sections, I discuss the role of leadership in creating structural and cultural change and specifically discuss what leaders must do to ensure change in a larger system.

Leadership and School Professional Culture

When discussing how to improve schools, Fullan (2014) contends, "the primary issue is to change the culture of the school and the district so that learning is the work–that is, so that people are getting better at what they do because learning to be more effective is built into the values and routines of the organization" (p. 32). The literature on the change process is convincing; change is best achieved through developing a culture of learning and sharing (Deal & Peterson, 2009; DuFour & Fullan, 2013; Fullan, 2001; Learning Forward, 2011; Liker & Convis, 2012; Schmoker, 2006). Schools will improve if we can break them free of the status quo. We must change the conditions so teachers no longer teach in isolation, rather in an environment of transparency where data and practice are shared regularly. Additionally, the environment must be one of high expectations where student learning is the center of every decision and continuous improvement is the rule of the day. Finally, there must be a system in place to allow teachers to gain skills they need to improve–one where they can share and build knowledge from one another. Senge (2006, p. 3) contends:

> Schools need to destroy the illusion that the world is created of separate, unrelated forces. When we give up this illusion–we can then build 'learning organizations', organizations where people continually expand their capacity to create results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free and where people are continually learning how to learn together.

How can we transform schools into learning organizations? In his discussion of leadership and management models, Bush (2011) explains that, "cultural models assume that beliefs, values and ideology are at the heart of organizations. Individuals hold certain ideas and value-preferences, which influence how they behave and how they view the behavior of other members. These norms become shared traditions which are communicated within the group and are reinforced by symbols and rituals" (p. 170). What we are after when we speak of culture change is a transformation of the "unwritten rules and traditions, norms, and expectations" of schools (Deal & Peterson, 2009, p. 6). The literature on schools and organizations points to several critical characteristics that contribute to an exemplary culture. First among them is the importance of connecting employees with purpose and shared values and shared vision (Bolman & Deal, 2013; Fullan, 2008; Kotter, 2012; Senge, 2006). Preskill and Brookfield contend that "the vision is one in which everyone contributes substantively to pursuing collectively created goals" (p. 87). Equally important to purpose and shared vision is creating an environment where learning is the work and continuous improvement toward a collective vision is the cultural norm (Senge, 2006; Fullan, 2008).

Team learning through the continuous improvement model cannot be developed if the conditions are not conducive to a culture of professional learning. Therefore, school leaders

must be aware of where their school is and be willing to make the changes necessary–in some cases fundamental changes. Ultimately, it is the responsibility of the school leader to guide the cultural transformation required to change the school into a true learning organization that continuously engages in professional learning and the continuous improvement process.

Leading Change in Schools Through the Continuous Improvement Model

Organizational transformation will not happen without effective and dedicated leaders who have the specific knowledge and skills to initiate and guide the change process (DuFour & Marzano, 2011; Fullan, 2014; Hargreaves, Boyle & Harris, 2014; Kotter, 2012; Kouzes & Posner, 2012). According to Killion and Roy (2009) effective teaching occurs when teachers engage in a cycle of continuous improvement where they collectively define the learning goals of the students and themselves, continually assess progress, and collaborate to design and implement high quality lessons. This section is dedicated to describing the steps leaders must take to initiate and sustain structural and cultural change. This section will describe in detail the graphic in Figure 10.

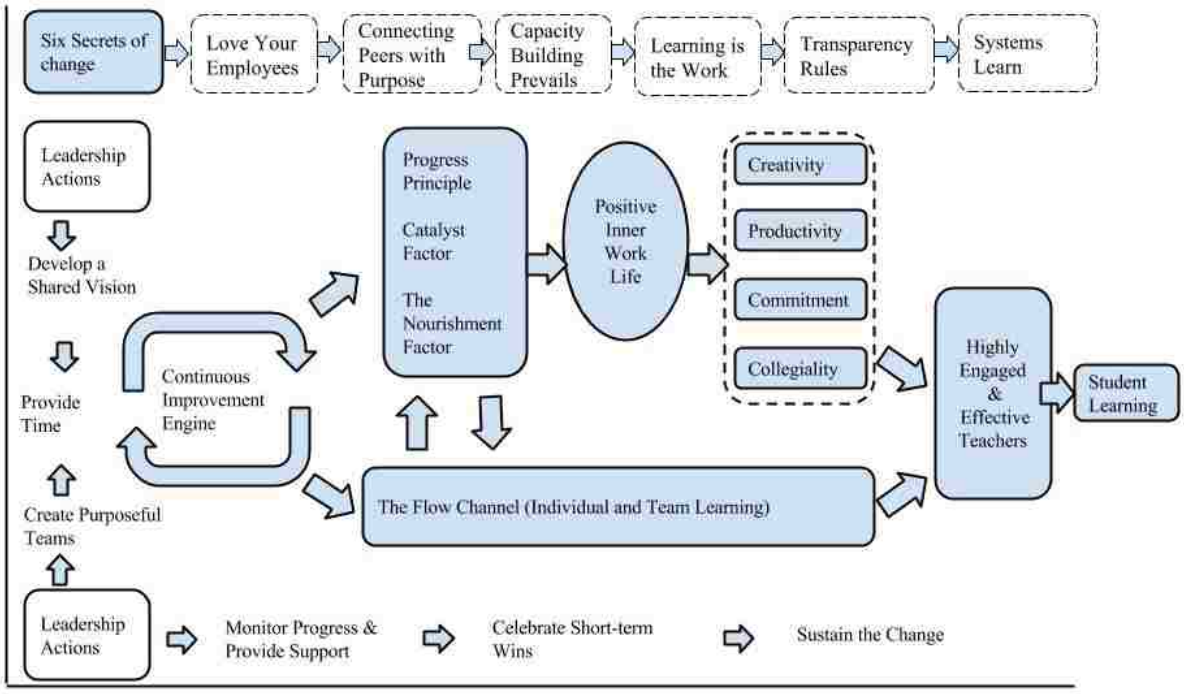


Figure 10. Leadership model for maximizing teacher engagement and effectiveness.

I will first discuss the necessary groundwork that must be completed in order to set the conditions for implementation of the continuous improvement process; this is shown in Figure 10 in the form of leadership actions on the y-axis. Next, I will describe the steps of the continuous improvement process or engine. Lastly, I will describe leadership actions necessary to support and monitor the continuous improvement process, celebrate successes, and sustain meaningful change.

Develop a shared vision. I discussed shared vision and moral purpose extensively in the six secrets of change under the heading "connecting peers with purpose." The successful schools literature is very clear that the first step in any transformative change process is to collectively engage everyone in the process of developing a shared vision and moral purpose–doing so provides direction and energy to mobilize the individuals within the organization toward a collective goal (Bolman & Deal, 2013; Collins, 2001; DuFour et al.,

2008; DuFour & Marzano, 2011; Fullan, 2001, 2008, 2010; Kanold, 2011; Kotter, 2012; Senge, 2006). There is always a gap between the current reality and the shared vision; the gap represents the creative tension (Senge, 2006). Shared vision is the picture of the ideal future. Without the shared vision there are no forces to catalyze or coordinate action (Kotter, 2012). Leaders must use all the tools at their disposal to create the conditions for change– developing a shared vision and defining moral purpose should be the non-negotiable first steps.

Restructure to provide time for professional learning. Restructuring the work week to allow sufficient time for professional learning and the continuous improvement process to occur is essential for initiating successful change (Darling-Hammond, 2013; DuFour et al., 2008; DuFour & Marzano, 2011; Learning Forward, 2011; Wei et al., 2009). The reality is that most U.S. teachers have very little time built into their day for collaboration and deep reflection and even less time to engage with colleagues in continuous improvement (Wei et al., 2009). Teachers in the U.S. spend considerably more time teaching (almost double) than their OECD counterparts (OECD, 2012). Wei et al. (2009) explain that teachers in OECD countries dedicate 15-25 hours per week to non-teaching activities that have a direct effect on teaching quality. Without sufficient time built into their workday, how can teachers realistically be expected to improve their practice? These time demands make implementation of the continuous improvement model a monumental challenge. Despite this challenge, there are ways for leaders to be successful; leaders need to be creative when developing schedules to ensure teachers have time during the day dedicated to collaboration. In the longer view, however, it is critical that policy makers confront this issue as well. Continuing to add more work to an already full day will spell the demise of any effort to

implement a continuous improvement model. DuFour and Marzano (2011) contend that, "school and district leaders must play a role in changing the perception that teachers who engage in meaningful collaboration are not working" (p. 74).

Create purposeful teams linked shared goals. Bringing people together and asking them to collaborate with one another does not ensure they will accomplish anything other than a congenial discussion (DuFour et al., 2008). Building a strong cohesive team requires shared goals and collective commitments (DuFour & Marzano, 2011). Additionally, cohesive teams require interdependence–they depend on one another for creative ideas, professional knowledge of content and pedagogy, knowledge of students and families, and for motivation when challenges occur. The successful schools literature is very clear that creating teams linked to shared goals is essential to the success of the continuous improvement process (Darling-Hammond, 2013; DuFour & Fullan, 2013; DuFour & Marzano, 2011; Kanold, 2011; Killion & Roy, 2009; Learning Forward, 2011).

The continuous improvement cycle/engine; The driver of the progress principle. For the most part, teachers in the United States still practice the art and science of teaching in isolation (DuFour & Marzano, 2011; Schmoker, 2006). Teachers will not improve their professional practice–content knowledge, instruction, and assessment–without a mechanism built into the school work day that both supports them and holds them accountable for getting better–professional learning as the continuous improvement model is the vehicle to improve practice in schools in order to ensure that every student has the benefit of an effective teacher (DuFour & Marzano, 2011). However, this process does not happen by itself; it must be led, supported, monitored, and celebrated. If any one of these elements are missing, it will either not be as powerful or will not be effective at all. Leadership must create the relationships and

design the strategies of accountability and celebration necessary for the vision to come alive (Kanold, 2011). If the vision insists that teachers learn and improve their practice every day, then building a continuous improvement model into the work structure, supporting its operation, and holding teachers accountable to incorporate it into their professional practice is imperative.

Although they may vary slightly, continuous improvement within schools consists of the following steps: (1) setting clear student learning goals, (2) creating an action plan to achieve the goals, (3) taking action on what works and what is best for students, (4) collecting and analyzing appropriate data, (5) providing intentional creative feedback, and (6) intentionally celebrating successes (Kanold, 2011). Figure 11 shows the continuous improvement model presented by Kanold (2011) in his book *The Five Disciplines of PLC Leaders*.

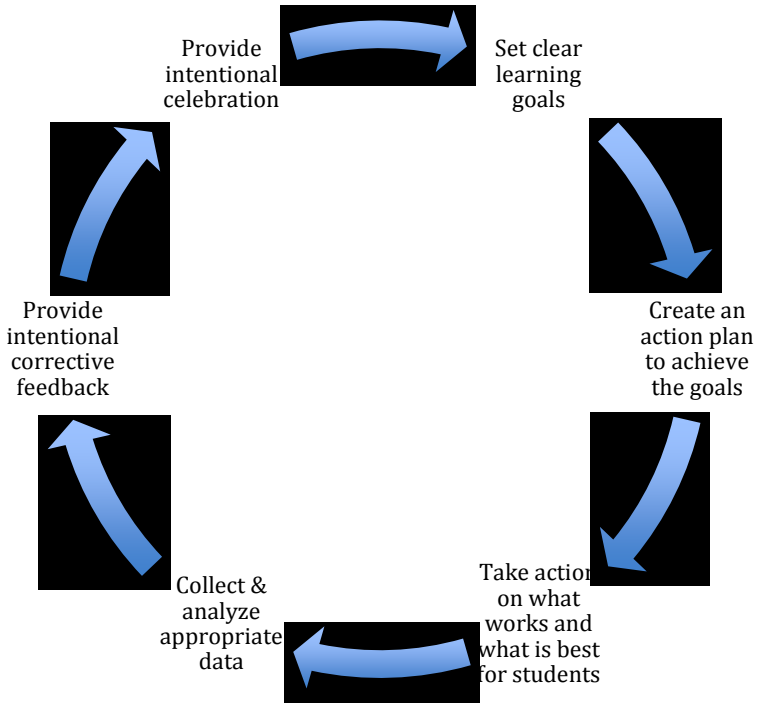


Figure 11. The Continuous Improvement Model, adapted from (Kanold, 2011, p. 60).

The continuous improvement cycle is also described in Learning Forward's (2011) *Standards for Professional Learning*. From their meta-analysis, Marzano, Waters, and McNulty (2005) identified 21 effective leadership practices that have a positive effect on the actions of teachers, which in turn influence student achievement. DuFour and Marzano (2011) claim that the continuous improvement process naturally addresses nineteen of the 21 responsibilities. Professional learning through the continuous improvement model is powerful because it naturally engages individuals in the act of improvement and simultaneously holds them accountable for implementation. In essence, there is lateral (peer to peer) accountability at every step. In their study of high-performing schools, Mourshed et al. (2010) found that peer accountability was the most effective accountability for improving teacher practice, and it emerged from collaborative teams working together in cycles of continuous improvement.

Professional learning through the continuous improvement model does require leadership; however, it does not necessarily require leadership from the school leader at every level. Professional learning through the continuous improvement model by design includes a built-in mechanism to empower many individuals within the small group (DuFour & Marzano, 2011). The continuous improvement process supports the development and emergence of many leaders and contributes to distributed leadership throughout the organization. Organizations that take deliberate action to develop leaders at every level are more stable and successful (Bolman & Deal, 2013; Bush, 2011; DuFour & Marzano, 2011; Fullan, 2008).

Professional learning through the continuous improvement model is powerful for a number of reasons; lateral accountability as mentioned above is clearly one of them. Another

powerful and tremendously beneficial element of professional learning through the continuous improvement process is the direct and positive influence on inner work life. If teachers' inner work lives are healthy, they are more "committed to their work and more likely to work well with colleagues" (Amabile & Kramer, 2011, p. 3). Overwhelmingly, the greatest contributor to inner work life is when people make progress in their work, the progress principle (Amabile & Kramer, 2011). Professional learning through the continuous improvement process is the built-in mechanism that facilitates progress and intentionally celebrates progress. In essence, the progress principle is the fuel for the continuous improvement engine. The theory contends that when progress is made people become even more engaged in their work. Amabile and Kramer (2011) posits that, "people are more creative and productive when they are deeply engaged in the work, when they feel happy, and when they think highly of their projects, coworkers, managers, and organizations" (p. 3). According to the progress principle then, the continuous improvement process has a direct positive influence on school professional culture. It honors the conditions for intrinsic motivation because it allows teachers within the team to set their own goals and take action on how to accomplish those goals (autonomy). Furthermore, it is consistent with the idea that people need to feel a sense of belonging and attachment to others (relatedness). It also honors competence because teams working together are, in essence, learning from the work and this new learning creates more competence in one's professional practice.

The influence of job-embedded professional learning then, when done right and under the proper conditions, can have a tremendous influence on school professional culture. My goal for directly connecting the psychology research with job-embedded professional learning and the continuous improvement model is to point out how powerful it can be as a

contributor to teacher morale and engagement, and as a mechanism to transform school professional culture. The key is creating the conditions necessary to achieve the desired transformation. Deliberate actions of a leader can either constrain or enable these conditions– it is imperative that we get this right.

Monitor progress and provide support. Monitoring and supporting progress can be a difficult challenge; in order to be successful it requires the right balance of loose tight leadership (Collins, 2001; DuFour & Fullan, 2013; Kanold, 2011; Muhammed, 2009). DuFour and Fullan (2013) pose the question: "how should leaders engage in the complex process of cultural change?" (p. 33). They continue their discussion by asking whether it is better to be tight, mandate the change the leader wants to see and rely on top-down directives to ensure it happens; or, let it emerge naturally from the ground up. The reality is that neither works; leaders need a balanced approach that embraces a strategy of being insistent (tight) about some things while being loose about others (DuFour et al., 2008). Leaders need to be tight about the "what," the agreed-upon goals that are consistent with the vision and contribute to the student learning focus. How teachers accomplish the agreed-upon goals should be left to them and their colleagues based on best practices; this is the loose part of leadership (DuFour et al., 2008; Kanold, 2011; Mattos, 2008; Muhammad, 2009). Leaders must understand that the success of the structural and cultural transformation necessary to improve schools is a balance, one that requires constant reflection and adjustment (Fullan, 2008; Preskill & Brookfield, 2009), just another reason why leadership is so essential to the change process.

Celebrate short-term wins. Celebrating short-term wins is critical to the success of the continuous improvement model and it is also vital to the change process (DuFour &

Fullan, 2013; Kanold, 2011; Kotter, 2012; Muhammed, 2009; Reeves, 2009). DuFour and Fullan (2013) contend that the intentional celebration of progress and short-term wins is the essential ingredient for sustaining the continuous improvement process. Recall the progress principle mentioned earlier in the discussion. Making progress in one's work is the single biggest contributor to one's inner work life, which has a direct impact on the engagement and commitment people feel toward the goals of the organization (Amabile & Kramer, 2011). By consistently and intentionally celebrating short-term wins, leaders can honor the hard work accomplished by teams and individuals (Kanold, 2011).

Sustaining change. Also critical to the change process is a mechanism for principals and administrators to continuously improve their own knowledge and skills (DuFour & Marzano, 2011). Without such a mechanism built into the system, it will be difficult for these leaders to achieve transformation. Leaders need a way to engage with other school leaders, learn and share knowledge critical to the success of their own schools, and a way to celebrate successes within the entire system because sustaining change is very difficult (DuFour & Fullan, 2013). This is particularly true when it comes to leadership change. The lone wolf, if equipped with the right amount of charisma, skills, and determination, may be able to make significant improvements based on their ability to motivate individuals toward pursuing the collective vision (Bass & Avolio, 1993; Conger, 1999). However, when it comes time for that person to step down–if there are no systems in place designed to sustain the change–progress will likely wane.

As stated earlier in the literature review, it also takes an active role by all levels of the system to ensure sustainable change. Policy at the district, state, and national level significantly influences all reform initiatives. A single school may be able to initiate and

maintain changes for a short time, but it will become harder and harder to sustain without systems level support. The reality is that policy either enables positive change or constrains it. The energy of the people within the larger system, if not enabled by favorable policy within the system, will eventually lose steam. As I discussed earlier in the paper, the highly successful schools are almost always part of the larger system, district, state, or nation. As a larger entity they have the ability to put systems in place to continuously develop the capacity of teachers and invest in mechanisms that support students at every level (Barber & Mourshed, 2007).

Why hasn't job-embedded professional learning and continuous improvement taken hold?

There are several fundamental challenges to truly transforming schools to support professional learning focused on the continuous improvement process. The first challenge, and perhaps the most difficult to overcome, is the one of school professional culture and social norms. As DuFour et al. (2008) discuss, school professional culture takes many forms; a school professional culture, for example, can be isolationist or collaborative, teacher-centered or student-centered. To date, most teachers still operate most of the time in isolation (DuFour & Marzano, 2011) and overcoming these entrenched social norms can prove seemingly impossible. Additionally, many schools that adopt the professional learning community model are not successful because they treat PLCs as a program and not a process (DuFour & Fullan, 2013; DuFour & Marzano, 2011; Mattos, 2008). Many schools try to insert PLCs into an already over packed workday. According to Senge (2006) "fragmentation, or making learning an 'add-on' to people's regular work has probably limited more organizational learning initiatives than any other factor" (p. 287).

A second fundamental challenge to implementing professional learning within the school day is overcoming the time and workday constraints. The reality is that most U.S. teachers have very little time built into their day for collaboration and deep reflection. Without sufficient time built into their workday, how can teachers realistically be expected to improve their practice? These time demands make implementation of professional learning focused on the continuous improvement process a monumental challenge. In order for job-embedded professional learning to be successful, administrators need to be creative when developing schedules to ensure teachers have time during the day dedicated for collaboration. In order to gain traction at a systems level, however, policy makers must be willing to discuss the topic of restructuring schools. To date, very few policy makers or practitioners have embraced restructuring schools to make time for job-embedded professional learning. Perhaps as the state and national education communities review the assessment results from the Common Core State Standards, professional learning will be viewed as a viable option.

Sustainable Change Requires a Whole Systems Approach

According to Darling-Hammond (2013), the United States needs a coherent systems approach to ongoing learning and continuous improvement for all educators. In particular, "we need to create and sustain productive, collegial working conditions that allow teachers to work collectively in an environment that supports learning for them and their students" (p. 3). Darling-Hammond (2013) refers to this as a "teaching and learning system that supports continuous improvement, both for individual teachers and the profession as a whole" (p. 3). However, for the United States education system to realize this vision, we first must articulate what the vision looks like and then collectively agree on a common definition of what a teaching and learning system is. Far too often, good policy is created at the top only to

find failure at the implementation stage because a clear vision and definition were not communicated (Tyack & Cuban, 1995). Several scholars, including Fullan (2011), Hargreaves and Shirley (2012), and Darling-Hammond (2013), argue extensively based on copious evidence that real transformational change cannot be sustained without comprehensive systems change. One professional organization that both advocates for professional learning and provides the necessary resources for leaders at all levels to get started is *Learning Forward.* The organization articulates six core components they claim are essential to the development of a comprehensive professional learning system. These include:

- Vision/function of professional learning as part of the education system;
- Definition of professional learning to establish common understanding and practice;
- Standards for professional learning to establish quality indicators;
- Ongoing assessments and evaluation with data;
- Roles and responsibilities of stakeholders, including teachers, principals, central office, regional agencies, state agency, etc.;
- Resources (e.g. time, staff, technology, funding, and materials) for ensuring effective professional learning. (Learning Forward, 2013, p. 2)

Very few comprehensive professional learning systems exist (Darling-Hammond, 2013). If states are really serious about realizing the shifts necessary to implement successfully the Common Core State Standards, they must build capacity in their teaching force, leaders at every level, and in the entire system (DuFour & Fullan, 2013). In most cases, this will require that states eliminate policy that doesn't align with the comprehensive professional learning vision. At the very least, states will need to modify and streamline

policy. Only when professional learning is viewed as an integral part of the teaching profession will we begin to see a universal attitude change toward the education profession.

As I stated earlier, schools will not change without effective leadership. If leaders are not able to take the actions necessary to catalyze change because they are mired in compliance paperwork and mandates that very rarely have any direct impact on teaching and learning, professional learning driven by continuous improvement will never be able to take root within schools and districts. As Figure 12 shows, change needs to start at the top with a clear articulated vision. Only when the expectations are set and the path is clear of all obstacles will leaders at all levels have a realistic chance of successfully implementing and sustaining professional learning systems.

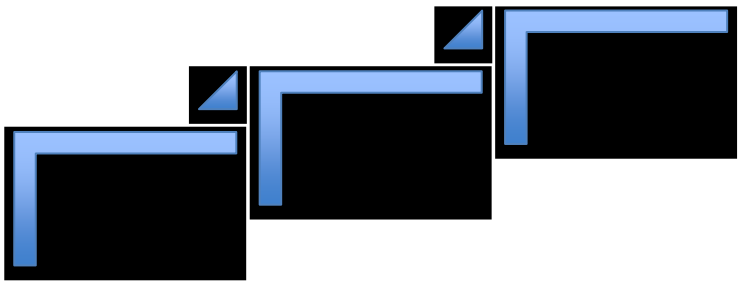


Figure 12. State policy frameworks lay the foundation for coherent district and school professional learning systems.

Summary of the Literature Review

I started the literature review by describing the role and importance of leadership in the change process and explained that two key characteristics of effective school leaders are the ability to build cultures of collaboration and to create the conditions for employees/teachers to transform into a learning organization committed to continuous improvement. I then highlighted the literature from the world's top-performing school

systems by comparing them to the United States. The studies found that teachers in the United States spend considerably more time actively teaching students as a percentage of their workweek than do their high-performing nation counterparts. This difference in structure allows teachers in the highest performing nations to engage in professional learning designs with colleagues in more robust and effective ways. I then provided the historical context from the leadership, management, and motivation literature in order to show the evolution of learning over the last century. Leaders now have the information they need in terms of how to create the conditions of high functioning learning organizations where the people in the organization are more creative, productive, committed, and collegial. Next, I described what the literature tells us about high quality professional development, professional learning, collaboration, and continuous improvement. The conclusion is that the old paradigm of professional development is no longer sufficient if we wish to meet the challenges of more rigorous standards. A replacement with job-embedded professional learning with a focus on continuous improvement is necessary.

The next portion of the literature review described the change process in detail using Fullan's (2008) six secrets of change. This conceptual framework advocates for the following six secrets: (1) love your employees, (2) connect peers with purpose, (3) capacity building prevails, (4) learning is the work, (5) transparency rules, and (6) systems thinking/systems learn. The MSA model supports all of these change components in varying degrees. Next, I discussed the importance of school professional culture and specifically described how the psychology literature informs the work of leaders to create the conditions for a positive inner work life.

The next section articulated the actions leaders must take to lead change in a school driven by the continuous improvement model. These included developing a shared vision, providing time, creating purposeful teams, monitoring progress and providing support, celebrating short-term wins, and sustaining change. I then discussed some reasons why job-embedded professional learning and continuous improvement have not yield the results they intended. A few reasons include only partial implementation, insufficient resources, and absence of effective leadership. Lastly, I discussed the fact that sustainable change toward professional learning driven by the continuous improvement model requires a whole system approach in order to be successful and sustainable.

Need for the Study

Increased accountability measures, low student achievement and engagement, low teacher and principal morale, and more rigorous standards that require greater teacher preparation and professional development are colliding in a perfect storm of education challenges across the United States. In a frenzied effort to right the ship, the majority of policy makers, politicians, philanthropists, and the business community seem to be placing their faith in market forces and top-down only reform measures.

Waiting in the wings, however, is a systems approach strategy that has been embraced by scholars and practitioners alike and is based on copious evidence from the high-performing schools literature and the world's most successful school systems. It is not a simple solution nor is it easy to implement. To the contrary, the strategy involves investing in the continuous development of teachers, restructuring schools to make time for job-embedded professional learning with a relentless focus on continuous improvement, and developing and supporting leaders to create the conditions that support teams of teams

learning every day. Although this strategy of whole systems support takes time and costs money, variations of it have been shown to improve student learning and achievement dramatically and increase teacher morale, engagement, and accountability (Barber & Mourshed, 2007; Darling-Hammond, 2013; DuFour & Fullan, 2013; DuFour & Mattos, 2013; Fullan, 2011, 2014; Hargreaves & Shirley, 2012; Tucker, 2011). In addition to the successful schools literature, there is substantial evidence from the business literature that the most successful organizations are those that place a high value on becoming a "learning organization" (Fullan, 2008; Liker & Convis, 2012; Senge, 2006). Senge (2006) maintains, "organizations that will truly excel in the future will be the organizations that discover how to tap people's commitment and capacity to learn" (p. 4). With substantial evidence across professions, redesigning schools in order to create the conditions for "learning organizations" to flourish should be the goal of education leaders.

There is still a great deal the education community does not understand about how to specifically go about adapting a model to fit within the context of our existing public education system and in my case the public Bureau of Indian Education system.

I seek to add to the body of knowledge of how a whole systems professional development and professional learning model influences the professional culture of a school: positive inner work life, teacher confidence, expectations, collegiality, transparency, creativity, teamwork, morale, and overall engagement. The findings from this study will inform the education community, policy makers, districts, and professional development providers on what leaders must do maximize teacher morale, engagement, and effectiveness. By understanding the dynamics involved in creating conditions for professional learning–the conditions it takes to create collaborative culture, the education community will be better

equipped to support whole scale systems change. This is what we need to make a real impact on student learning and ensure that the teaching profession regains its footing now and into the future.

Chapter Three

Research Design

Introduction

This chapter begins with the research question that guided this investigation and then explains the methodological framework, including the research methodology and the role of the researcher. I continue by discussing the specifics of each study site, six elementary schools located in Northern New Mexico where the study participants included teachers and principals. Next, I detail the data collection methods that I used in the study: teacher and principal interviews and three Math and Science Academy evaluation reports. I then discuss standards of quality, specifically validity and reliability. Next I discuss potential limitations to the research design. Finally, I address the question of how data were collected and how those data were analyzed in order to answer the research question.

Research Question and Purpose of the Study

In an effort to develop a richer understanding of the dynamics that occur when teachers engage in job-embedded professional learning characterized by cycles of continuous improvement, I investigated the following questions: How do job-embedded professional learning and leadership influence school professional culture? and, What are the implications for leadership? For this qualitative study, I conducted in-depth interviews with teachers and principals and reviewed publically available data from three years of Math and Science Academy evaluation reports. The need for this study was significant because the sense of urgency to improve education outcomes and teacher and principal morale and engagement has never been higher. Since the evidence is clear that restructuring schools to allow teams of teachers to engage in job-embedded professional learning improves both student outcomes

and teacher morale, there is a compelling need to proliferate this practice. A deeper understanding of the entire process will add to the literature and thus contribute to change.

Research Paradigm

I chose a blend of inquiry paradigms–constructivism and advocacy/participatory worldviews–as a way of thinking about this study as well as a guide to action. Social constructivists "seek understanding of the world in which they live and work" (Creswell, 2007, p. 20). As a social constructivist, my intent was to develop a grounded theory of how job-embedded professional learning and leadership influence school professional culture. In order to explore this question, I probed the thinking of participants through a series of in-depth interview questions. These questions were constructed in a way that allowed the participants to make sense of their experiences as they thought through their answers. The intent was to allow themes to emerge from the data in order to construct meaning. Although my research paradigm was grounded in constructivism, I had a clear agenda for conducting this research: advocating on behalf of teachers and principals for conditions that will allow them to be more successful in their work. Creswell (2007) claims that the "basic tenet of an advocacy/participatory world view is that research should contain an action agenda for reform that changes the lives of participants, the institution in which they live and work, or even the researchers' lives" (p. 21). My motivation for conducting this study derived from an acute awareness that the system in which teachers and principals work needs to be transformed. Through this work, I intend to contribute to the research literature that will ultimately help fuel a sense of urgency to change the system. For this reason, my work in this study can be characterized as advocacy research. In addition to a constructivist and advocacy worldview, this research study can be characterized to some degree as participatory: I am a

participant in the process because of my close relationship with teachers and principals and my role as a participant in many of the professional learning activities. My responsibilities in this role are loosely defined but include activities such as leading professional development, facilitating professional learning and continuous improvement cycles, collaborative planning, and celebrating successes. I played the role of leader, coach, and peer, in addition to that of researcher.

Research Design/Methodological Framework

This qualitative research study employed a grounded theory approach. Creswell (2007) describes grounded theory as a qualitative research design that uses data (observations, interviews and site related documents) from between twenty to twenty-five participants to develop a theory from the ground up. I used the approach of systematic procedure to "systematically develop a theory that explains process, action, or interaction on a topic" (Creswell, 2007, p. 64) until all categories were saturated.

I explored how teachers felt about participating in job-embedded professional development and how their experiences influenced their morale, their engagement, their content knowledge and instruction, and how they viewed their colleagues. Additionally, I was very interested in understanding the role of the principal in the process of job-embedded professional learning. For example, I wanted to know what actions the principal took or not in order to create the conditions for professional learning to occur. I designed interview questions that were meant to tease out these specific actions. Teacher participants in this study engaged in the process of job-embedded professional learning in different ways depending their school: no school operated on the same model. For example, some schools allocated sufficient collaborative time built into their weekly schedules to meet regularly

while other schools had no time built into their school day. I discuss the details of each school in the next section.

This study used interview data collected from both teachers and principals that are based on participants' perceptions, thoughts, emotions, feelings, motivation, drive, experiences, actions, and interactions. Additionally, I used Math and Science Academy annual evaluation data to aid in the development of a more comprehensive grounded theory. The evaluation reports contained a variety of rich data, some of which were very useful. The data compiled in the evaluation reports included data from surveys, focus groups, interviews, and observations. The MSA evaluation data is in the public record and was accessed without the permission of MSA or the individual teachers, principals, or schools.

Data Sources/Site of the Study

Teachers from six schools were chosen for the study. Five of the schools are overseen by the Bureau of Indian Education: San Felipe Pueblo Elementary School, Jemez Day School, T'siya Day School, Taos Day School, and Santa Clara Day School. The sixth school, Ohkay Owingeh Community School, is a tribally-controlled grant school. Three of the schools (San Felipe Pueblo Elementary School, Jemez Day School, and T'siya Day School) are part of the Southern Pueblos and located within an hour's drive north of Albuquerque. The remaining schools (Ohkay Owingeh Community School, Taos Day School, and Santa Clara Day School) are part of the Northern Pueblos and are all located north of Española. Jemez Day School, Ohkay Owingeh Community School, and Santa Clara Day School serve students in kindergarten through the sixth grade, while the remaining schools serve kindergarten through eighth grade. All of the students who attend the six schools involved in the study are Native American and most live within their pueblo. Table 1 presents the demographic information of

all schools in the study. This information, and the descriptions of each school below are meant to provide context only. I use pseudonyms when I discuss these schools in Chapters Four and Five.

Table 1

Demographics of All Schools in the Study

School	Grades Served	Number of Teachers	Number of students	Started the Partnership with MSA in Year
Jemez Day School	K - 6	13	147	2012
San Felipe Pueblo Elementary School	K - 8	19	367	2012
T'siya Day School	K - 8	8	81	2013
Ohkay Owingeh Community School	K - 6	7	100	2013
Santa Clara Day School	K - 6	9	124	2014
Taos Day School	K - 8	11	164	2014

Each school site is unique in a variety of ways: ethnicity of their teaching staff and leadership, consistency of leadership, school day master schedules, when the school entered into a partnership with MSA, and their student achievement data. I will discuss each school below in general terms in order to provide context.

Jemez Day School. Jemez Day School (JDS) is a very rural school consisting of kindergarten through sixth grade; 147 students attend the school and there is only one class per grade level. All students are Native American and 100% are eligible for free and reduced price breakfast and lunch. All of the teachers at Jemez Day School participated in MSA (7

total) until June 2015, when they officially graduated from the program. Additionally, the principal regularly participated in MSA activities.

Jemez Day School entered into a partnership with MSA in June 2012. Unlike other schools, our agreement included science in addition to mathematics as part of the partnership. The school leader has been in place for the past 13 years and there has always been a stable teaching staff. Of the seven teachers, six are Native Americans, four women and two men. Four are from the Pueblo of Jemez, one from Tesuque Pueblo, and one from a tribe in southern Arizona. Additionally, they have one white male teacher who has been teaching in the BIE system for over 25 years. One unique feature of JDS is that each classroom has a designated teacher assistant. This provides consistency for students and flexibility for the teacher to leave the classroom to engage in professional learning.

Jemez Day School teachers have been consistent participants in the MSA Summer Institute math and science content weeks and the Summer Institute core program. However, only half of the teachers, on average, have participated in the Ir-Rational Number Institute math content days; the principal occasionally participates.

During the 2012-2013 school year, the MSA school site support consisted mostly of instructional coaching, professional development on the science program, and the science notebooking process. Starting the second year, teachers spent the first semester engaged in peer coaching cycles. Each semester teachers were expected to be observed once and observe their peers twice. The complete peer observation cycle consisted of a pre-conference, complete lesson observation, and a post-conference. All observers in the peer coaching cycle were expected to provide descriptive feedback to the teacher being observed. Each participant, then, was expected to develop a personal action plan based on the subsequent

professional discussions. Teachers consistently engaged in peer coaching cycles throughout the 2013-2014 and 2014-2015 school years.

In the spring of that same school year, teachers were introduced to the professional learning design of looking at student mathematics work together. This design is meant to generate rich conversations about mathematics content and pedagogy. Teachers found the process very productive and have continued the practice on a weekly basis since it was introduced. Initially, the process of looking at student work was facilitated by an MSA staff member; however, the principal and select teachers have subsequently taken on the responsibility of facilitating the professional learning and continue to do so to the present. Additionally, Jemez teachers periodically meet for professional learning in science. This typically takes the form of looking at formative assessments in science, reviewing science notebooks, or watching a video series of effective practice for elementary science teaching. All of these activities help to provide rich insight into student thinking in addition to generating discussions about content and best practices.

Overall, teachers have developed the knowledge and skills to engage in on-going job-embedded professional learning focused on continuous improvement: looking at student work, peer observation cycles, and collaborative planning. More than any other school, Jemez has been the most successful at implementing and sustaining job-embedded professional learning. There are a number of reasons for this, but three are salient when addressing objectives. First, JDS has had consistent and stable leadership with high expectations; second, all teachers have an instructional assistant in their classroom which ensures that they have the time to attend to professional learning activities during the school day while their students continue to learn in an uninterrupted learning environment; and

third, JDS has highly professional teachers that are willing, energized, and committed to continuous improvement; four out of seven teachers were recruited to teach at Jemez by the principal. As evidence of this, two teachers, a husband and wife team, are close to completing their master's degrees in Educational Leadership with a Native American Focus, a partnership between UNM and MSA. Another teacher is in the process of completing her National Board Certification.

San Felipe Pueblo Elementary School. San Felipe Pueblo Elementary School (SFPES) is a rural school with a student population total of 367. All students are Native American and 100% qualify for free and reduced price breakfast and lunch. The school serves kindergarten through eighth grade. The school has approximately two classes per grade level. Seventy percent of the teachers at SFPES (16 of 23) joined the MSA program in 2012, the remainder joined in 2015. The past principal, as well as the current principal, have been regular participants in MSA. Fifty-five percent of the teachers regularly participate in professional learning time dedicated to reviewing student work and common formative assessments.

San Felipe Pueblo Elementary School entered into a partnership with MSA in the summer of 2012. They also acquired a new leader during that same year, a Native American woman with several years of principal experience. She left the position in April 2014. The BIE district line officer took over as interim principal until a replacement was found in June 2014. The school has a variety of teachers that span the evaluation spectrum from "effective" to "ineffective." Three teachers particularly stand out as both effective and strong teacher leaders. These teachers were active in providing professional development throughout the

school year in 2013/2014. They are currently active in a data leadership group, and occasionally represent the principal during some MSA meetings and community meetings.

T'siya Day School. T'siya Day School (TDS) serves 80 students (100% Native American) and 100% qualify for free and reduced price breakfast and lunch. The TDS staff is composed of one principal, six teachers, one administrative assistant, and three educational technicians. Six of the staff members are from Zia Pueblo; the others are from outside the Pueblo. Four of the remaining staff members are also Native.

Four years ago, the Division of Performance and Accountability and the Bureau of Indian Education (BIE) Operating Schools designated TDS as a School in Need of Restructuring and took the action of replacing the entire teaching staff and principal. At the time, TDS students' New Mexico Standard-Based Assessment (NMSBA) scores were depressed, and continue to be depressed; however, in three years, the new staff have raised the percent proficient and above, in both reading and math.

T'siya Day School entered into a partnership with the Math and Science Academy in June of 2013. TDS teachers and the principal have consistently attended the MSA Summer Institute Core Program, the weeklong mathematics content course, and the Ir-Rational Number Institutes. T'siya teachers are supported throughout the school year by an MSA staff member in all professional learning activities. Teachers engaged in peer observations during the 2014 spring semester but they were not continued. To date, teachers at T'siya Day School have not participated in the professional learning design of looking at student work. The school principal resigned in June of 2015 and an interim principal was appointed until February 2016 when a permanent principal was hired.

Ohkay Owingeh Community School. Ohkay Owingeh Community School (OOCS) is located just north of Española, NM on the Pueblo of Ohkay Owingeh. The school consists of kindergarten through sixth grade; the total student population is approximately 100, all students are Native American and eligible for free and reduced price breakfast and lunch, and there is only one class per grade level.

Ohkay Owingeh Community School entered into a partnership with MSA in June 2013. At the time the partnership began, the school leader had been in place for several years. However, that principal retired and a new school leader took over in July 2014, the same principal that left San Felipe in April 2014. She stayed only one year and then resigned in May of 2015. Her replacement was the original principal who had retired the year before. This principal worked only half time during the 2015/2016 school year and has shared that she plans to return to retirement as soon a permanent replacement is found.

For the first two years of the partnership, all but two teachers at OOCS participated in MSA (5 out of 7). These teachers were consistent participants in the MSA Summer Institute content math weeks and the Summer Institute core program. However, none of the teachers participated in the Ir-Rational Number Institute math content days during the first year of the partnership. This changed in the second year, as it became an expectation of the principal and the school board. However, at the start of the partnership's third year, several teachers left. They were replaced by teachers unfamiliar with the MSA program. As a result, teachers from OOCS were not consistent participants in MSA during the 2015/2016 school year.

Taos Day School. Taos Day School (TDS) is located north of Taos, NM on Taos Pueblo. The school consists of kindergarten through eighth grade; the total student population is 164. All students are Native American and eligible for free and reduced price

breakfast and lunch and there is one class per grade level. All but one teacher at TDS participates in MSA (10 out of 11).

Taos Day School entered into partnership with MSA in June 2014. There was no principal in place at the time. The special education teacher was the acting principal and continued in that role until March 2015 when a new school leader was hired. There is a relatively stable teaching staff. Of the eleven teachers, six are Native American women and they are all from Taos Pueblo. There are three male staff members: two are teachers and the other the special education teacher.

All teachers participated in the MSA Summer Institute math content week and the Summer Institute core program. However, only three quarters of the teachers, on average, participated regularly in the Ir-Rational Number Institute math content days; the acting principal rarely participated. However, the new principal participates in most MSA school year professional learning activities.

The MSA on-going school-year support consisted primarily of working with the teachers and principal to prepare for the AdvancEd accreditation visit in December of 2014. Professional learning in the form of looking at student work only happened a few times as the staff simply felt overwhelmed by the pressure of the pending accreditation visit and preparation. An MSA staff member did, however, conduct several instructional coaching cycles with the staff that were used as a baseline for discussions on personal goal setting for professional growth. Since successfully passing the accreditation hurdle, TDS teachers have been meeting regularly to look at student work together with facilitation help from an MSA staff member.

Santa Clara Day School. Santa Clara Day School (SCDS) is located adjacent to Española, NM on the Santa Clara Pueblo. The school consists of kindergarten through sixth grade; the total student population is 124; all students are Native American and eligible for free and reduced price breakfast and lunch. There is one class per grade level. All but one teacher at SCDS participate in MSA (6 out of 7). Additionally, one teacher assistant, the special education teacher, the school counselor, and the principal regularly participate in MSA activities.

Santa Clara Day School entered into partnership with MSA in June 2014. The school leader had been in place since the fall of 2015 but left the school in June of 2015. The school counselor was asked to step in as interim and has been in the position since August 2015. There is a relatively stable teaching staff. Of the seven teachers, five are Native American, and all are women. The counselor and principal are the only males on the staff. Four are from the Pueblo of Santa Clara and one from San Ildefonso Pueblo. The special education teacher is a Native American woman also from Santa Clara Pueblo.

Teachers have been consistent participants in the MSA Summer Institute content math week and the Summer Institute core program. However, only three-quarters of the teachers, on average, participate regularly in the Ir-Rational Number Institute math content days; the principal participates about half the time.

MSA on-going school support consisted primarily of instructional coaching cycles in the beginning. This is because the master schedule did not provide time for teacher collaboration during the workday, except for Friday afternoons, which was taken up by staff meetings and other necessary trainings. Professional learning in the form of looking at student work did not happen. During the second semester the principal, along with a couple

of teachers, redesigned the master schedule to include 45 minutes of collaborative professional learning time per week. Teachers met in grade span teams to review student work and discuss mathematics content and pedagogy. Unfortunately, the professional learning time was not consistent for a variety of reasons; most frequent among them, teacher absenteeism made it difficult to provide consistent classroom coverage. Despite these challenges, the past principal and the interim principal remain enthusiastic about professional learning collaboration, especially collaboration around looking at student work.

Sample

Participants in this study included teachers and principals from five Bureau of Indian Education managed schools and one grant operated school. Eighteen teachers participated in the study, three from each school. Eight principals participated in the study, one from each school and two extra that had recently taken other positions. Details of the participants who participated in the study are explained in Chapter Four.

Limitations

The primary limitation of this study was sample size limited to the teachers and principals from our current six partner schools. This population was chosen for two reasons: (1) they participated in the MSA program and thus had experienced some degree of job-embedded profession learning, and (2) I had access to both principals and teachers and therefore could easily conduct interviews; thus I increased my chances for completing the study.

Another limitation of this study was the unique population. The teachers and school leaders include a rich diversity of ethnic backgrounds ranging from Native American to Anglo and Hispanic. Of particular note is the fact that many of the Native American teachers

come from a variety of places other than the Pueblo where each school is located. Many teachers are from Native American tribes outside of New Mexico. Therefore, this study is not representative of New Mexico or the United States and the findings generated will not be generalizable across populations.

Another possible limitation of this study is the close relationship that I have developed with the teacher and principal participants. On one hand, this close relationship may have resulted in study participants providing answers that I wanted to hear rather than being truly honest in their responses. In essence, participants may have had a tendency to exaggerate the positives they experienced through their participation in MSA, and in particular, their experience associated with job-embedded professional learning. Some participants may have felt obligated to repay the MSA staff in some way for the support they had been given and may have unconsciously been prone to providing skewed responses to the interview questions. On the other hand, the lenses through which the MSA team views these teachers and principals could be tainted (Maxwell, 2005). My colleagues and I have significant influence over how the teacher participants engage in job-embedded professional learning, and this could have influenced the interview responses. Since MSA provided all the professional development and most of the professional learning support, we may be inclined to assume that participants feel certain ways when they do not.

The professional development and professional learning treatment ranged from very little to significant depending on the school site. For example, all teachers and principals participated in the MSA summer institute–two full weeks of education best practices and one full week of math content. The majority of teachers and principals participated in the Ir-Rational Number Institute, an all-day professional learning day devoted to math content.

Most of the variation could be seen in the job-embedded school component. Some schools devoted weekly time to professional learning and the continuous improvement process while others did not. Additionally, each MSA staff member was in charge of working in a different school. Since our personalities are different, for some participants it may have been difficult to separate the connection between a specific professional learning design and the person who was facilitating. I was careful to ask additional probing questions to help clarify process from each person.

Data Collection Methods

Documents. Two sources of data were analyzed for this study. The first data source was the annual evaluation reports from the LANL Math and Science Academy (Trujillo, 2013, 2014, & 2015). These are yearly reports that already exist in public record and can be accessed without the permission of MSA or the individual teachers, principals, or schools. I analyzed these reports for the last three years: 2013, 2014, and 2015. The evaluation reports contained a variety of rich data. All data contained in the evaluation reports are anonymous.

Interviews with teachers and principals. I also interviewed teachers and principals from each of the participating school sites using the interview protocols included in Appendix B. I designed one protocol for teachers and another for principals. I developed the interview questions to explore the relationship between the implementation of job-embedded professional learning and school professional culture. The questions were organized around the conceptual framework of the *Leadership Model for Maximizing Teacher Engagement and Effectiveness* shown in Figure 14, a model that emerged from a review of literature. I conducted all of the interviews for this study between August 28 and November 3, 2015. Figure 13 shows the three sources of data that I used for this study.

Figure 13. Three sources of data were used for this study. They included: (1) teacher interviews; (2) principal interviews; and (3) MSA evaluation reports from three years (Trujillo, 2013, 2014, & 2015).

Recruitment process. In order to limit power dynamics between me and the participants–a dynamic that could potentially result in biased responses–participation in this study was completely voluntary. I recruited each of the eight principals through a letter explaining the purpose of the research, my role as a researcher, potential risks and benefits of the study, and asked if they would be willing to participate. I recruited teachers by presenting the study (Appendix C) at each school and distributing a recruitment flyer (see Appendix D). The flyer stated the purpose of the study, potential risks and benefits, and my role as a researcher. Teachers were given a week to contact me stating their willingness to participate in the study.

In order to meet the recommended number of participants for a grounded theory study, I only needed to recruit three teacher participants from each school. In some cases I received more than three volunteers per school. For those cases, I consulted with the principal to determine who was highly effective, moderately effective, and ineffective based on student test scores and observational data. I did not request nor was I given access to any test score data, observation data, or teacher evaluation records. I requested only that the principal tell me who was highly effective, moderately effective, and ineffective based on those criteria. Once I had teachers grouped into the three categories, I used a random assignment process to draw one teacher from each of these categories at each of the schools.

Data collection procedures. I followed the steps delineated by Gonzáles (2015, p. 4) to collect the data for this study:

- Utilization of "an interview protocol to solicit responses to questions in order to gain a deeper understanding of my research question."
- I conducted individual interviews that "ranged in duration from 45-60 minutes. The interviews took place in an office at the school in order to protect participants' privacy."
- I began each interview with "a statement to the participant explaining that the interview would be used in a research study."
- I described "the purpose of the research, the duration of the interview, and then describe how the interview data would actually be used in the study."
- "All interviewees remained anonymous throughout the study; I used pseudonyms for each individual so I could distinguish what the responses were and how they differed."

- "After consent was obtained from each participant (see Appendix E), I used an audio recorder to record the entire interview to ensure an accurate recollection of the interviews. In addition, I took notes during the interviews in order to highlight salient points."

Standards of Quality (Validity and Reliability)

Creswell (2002) explains that qualitative researchers "strive for understanding; that deep structure of knowledge that comes from visiting personally with informants, spending extensive time in the field, and probing to obtain detailed meanings" (p. 193). Creswell (2002) also identifies eight verification procedures that a researcher should use to ensure reliability and validity:

1. Prolonged engagement and persistent observation: Creswell (2002) claims that between twenty and thirty interviews are needed in order to saturate the data to ensure a valid grounded theory emerges. I conducted 26 interviews; 18 teachers, and eight principals.
2. Triangulation: I used three sources of data: teacher interview data, principal interview data, and site related documents in the form of evaluation reports.
3. Peer debriefing: I discussed the data analysis procedures and emerging themes with professional colleagues and my dissertation committee members throughout the process of the study.
4. Negative case analysis: I reviewed these data and my biases with my professors and committee chair.
5. Clarifying researcher bias: I had a clear role as a professional development provider and coach within the Math and Science Academy Program–the same program that

worked with school leaders and teachers to implement job-embedded professional learning. Therefore, I brought an inherent bias in favor of job-embedded professional learning to the study. I was cognizant of this fact and took deliberate steps to separate myself from the MSA role in favor of doctoral researcher throughout the duration of the study.

6. Member checks: No ambiguity emerged in the interpretation of the interview data, therefore, I took no steps to contact the participants to gain further clarity.
7. Rich, thick description: I recorded and transcribed interviews, coded data, and documented the study in detail. In order to enhance richness and contribute to authenticity, I incorporated numerous participant quotes and detailed narratives.
8. External audit: The committee chair and committee members served as external auditors for the study.

Data Analysis

I collected data from two sources: (1) teacher and principal interviews, and (2) MSA evaluation reports from the past three years. I begin the data analysis by organizing the data collected from interviews and the evaluation reports. I then proceeded to analyze the data (Appendix F) using the following steps for analyzing data in grounded theory research explained by Strauss and Corbin (1990):

- I closely examined the text by transcribing the interviews and organizing the emerging phenomena into categories.
- I applied techniques for enhancing theoretical sensitivity to enhance the objective lens through which I looked at the data.
- I conducted axial coding procedures in order to add context to categories.

- I conducted selective coding procedures to further define relationships and connections between categories.
- I then generated a theory based on themes that emerged from the categories.

I used the leadership model in Figure 14 to help organize the data, specifically to place each emerging theme in the proper context.

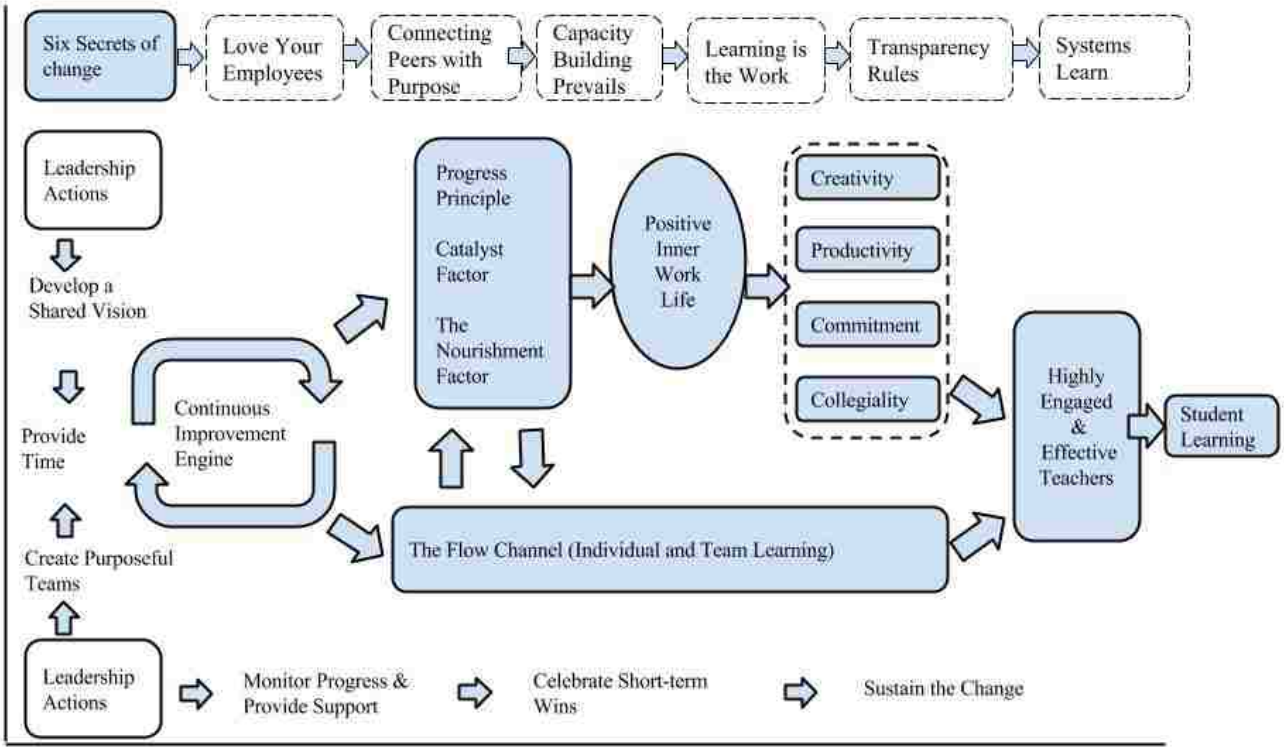


Figure 14. Leadership model for maximizing teacher engagement and effectiveness.

Summary

There is overwhelming evidence from the literature on successful school systems and from education scholars and practitioners that restructuring schools to make time for job-embedded professional learning with a relentless focus on continuous improvement will not only improve student learning and achievement but also improve teacher morale, engagement, effectiveness, and increase accountability (Barber & Mourshed, 2007; Darling-Hammond,

2013; DuFour & Fullan 2013; DuFour & Mattos, 2013; Fullan, 2011, 2014; Hargreaves & Shirley, 2012; Tucker, 2011). Despite such universal agreement, very little professional learning is evident in U.S. schools. The intent of this study was to develop a deeper understanding of the dynamic between the implementation of professional learning and its influence on school professional culture. Doing so will allow practitioners and school leaders to more effectively create the conditions for teachers to thrive.

Chapter Four

Research Findings

Purpose

The purpose of this research study was to develop a richer understanding of the dynamic that occurs when teachers engage in job-embedded professional learning characterized by a combination of formal professional development and structured collaboration or team learning, and how those experiences influence school professional culture. In addition to answering the research question, my goal was to help teachers, school leaders, and administrators understand how to better create the conditions for job-embedded professional learning and collaboration that help foster a healthy school professional culture.

Research Questions

The primary research questions were, “how do job-embedded professional learning and leadership influence school professional culture? And, what are the implications for leadership?” The first part of the first question relates to the types and conditions of professional learning teachers experience as defined partly by the concrete activities identified in the MSA theory of change model and partly by the professional learning that happens at each school site. My intention was to learn more about how teachers experience the professional learning process and how those experiences affect the school professional culture. Additionally, I wanted to learn more about the actions of leadership that either enabled or not the conditions necessary for job-embedded professional learning to take place and be effective. In other words, I wanted to know how teachers’ experience in the professional learning process, and leadership actions, influence how teachers think about and conduct their work, how they feel about their work and their colleagues, and to what degree

they are engaged in their work and satisfied with their job–all influences on school professional culture. The second question addresses how to apply the findings from part one to inform leadership. Through professional experience and an extensive review of the literature, I clearly understood the myriad variables associated with the successful implementation of job-embedded professional learning. Some of these include: time, structure, group dynamics, human resources, financial resources, capacity of the teachers, professional learning designs, the quality of the professional development providers, discussion norms, a trusting environment, use of effective discussion protocols, etc. My goal, however, was not to validate a particular theory, but rather organize statements and ideas into themes as they emerged from the data with the intent of developing a deeper understanding of this complex dynamic.

Data for this study consisted of in-depth interviews from teachers and principals. Teachers shared their experiences as participants in job-embedded professional learning with a focus on structured collaboration and team learning, while principals shared their understanding of job-embedded professional learning from the leadership perspective. In addition to interview data, I reviewed publically available data from three years of Math and Science Academy evaluation reports. I analyzed, interpreted, and coded the interview data; first, using the technique of open coding to identify major themes and later using axial coding to narrow the focus on specific phenomena (Creswell, 2007)**.**

Sample

Participants in this study included teachers and principals from five Bureau of Indian Affairs managed schools and one grant operated school; all names used throughout the study findings are pseudonyms. Eighteen teachers participated in the study, three from each school.

Eight principals participated in the study, one from each school and two others that had recently taken other positions. Among the eighteen teachers, ten were Native American. The range of experience among participants was large. Twenty-eight percent of the teachers had between 0-5 years' experience. Six percent had between 6-10 years of experience. Thirty-nine percent had between 11-20 years' experience. Eleven percent had between 21-30 years' experience, and seventeen percent had more than 30 years of experience.

Teachers ranged in age from their mid-twenties to mid-sixties; there were two male teachers and 16 females. On average, teacher study participants had 16 years of experience. The least experienced teacher had one year of experience while the most experienced teacher had thirty-five years. Most of the study participants were general education teachers; however, one was a special education teacher. On average, the principals had ten years of experience. The least experienced principal was in his first year while the most experienced had twenty-four years of principal experience. Two of the principals were not certified administrators and had only been assigned the duty of acting principal as an interim position. Of those two, one was a school counselor and the other a special education teacher. Another principal worked only twenty hours per week.

At the time I conducted the study, one of the principals had left the school and was already working as an administrator within the public school system. Two additional principals declined the opportunity to be interviewed. The first left the BIE school system in June of 2015 to work in the public school system while the second had only been on the job two months and knew very little about the BIE/MSA partnership.

Overview of Study Findings

Eight themes emerged from the data. In this section, I list each one, followed by a summary of the key points for that theme.

1. Structured collaboration or team learning has incredible potential to increase teacher motivation and engagement

Within this theme several key points emerged. First among them were that rich dialogue and new learning excites and engages teachers. Second, schools with transparency had a positive influence on professional culture. In contrast, isolation had a negative influence on professional culture. Third, peer accountability and positive competition elevate teaching practice. Fourth, collaboration and team learning facilitates the opportunity for feedback. Fifth, collaboration/team learning must have time and be structured for it to be effective. Sixth, goals and collective commitments are essential to the professional learning process, as are high expectations from leadership. Seventh, structured collaboration provides a natural pathway to leadership facilitating growth opportunities for teachers. And lastly, learning by doing leads to a shared mental model.

2. Connection to a larger professional community is powerful

Within this theme, several key points emerged. The first one was the power of affiliation. Teachers and principals alike spoke about how they loved feeling connected to other team members as they engaged in purposeful collaboration. As they did so, many discussed feeling a part of something larger; they described their work as have more meaning, even a moral purpose. Additionally, several participants spoke about how their collaboration with others from other schools, particularly among teachers who taught the same grade level,

provided needed affirmation and validation that they were on the right track. The benchmarking across the multi-school partnership seemed to provide a needed peace of mind.

3. The GANAS Framework directly influences teachers' work

   The GANAS Effective Instruction Framework directly influences teachers' work in a variety of ways. First, it provides clear direction for teachers to follow as they plan and implement an effective lesson–it acts as a roadmap for effective instruction. Second, it helps organize complex ideas and copious amounts of information that teachers receive in the summer months and throughout the year as they participate in formal professional development. Third, it facilitates deep reflection, rich discussion, and is a mechanism for feedback. Fourth, it provides a shared language in which educators can discuss their teaching practice in terms of research-based effective instruction. In essence, it helps to provide a shared mental model for effective instruction.

4. A shared vision, moral purpose, and collective commitments are essential

   Theme Four confirmed that a shared vision, moral purpose, and collective commitments are essential. Unfortunately, none of the schools in the study had an articulated shared vision and there was little evidence of collective commitments toward school or individual goals. However, most participants did feel a sense of moral purpose when they discussed the importance of teaching students.

5. New learning, the personal continuous improvement process and the progress principle

   Theme Five was characterized by three key points. First, engaging in authentic learning experiences led to deeper conceptual learning, confidence, joy, and pleasure. Second, when individuals' skill level was appropriately aligned with the challenge, they experienced

flow. Third, making progress in one's work drove motivation and engagement. This process seemed to form a cyclical loop: new ideas-implementation-feedback-reflection.

6. Group dynamics are important, complex, and must be monitored

Theme Six found that group dynamics are important, complex, and must be monitored by the school leader. A few key sub-themes emerged. First, group norms, professionalism, and respect for one another are essential to successful collaboration. Second, deliberate actions must be taken by the school leader to build cohesive teams; it cannot be assumed that collaboration will happen naturally.

7. The Merida Day School Success Story (An example of how job-embedded professional learning can positively influence school professional culture)

Out of all the schools that participated in the study, the Merida Day School emerged as the clear success story. The staff regularly participated in job-embedded structured collaboration and the results yielded a positive influence on school professional culture.

8. Leadership is essential

Leadership is an essential component to every theme that emerged in this chapter. However, there were two themes that emerged separately from direct involvement in job-embedded professional learning. These sub-themes consisted of positive pressure and simultaneous support, and nourishment factors: respect, encouragement, emotional support, and affiliation.

Theme 1: Structured Collaboration/Team Learning Has Incredible Potential to Increase Teacher Motivation and Engagement

The interview data clearly show that when the conditions are right, professional learning characterized by structured collaboration and team learning can have a powerful

positive influence on teachers' learning and consequently their engagement and professional culture of a school and system of schools. However, of all the themes that emerged, this one was the most complex. It comprised many moving parts and variables that naturally surfaced throughout the interviews. In order to facilitate a discussion of this theme in more depth, I have parsed out several key sub-themes, which include:

- Rich dialogue and new learning excites and engages teachers;
- Transparency vs. Isolation;
- Peer accountability and positive competition;
- The challenge of mental models, and learning by doing is essential;
- Time must be allocated for collaboration and it must be structured;
- Goals and collective commitments are essential to the process;
- Provides natural leadership and growth opportunities; and
- Leadership must set high expectations and monitor the process.

I discuss each sub-theme below and talk about the positive elements and the challenges that arose.

Sub-theme 1: Rich dialogue and new learning excites and engages teachers. There is extensive evidence across all the 18 teacher participant interviews that when teachers engaged with colleagues in structured collaboration, they frequently developed new insights through rich dialogue and consequently became more excited and more engaged in their work. For example, when asked about her experience working with colleagues in her school-based PLC–where the professional learning design was reviewing student work–Pamela explained:

> It was very powerful. It was amazing, even just fourth, fifth, and sixth grades. I think it was stronger because it was fourth, fifth, and sixth [grades]. Because there were some things that I wasn't really catching, because I was the sixth grade teacher, and the fifth grade teacher was like, "hey, we are doing that now, that is something that they must have missed, let me show you some strategies that will help them get there. (Pamela, personal Communication, October 27, 2015)

When asked when she feels most engaged in her own learning, Jenny (personal communication, September, 4, 2015) reported, "I think when dialogue….and looking at student work, because we didn't do that before, that is a huge movement that we have shifted to in our school, looking at student work." Later in the interview Jenny expressed, "I get very excited when we have those deep and rich conversations." Similarly, Rosemary (personal communication, October 29, 2015) described her experience in a multi-school PLC where her team reviews student work–common formative assessments–once per month. Towards the end of her description, Rosemary shared, "we had that rich discussion which I really value." Another teacher talked about her experience with team teaching:

> My first two years I team-taught with another teacher in the classroom–that was probably the most supportive environment I have ever been in my career. Of course you have to get somebody you are comfortable with, somebody that complements you, and you don't want somebody identical to your teaching strategy, somebody that comes out of it from a different perspective. I mean my first year…I am very linear, I start from one point and I go to the other, and my partner was more holistic, she sees the global picture and then she wants to break it down. So us working together that year was awesome because we hit every learning style between the two of us. And at

> the end of that year we exited nine students from Special Ed, which, was unheard of but we did. (Maria, personal communication, October 8, 2015)

When asked to describe the work of the PLCs within his school, principal Ralston (personal communication, September 9, 2015) shared:

> My own personal experience was that there was more learning going on than I anticipated. So there would be a specific goal but then there would be little nuggets that would come out of it, and it could be academic, behavioral, addressing family issues, addressing administrative issues at the school, but there was always learning to come from it, if the parties came together to actually focus. Communication is really important so I think anytime we communicate with a positive intention, we all benefit.

These testaments from both teachers and principals represent just a few of the many stories that discuss how structured collaboration is a powerful and positive contributor to rich discussion and dialogue around teaching practice.

Sub-theme 2: Transparency vs. isolation. Although there are several effective job-embedded professional learning designs to choose from, the two team learning structures that the MSA model promotes are: (1) the review of student work to develop a deeper understanding of student thinking and identify where students need help, and (2) peer coaching cycles using the GANAS Effective Instruction Framework to develop a deep understanding of teaching and learning. Both of these learning designs help to promote transparency of practice. From interview testimonies, only the Merida Day School has the two learning designs described above in place to perpetuate best practices and reduce variation between classrooms inside the school building. Not only has the Merida Day School successfully implemented these designs to promote transparency, but to date, they are

successfully sustaining them. Since the Merida Day School started this work at least two years ago, the teachers reported feeling a notable shift in knowing what is going on in each other's classrooms. All the teachers and principal interviews from Merida, taken together with data gleaned from the MSA evaluation reports, point to clear evidence that transparency, the opening of one's practice to the viewing of others, has created a renewed sense of excitement among peers around the profession of teaching.

The 2014 MSA Evaluation Report captures the Merida Day School teachers' impressions after engaging in the structured collaboration described above. One teacher reported, "Peer coaching and PLCs have really opened up everyone's door, everyone's mind" (as cited in Trujillo, 2014, p. 35). Supporting this finding, another Merida teacher expressed how the implementation of peer coaching made a tremendously positive difference in the school setting. She explained that the opportunity to watch other teachers helped her expand and refine her teaching instruction (Trujillo, 2014). When discussing the professional learning design of looking at student work, another Merida teacher shared, "We look at everything vertically now. First grade knows what second grade is doing, third grade knows what fourth grade is teaching, and on up" (as cited in Trujillo, 2014, p. 35). And lastly, when discussing the new learning that came out working with her colleagues in her school-site PLC, another teacher shared:

> So now looking at student work, really identifying what the kids' understanding of the concepts are, whether it is reading or math or science, we have really rich conversations and dialogue around student work. It helps me as a teacher; number one, I get ideas, I can give strategies to one of the teachers, or am receiving support, I am receiving ideas from other teachers if I am stuck in a particular slump or if these

> students just cannot understand this particular concept. (Jenny, personal communication, September 4, 2015)

Although the Merida Day School now has the structures in place that help to build and share knowledge about teaching and learning within the school, this was not always the case. One Merida Day School teacher shared that in prior years teachers didn't collaborate at all. When asked whether she had the opportunity to engage collaboratively with peers before MSA, Katherine (personal communication, September 4, 2015) responded, "No, we never did [had conversations with other teachers], we never really got to talk to any other teachers, even the teachers who were right next door. We never really had time together, we never talked about our students."

Unfortunately, what is happening at the Merida Day School is not the norm in other MSA partner schools. Although there are pockets of success, the data show that most teachers in the additional partner schools are still largely teaching in isolation. When asked about what support structures existed to help improve teaching in her school, one teacher explained:

> I would have to say it would be very slim. There are probably two other teachers that I could go to ask questions of things that I did not understand or I needed more clarification on. The rest I don't think I could because I don't think they understand enough themselves. It makes you feel like an island amongst yourself. (Teresa, personal communication, October 15, 2015)

When discussing the fact that there really were not any structures in place to support meaningful collaboration, Sofia (personal communication, October 8, 2015) lamented, "Because I am the only one teaching math at the 6th grade level it is hard to get help." Sofia

continued, “I wish we had more time to get together and talk to one another. I know I do a lot of things, Ms. Johnson [pseudonym] does a lot of things that are valid, we just don’t really share them.” Later in the interview, when asked if she felt emotionally supported in her work, Sofia responded, “I don’t. I just don’t this year. Maybe with colleagues a little bit but I don’t think we get into each other’s classrooms. Some grade level teachers work together and plan together, but we don’t have that luxury.”

Another teacher, Catrina (personal communication, September 29, 2015) reported feeling frustrated as a Special Education teacher because of the lack of communication between her and the other teachers: “One thing that makes me very frustrated within my school community is sometimes the lack of communication that general education teachers have with me.” Pamela (personal communication, October 27, 2015) described collaborative practice in her new school (not a BIE/MSA partner school), “I don’t see the collaboration at all at this school. I see a lot of people working really hard by themselves, which is a shame.” She continues, “Where I am at now, it seems like everyone is out for themselves. Everybody works in isolation and nobody helps each other–the morale is very down here.”

These testaments all paint a gloomy picture of how teaching in isolation without the opportunity to engage meaningfully with colleagues has a negative impact on morale. Although structured time for collaboration tends to be inconsistent at Maria’s school, it supposedly is much better than it used to be. Maria (personal communication, October 8, 2015) described her school before joining MSA as an environment where teachers operated in silos:

> It was a closed door policy, you know you go in and you close the door and you don’t open it again until May. Nobody knew what anybody else was doing so there was a

> lot of room for speculation. Now we all know what everybody is doing and it's not that we are nosy, we are just more supportive and we are more comfortable letting other people come in and see what we are doing…and our kids are happier I think too, they are more engaged in the lessons and if they are not, then we find out why, we don't get quite as defensive. (Maria, personal communication, October 8, 2015)

When explaining her experience with the multi-school PLCs–reviewing common formative assessments from students across all the partner schools–Rosemary (personal communication, October 29, 2015) expressed, "I wish we could go to their schools, visit their classrooms, and say, 'Oh Wow,' we are doing the same thing, just visiting will be great, but I really love to have that network and be able to meet with them." Rosemary was not alone in yearning to have the opportunity to observe other teachers–especially teachers at the same grade level. Many teachers shared in the interviews that they wanted the opportunity to learn from other teachers through classroom observations of one another.

When asked whether or not teachers knew much about what other teachers were doing in their classrooms, one principal responded definitively: "No, because I think they come in, close the door and they just don't have time during the day to work with each other and see what is going on" (Vangie, personal communication, October 30, 2015).

Another principal discussed teachers' experience with collaborative work:

> Well, they first started by being hesitant, then it became a nervous chuckle, and then it became like, "wow that was really cool…what you did in your classroom; I'm going to start doing that." (Kurt, personal interview, October 29, 2015)

When asked whether or not teachers knew much about what other teachers were doing in their classroom, a third principal responded:

> No, I don't think that there is much opportunity, partially because of limitations of staff being available to cover, and then just having seen teachers and how they work in their comfort zones, my sense is that most teachers aren't comfortable having people observe them. A few might be okay but generally as soon as that door closes, that is their room and their space. I think it would be good for teachers to be able to observe. (Ralston, personal communication, September 9, 2015)

As the data show, transparency of practice is still in the beginning stages in five out of six schools. A couple schools do have time built into their schedule for reviewing student work, but even those are inconsistent, and none–barring the Merida Day School–have allocated regular structured time for teachers to observe one another's practice. The interview data revealed that teachers find value in opening their practice to others in order to share the best practices that were happening across classrooms and across schools. When schools and school systems provide structured opportunities to peer inside one another's practice, whether it be through the review of data, student work, or through peer observations, it has a profoundly positive influence on school professional culture.

Sub-theme 3: Peer accountability and positive competition elevate teaching practice. Earlier studies showed that transparency of teaching has the potential to hold teachers accountable for implementing best practices (Barber & Mourshed, 2007). The findings from this study were consistent with the literature. The interview data showed that most teachers feel a true sense of accountability to their peers when they meet together regularly for structured professional learning. For example, one teacher reported, "We hold each other accountable. The opportunity to have teachers work together creates a level of professionalism I have not experienced thus far" (Teacher, as cited in Trujillo, 2014, p. 35).

Using teacher and principal interview data from the past three years, Trujillo (2014) affirms that, “Professional Learning Communities (PLCs) and peer coaching have the greatest impact on holding teachers accountable for implementing new instructional ideas because teachers become responsible to each other and all of the students” (p. 2). Trujillo (2015) further reported, “Teachers stated that the PLCs have been critical for supporting them to practice what they are learning in MSA, as well as holding them accountable for instructional improvement” (p. 29). In discussing her experience with the professional learning design of reviewing student work with colleagues, Carol (personal communication, September 4, 2015) explained, “So I feel like we are holding each other more accountable.” Carol goes on to say that everyone in her school-site PLC is responsible for bringing student work.

Maria (personal communication, October 8, 2015) shared her experience with peer coaching, explaining that it boosted her excitement of her teaching practice and also made her feel accountable to her peers through positive competition.

> It’s a motivator for one thing, you get excited because your colleagues are coming in to look at you, to watch you do it. There is a little bit of pressure, I mean it keeps you from letting yourself get into a rut because you go ‘my colleague is coming in on Friday, I really need to have the kids here by the time they get here,’ so it really keeps you on your toes. (Maria, personal communication, October 8, 2015)

When asked the question of how school leaders can best ensure that professional learning transfers to teaching practice, another teacher expressed:

> I think the trick is like with MSA–our participating–there is that piece where we know we have to share with each other, people know that eventually they have to video tape themselves, we have to talk about our teaching, and I think that is the piece

> that people are actually applying what they have learned to their classroom now, because there is an expectation and if you don't know what you are doing you are not going to be able to communicate that to others, or collaborate with the others, on what is happening in your classroom. (Catrina, personal communication, September 29, 2015)

Rosemary (personal communication, October 29, 2015) described how she felt accountable to her peers in her multi-school PLC where she reviewed common formative assessments with other grade level teachers in the MSA/BIE partnership. Rosemary explained, "I do [feel accountable] because we feel like if we don't have the work, how are we going to have our CFA, how are we going to discuss anything? We actually sit and create it and we make sure we have it done before moving on in the next thing."

Although teachers discussed feeling accountable to their peers, it was mostly discussed among the teachers at the Merida Day School where the job-embedded structures are firmly in place. This is evident from the comment of the Merida Day School principal:

> The one piece that is so key is that when teachers observe really good teaching, they get ideas, and they know what it looks like. They do whatever it takes to move their teaching to a new level because they know that in two weeks everyone is coming in [to observe them]. The more the cycle continues, the better they feel about what is going on. It is a positive competition. (George, personal communication, August 28, 2015)

It was clear from talking with teachers and the principals at the Merida Day School that everyone had high expectations for one another. Those high expectations seemed to

create a sense of urgency that elevated teaching and learning throughout the school. And this in turn, based on teacher testimony, positively influenced the school professional culture.

Sub-theme 4: Team learning facilitates opportunities for feedback. Positive descriptive feedback is essential to improving teaching practice and fostering teachers' intrinsic motivation to continue working hard to improve one's practice (Ryan & Deci, 2000; Hattie, 2009; & Killion, 2015). Job-embedded professional learning designs naturally allow teachers to engage productively with one another to provide feedback on each other's teaching practice. Descriptive feedback–whether for teachers or students–should be an essential outcome of collaborative work. Therefore, descriptive feedback is the thread that runs throughout the first three themes discussed in this chapter: (1) Structured collaboration/Team Learning has incredible potential to increase teacher motivation and engagement, (2) a deep connection to a larger community of professionals is powerful, and (3) the GANAS Framework has a direct positive influence on teachers' work. Although it embodies the first three themes in this chapter, I chose to highlight the power of descriptive feedback as a sub-theme in order to capture the voice of teachers.

The teachers truly value feedback from their colleagues and school leaders. One teacher expressed how she operates in her school-based and multi-school PLC. "If I come to a problem or a roadblock I will put it out to the staff to get feedback" (Jenny, personal communication, September 4, 2015). When asked about how her participation in the MSA Summer Institute is influencing her work, Karen (personal communication, October 1, 2015) explained, "I think it's kind of reinforced the importance of constant feedback, which is provided–and dialogue–more dialogue is happening." When asked where the dialogue was happening, she replied, "the dialogue is happening within our PLCs, among colleagues." A

couple of minutes later in the interview I asked Karen about whether or not she felt teachers' participation in the summer institute helped contribute to becoming more of a reflective practitioner. Karen responded:

> When we are meeting with other teachers we have an opportunity to listen to each other and it's like, "oh yeah, I'm doing that, too" and it's kind of having an opportunity to grow where we can reflect upon their practices but at the same time we are always reflecting upon our own and making adjustments within the classroom if necessary to improve the instruction. So I think reflectiveness is so important, self-reflection and constant feedback from others, which also affects your reflection as well so I think it's a constant. (Karen, personal communication, October 1, 2015)

A particularly powerful learning design that facilitates the use of descriptive feedback is the use of video to analyze one's teaching practice. One of the components of the MSA program requires that teachers video a math lesson, analyze it using the GANAS Effective Instruction Framework, and then choose a section of the video to share with colleagues in a structured discussion group. Both watching the video individually and with colleagues provides an opportunity for teachers to receive descriptive feedback. Many teachers talked about how watching themselves teach on video gave them powerful insight into their own teaching, it made them aware of things they simply had never thought of. Trujillo (2015) claims that the video taping component of the MSA program has been very effective in providing a real mechanism for feedback on one's own teaching. According to one principal, as cited in Trujillo (2015), "We need to give them this tool [analyzing video-taped lessons using GANAS) because it expands their ability to get immediate feedback, communicating with someone else" (principal interview, p. 23).

When asked to describe who or what had a profound impact on her teaching Carol, (personal communication, September 4, 2015) explained that, “I think one of the things that has affected me the most is the video taping of the lesson, and only because it helped me to get feedback and to be able to take a feedback.”

When asked how the MSA Summer Institute influenced her work, Amy (personal communication, October 29, 2015) explained that the opportunity to receive constant feedback from her peers in others schools was essential to her own reflection process:

> You get to meet other people from other schools and they get to tell you what things are working for them, their approaches, maybe their curriculum and how much more enriching something is in comparison, so you are always getting feedback from one another and you also learn from that and you get to come back to your room after reflecting. You can go back and reflect and ask questions, additionally if you don’t understand some things, so for me it is extremely enriching. Happy we are doing it. (Amy, personal communication, October 29, 2015)

Although descriptive feedback emerged throughout the interviews as a positive result of job-embedded professional learning and collaboration, it also surfaced a few times as having a negative effect. This was particularly evident when teachers discussed working in groups where the group norms had not been established or were not being respected. I will discuss the consequences of negative feedback later in the chapter under Theme Six: Group dynamics are important, complex, and must be monitored.

Sub-theme 5: Collaboration/team learning must have time and be structured. Consistent with the findings in the literature, the data from this study convincingly point to the importance of sufficient and structured time to ensure the collaboration is effective. Most

teachers interviewed pointed to key essential characteristics. In general, those consisted of time, a shared goal for the outcome of the collaborative work, discussion norms, a protocol for discussion, and a facilitator. When these things were in place, and when everyone committed to focused work, most participants reported that their experiences were very positive–they appeared to have a direct positive influence on teacher engagement. When those foundational elements were not in place, however, the collaborative work proved challenging.

Pamela (personal communication, October 27, 2015) shared her experience at her new school where collaboration time is part of the normal operations: bi-weekly grade level collaborative groups that meet for an hour and a half. Unfortunately, however, Pamela shared that although teachers have met regularly since the beginning of school, no meaningful learning has come of it. She explains:

> Where I am now we have PLCs as well and we have the 5th and 6th grade levels in there as well, but it is not student work related at all. We go in and we talk about strategies to help students, but it is not specific, we don't have student work or anything. We just have test scores and we just say, oh, these students are high, what can I do to help them? These students are low, what can I do to help them? These students are in the middle, what can I do to help them? We just talk about…not even strategies, I don't know what it actually is. It is like, well, you can use this computer program and you can do this. That is all that I have seen so far. (Pamela, personal communication, October 27, 2015)

Throughout the interview it was clear that Pamela was frustrated with the lack of productivity from her bi-weekly collaborative work. She specifically pointed to the fact that

the group did not have structured protocols to guide or drive their discussions. When I asked her what the key ingredients to effective collaboration were, Rosemary (personal communication, October 29, 2015) explained, “Fidelity for sure, making sure they are constantly happening. Communication, we have to be able to communicate with one another; and equal participation, just making sure everyone has the opportunity to share their ideas.” Teresa (personal communication, October 15, 2015) insisted, when asked what top three things needed to be in place to ensure a productive collaborative work session, “A facilitator; the work, you have to have the work; you have to show up and be prepared; and you have to be willing to put yourself out there. I mean really, you can’t just go and not do anything.” Amy (personal communication, October 29, 2015) talked about how her school-based PLC followed a protocol as they looked at student work with the goal of developing inter-rater reliability, and interventions. Amy explained, “we follow the protocol for it and complete the form, bring our students’ work, the pre and post tests, and then the teachers look at the work with us actually speaking during that time, and we analyze it as a whole group. They will tell us what they are finding.”

One principal explained that her responsibility as an administrator was to create the time necessary during the day for teachers to work collaboratively without interruption: “I’ve always been one to try and set it up, and making the time, and making time be meaningful, trying to find as much coverage as possible. Usually when we start the school year off that is what I’m looking for” (Isabelle, personal communication, September 8, 2015).

In contrast, when sufficient time is not built into the schedule, and when professional learning is not the expectation of the school culture, collaborative work may feel like “just another thing we must do.” When asked how PLCs were going at his school from the

principal perspective, Kurt (personal communication, October 29, 2015) shared, “I think we are overwhelmed, they just feel like sometimes it is one more thing on their plate. Some seem to be enthusiastic, but there are some that just go through the motions.”

Overall, the professional learning that teachers experienced working in the multi-school setting was very productive. Participants attribute this to the time and structure of the collaborative work. However, the results of the school-based professional learning, particularly the designs of reviewing student work and peer coaching, were mixed. The only teachers who reported that their professional learning time was always consistent and structured were participants from the Merida Day School. I attribute this to the fact that the principal was a consistent, and active participant in the learning design of looking at student work along with the teachers.

Sub-theme 6: Goals and collective commitments are essential to the process.

Across all interviews teachers reported that goals and collective commitments were essential to the process of productive collaborative work. When teachers had a clear goal and when they were committed to the process, the team learning was effective. When goals and individual commitment to the process were absent, there was little evidence of productivity, and those who wanted to make it work grew frustrated and resentful.

When asked what her expectations for teacher collaboration were, one principal insisted, “teacher collaboration is about actively participating and knowing that we always have room for growth, even me as an administrator, so there is always room for growth for myself” (Isabelle, personal communication, September 9, 2015). Isabelle specifically discussed the importance of a growth mindset, commenting that she really works hard to set an example of being a continuous learner.

Many teachers expressed their frustration working in collaborative groups because they felt not everyone was committed to the process and the outcomes. For example, when asked whether or not her school site weekly PLC devoted to looking at student work would be the same if she were not there, Catrina (personal communication, September 29, 2015) explained that she was aware of a couple PLCs where the other teachers in her group did not take the initiative to meet. She provided further context:

> I'm kind of like…with the rest of the staff, I do tend to take on that leadership role, even though it's not given to me, because I'm kind of like…let's not waste time! Let's get straight to it, take care of it, and do it, this is something we need to do, and it's going to be a positive thing, and it's going to help us as teachers, and our students as learners, so let's just do it! (Catrina, personal communication, September 29, 2015)

Catrina's testimony provides a clear example of how the collaborative group has not genuinely committed to the process of reviewing student work on a weekly basis. Although I do not know all the details, the evidence in this case seems to point to the fact that Catrina's group is meeting mainly out of respect and a sense of obligation to her rather than an obligation to improving student learning. This is an example of the importance of leadership in setting expectations–if the school leader does not set the expectations and insist that teachers engage with one another in meaningful ways to improve student learning as part of their job description, it likely will not be valued and hence not get done.

When asked what role she typically takes on in her multi-school PLC Teresa (personal communication, October 15, 2015) quickly replied, "facilitator!" Teresa explained, "I usually try to get everybody to keep moving along." When asked if her PLC stagnates at times, she responded this way:

> Yeah, because they [teachers] will sit there and start talking about what they had for dinner last night. I'm like, really! We are here to do some other work, let's go! And I mean, we are wasting time. We have kids that are at the very bottom of the barrel and these kids are going to be taking care of us one day." (Teresa, personal communication, October 15, 2015)

When asked to compare her experience in a school-based PLC looking at student work to her multi-school PLC, Julia (personal communication, October 1, 2015) explained:

> In our PLC [school-based] we kind of just look at assessments and not really too much student work, only because time has been crunched and people are absent so we haven't really done it, and it's like people are taking care of other jobs that have been assigned to them during PLC time and it's kind of difficult for me to meet by myself when I already know where my students are. (Julia, personal communication, October 1, 2015)

Julia's description is evidence that when there are no clear goals for engaging in the process, and when teachers haven't committed to those goals, the process of professional learning can easily be undermined or sidelined.

In contrast to her experience in her school-site PLC, however, Julia continued by describing her experience in the multi-school PLC where she and others work together to score a common formative assessment that they have given to each of their students. It is evident that the members of her multi-school PLC are more committed and feel more of a sense of purpose for coming together–they appear to be working interdependently to accomplish a specific goal:

> Those ones [multi-school PLCs] are very effective because we all do the same CFA; we bring it back with two highs, two lows, and two medium, and then we just discuss why we thought they were high, but then why we thought they were low, and then people have a different perspective of what they saw as proficient or not proficient. (Julia, personal communication. (October 1, 2015)

When asked about her experience with the professional learning design of peer coaching, one teacher shared that the lack of commitment from her colleagues and leadership derailed the entire process:

> I know when you were here we tried peer coaching and it was successful to a point, but the issue is that not everybody sees the value in it. I did, and I was always trying to be over prepared, but not everybody felt the same. And you want it to be a positive experience for everybody and sometimes I just felt like I was wasting my time because I work so hard, it wasn't about putting on a show, but I was doing even more. I know the more you do it, it just becomes kinda second nature, but if it is not valued, or there is not support by the administration, from the top down, if the teachers themselves don't value it, or see any value in it, so we started it but it crumbled because of that. (Sofia, personal communication, October 8, 2015)

Several teachers noted that simply showing up with a positive attitude ready to work is crucial and critical to collaborative work. When asked what the three keys ingredients to a successful PLC were, Amy shared her thoughts on the importance of being positive:

> Honestly, I think the first one is having a positive attitude because sometimes people come to the table not having that positive attitude. I think that also reflects on them not bringing their work and having excuses for it, so for me, those kind of things that

> become a problem only because they didn't follow through in one form or another. I've realized teachers are extremely busy and sometimes you cannot address everything, but I think having a positive attitude too, because ultimately it is for our learning and benefit, so a positive attitude would be the first for me. (Amy, personal communication, October 29, 2015)

Lastly, principal Isabelle (personal communication, September 8, 2015) shared that her staff "were not really in tuned with actively listening to each other. You have to be active listeners, active participants and then you also have to be an active recipient to comments from your colleagues" (Isabelle, personal communication, September 8, 2015). Additionally, when discussing how she deals with teachers who have not truly committed to the process of collaboration, Principal Isabelle explained:

> That's a theme that has been probably the biggest challenge for me as an administrator, just bringing in those teachers that are kind of on the outside, they are kind of like, "I'll be here because I have to be here but I'm just kind of sitting on the edge" and then I have to bring them in, and say "I noticed this, and this concerns me." I think that an administrator job is to let staff know from the beginning that this is the way, this is just the culture of the school, collaboration time, professional learning communities, those work. (Isabelle, personal communication, September 9, 2015)

Sub-theme 7: Provides natural leadership and growth opportunities. Although I did not ask the question directly, several teachers shared that engaging fully in the job-embedded professional learning and structured collaboration allowed them to naturally take on a leadership position. Pamela (personal communication, October 27, 2015) shared her experience:

> I don't know if we have talked about it before but it is just growing as a professional, definitely my understanding of the content has grown. I think MSA has taught me how to be more of a leader. Before I would just follow and do whatever I was told to do and just stay out of the way. Now I have grown, and MSA has pushed me to be a leader. I mean we always work in groups and you are always given a task and I feel like I always took over that leadership role within my group. It has taught me how to be more of a leader. (Pamela, personal communication, October 27, 2015)

Although she did not mention leadership directly, Beth (personal communication, October 19, 2015) discussed naturally taking on a leadership role during one of her professional learning activities in the multi-school collaboration:

> Well, I think some people are just more comfortable vocally, so yeah, Rosemary [pseudonym] does usually take over and Julia [pseudonym], she is usually kind of on the side, but she is the one that kind of keeps us on track too. I think it's usually myself, I will try to lead them in the right direction sometimes too because then I know we get off topic sometimes, so I really want to make the most of my time. (Beth, personal communication, October 19, 2015)

Of the teachers who discussed leadership opportunities, it appears most of them simply asserted themselves when they felt the collaborative group was losing focus. Many teachers discussed that they never intended to take on a leadership role; rather, they simply felt a strong sense of urgency to get as much out of the team learning as possible, and since no one else seemed to be willing take on the role, they just stepped in.

Sub-theme 8: Mental models will only be constructed through learning by doing. The first question that I asked teachers in the interview was: continuous improvement is a

term often used to describe an ongoing effort to improve teaching and learning. What does the term mean to you? The purpose for asking this question was to gather information on teachers' understanding of the continuous improvement process as defined in the literature: review data to identify a problem of practice, set specific goals, develop an action plan to achieve the goals, take action, collect and analyze appropriate data, provide intentional feedback, and provide intentional celebration (Kanold, 2011; Learning Forward, 2011).

It was clear from the data that most participants did not conceptualize the term "continuous improvement" as a collaborative effort that works through a structured cycle with specific goals and defined outcomes designed to improve teaching and learning. In contrast, the mental model that the vast majority of participants seemed to carry in their heads was much more general in conceptualization. For example, when asked what continuous improvement meant to her, Pamela (personal communication, October 29, 2015) explained, "basically to me it just means that you continue to learn and develop strategies and ways to improve yourself as a professional and as an individual." Another participant responded, "you continue to improve on what you know, on what you already have developed. So, if I already have an understanding of something, I continue to develop that understanding where I can help my students have a better understanding of their learning" (Teresa, personal communication, October 29, 2015).

Inching closer to how the term continuous improvement is defined in the research, Carol described it in the context of her own experience at the Merida Day School. She described specific job-embedded professional learning designs. Carol highlighted peer coaching, the review of student work, and reflecting and discussing a video of her teaching with colleagues. She shared her experience participating in peer coaching cycles this way:

> So as a teacher it is doing things that are constantly making you better. So like one of the things for us is doing peer observations of one another. When you are the one getting observed you are putting forth your best lesson. But then also, if you are the one observing, then you are watching a lesson and getting ideas. I think that it is just that we are not at the level of teaching that we want to be at so we are just constantly trying to get better. (Carol, personal communication, September 4, 2015)

Although the question did not have a right or wrong answer, no one–teachers or principals–described the process of continuous improvement as it is defined in the literature. This is a monumental challenge, and it speaks volumes of the difficulty of creating coherent systems designed to improve teaching and learning within the system. It tells education leaders that before being able to have conversations about continuous improvement, about specific actions necessary to implement the continuous improvement process, it is first necessary to develop a shared picture of what the term means. If it is to be successful, we need to shift the mental model from disparate understandings to one where teachers have a clear understanding of the process.

It is clear from the evidence that professional learning defined by the continuous improvement process, or pieces of it like structured collaboration, has the potential to re-ignite the flame within teachers and catalyze deeper interest, commitment, productivity, creativity, engagement and ultimately effectiveness. As highlighted in the LANL MSA Evaluation Report, Trujillo (2014) recommends, “Continue to emphasize Professional Learning Communities as a systemic way to support and reinforce new learning, to build continuous improvement structures, and hold teachers accountable to implement new

learning" (p. 31). The challenge will be to develop the same mental model so that everyone is able to move forward.

Theme 2: Connection to a Larger Professional Community is Powerful

Senge (2006) claims, "We have come to believe that one of the reasons people seek to build shared visions is their desire to be connected in an important undertaking" (p. 192). Ryan and Deci (2000) contend that people naturally seek connections with others through meaningful relationships. In addition, Fullan (2008) insists that people seek connections to things beyond themselves.

Across all interviews, teachers discussed how they loved and valued the opportunity to come together with colleagues from across the BIE/MSA partnership schools to engage in meaningful professional learning. Two sub-themes emerged from the data: affiliation and moral purpose and affirmation/validation/benchmarking.

Sub-theme 1: Affiliation and moral purpose. Personal connections with other professionals emerged as a consistent sub-theme. For example, while discussing his experience in the multi-school PLC, Michael (personal communication, October 19, 2015) excitedly reported, "Yeah I like the input I get, there is a lot of energy, we are having fun but we are still working and learning something, we are still sharing and I like that–I think it makes the job more rewarding." Another teacher discussed how she valued the personal connections and felt like being connected to a larger professional community provided a deeper sense of purpose for her work: "Yeah, it is like you are an MSA teacher, it is our school, but then it goes beyond that and there is a whole bunch of us and we are all like a family, because I know like at any time I can connect with people that can call me" (Elizabeth, personal communication, October 29, 2015). It is clear that Elizabeth feels a

strong connection with her colleagues; she seems to feel connected to a force that is greater than her or her school. Elizabeth also speaks to the power of symbols, and the connection that people feel to symbols. To Elizabeth, MSA is not just a program–it has symbolic meaning.

Another teacher discussed how she felt collaborating with her colleagues during the MSA Summer Institute and the Ir-Rational Number Institutes:

> I get so much more out of my colleagues comments and their ideas because I build off of them and branch off of each other and that is kind of how it is with team teaching, there is somebody else to talk about and make you think about things in a different way, expand your thinking maybe, not necessarily change it, but expand it. (Maria, personal communication, October 8, 2015)

Rosemary (personal communication, October 29, 2015) shared that the multi-school collaboration was very powerful for her as well. She explained, "So we collaborate and talk and they give me their ideas, we email each other ideas like graphs, progress, and different ideas." As one principal shared, the MSA Summer Institute is essential because it provides teachers the opportunity to engage with one another:

> They learn about sharing with other teachers, our staff really likes that, they like the aspect of…they have the opportunity to sit and share with their colleagues from other schools. To me that [sharing] is the strongest point. I didn't mention it before, but the way to get teachers excited is to get them together to talk. They have to get together and talk and share ideas. That happens in schools but unfortunately it is in the teachers' lounge and there is gossip. (George, personal communication, August 28, 2015)

Another principal shared her thoughts about when she felt her teachers were the most engaged in their own learning:

> When they are allowed to leave this place and meet with other people, that's when they are more engaged. I think that when they are at the institute [MSA Summer Institute]… I think it's a good thing because they are meeting with other people and they are seeing that we are doing good things, or maybe we need to do better. I see when they meet with like George's group of teachers, they are really involved and they are always engaged. I went to the institute this last time and they were really involved, looking at student work, looking at different skills work, and they were like, one of them told me "our kids do pretty good" in comparison to the larger group. Yeah, so I think that's when they get involved, when they are with other people that are outside of the school setting. (Vangie, personal communication, October 30, 2015)

Sub-theme 2: Affirmation/validation/benchmarking. Humans in general desire feedback (Killion, 2015; Ryan & Deci, 2000). Across all of the teacher data, I saw clear evidence that teachers enjoyed working in the multi-school collaboration because they were able to share their teaching and also gauge where they were in reference to other teachers in other schools. Teachers shared that they feel validated when others assure them they are doing the right thing. This affirmation in turn acts as a strong motivator to keep working hard. The multi-school collaboration and team learning is particularly important for teachers in small school environments where there is only one teacher per grade level:

> In the community, working with my peers, again that affirmation, telling me, "Yeah, we are on the right page, you are doing the right thing" and you can help others and

> they ask you for help, and I think that is good, because someone is leaning on me and I'm feeling like "What? I'm not the expert here" and they say, "Well it worked for you so can I give it a try? Can I get that idea?" and that is one thing with MSA, and we were looking at the work and I would say, "Is it okay if I use some of this stuff?" and the group pretty much said, "This is your work too, this is not just ours, this is yours, too, you don't have to ask permission." And I thought that was nice, because the simple thought about it's my work, and I guess it is, so that is kind of where I would sit around there. (Michael, personal communication, October 19, 2015)

When asked whether or not teachers would like even more opportunity to collaborate with their colleagues across districts, they answered with a resounding yes. Numerous teachers explained that–in addition to looking at student work–they really desired the opportunity to observe their peers teaching at another school–basically, to participate in peer coaching cycles across the schools.

When one principal was asked about his expectations for teacher collaboration, Kurt (personal communication, October 29, 2016) discussed his desire to collaborate with local schools as a way of learning and sharing best practices:

> In an ideal setting, we live next to a town and a school district, and entire schools that we know very little about, So my expectation shortly, would be collaboration between the public schools and the charter schools, not as a competition but to see where there are similarities or differences, to see how can we transition kids back and forth, to see how can we make education similar as children move between town and here.

Both of these sub-themes, affiliation and moral purpose, and affirmation and validation, seem to be key contributors to how teachers feel about their school professional

culture. In general, the multi-school team learning appears to provide that intangible spark that re-invigorates teachers, engages teachers, and improves their overall morale.

Theme 3: The GANAS Framework Has a Direct Influence on Teachers' Work

The GANAS Framework is a central part of the Math and Science Academy as it acts as a common tool to help teachers and school leaders plan for and discuss effective instruction. The MSA evaluation report confirms this finding:

> The GANAS Framework, developed by MSA, has been a very effective tool for guiding teachers as they do their instructional planning, for providing a common language to all MSA conversations, and as a tool to help link the various activities of MSA together through that common language–it is used by teachers and principals alike. (Trujillo, 2014, p. 2)

Although the GANAS Framework has always been part of the MSA program, it appears from the interview data that the influence of GANAS stretches well beyond a planning and discussion tool. In fact, it seems to have a direct impact on school professional culture. Although the GANAS Framework was not part of my initial set of interview questions, it nevertheless emerged frequently throughout the interviews. When study participants referenced GANAS, I often asked follow-up questions in order to learn more about how it played a role in their professional work. The majority of teachers discussed GANAS as a professional learning tool that has helped them develop a deeper understanding of the elements of an effective lesson. The following sub-themes emerged as noteworthy discussion points:

- Provides clear direction (acts as a roadmap for effective instruction);
- Helps organize complex ideas and copious amounts of information;

- Facilitates deep reflection, rich discussion, and is a mechanism for feedback;
- Provides a shared language for all professionals (shared mental model); and
- Helps set clear goals, which can lead to forward movement and evidence of progress in one's work.

Sub-theme 1: Provides clear direction (acts as a roadmap for effective instruction). In general, participants reported that the GANAS Effective Instruction Framework was an organizing tool that acted as a road map for both planning and guiding effective mathematics or science lessons. One participant described it this way:

> The GANAS form, having that framework that when you're planning, it just makes you a little bit more conscientious. Did I include that? Did I do a good launch? Did I get feedback from everyone? Did I engage them? It helps you plan and then go back and evaluate your lesson afterwards. (Teacher, as cited in Trujillo, 2015, p. 23)

When asked to describe something that has had a profound effect on her teaching, Julia (personal communication, October 1, 2015), discussed how the GANAS Effective Instruction Framework had become a powerful guide:

> I think working with the GANAS form. I mean I'm guilty of not using it consistently but looking through it and saying, "wow, you need to have your launch," you can have your teams in place but you need to have a very good launch, and then you need to make sure you summarize it [the lesson] at the end to make sure your students understood it. You need to be clear with your objectives and follow the objectives through, don't jump from…"Oh yes that is a good idea, let's start on that," no, just stay on the objective and the GANAS form.

In describing her use of the Five Practices for Orchestrating Productive Math Discussions—fundamental subcomponents of GANAS, Jenny (personal communication, September 4, 2015) explained, “just thinking in that framework, working in that framework, really helped to bring my lessons to be more robust. I just wasn’t all over–I had a road map.” Maria (personal communication, October 8, 2015) discussed her experience with learning new elements about effective instruction; specifically, she discussed the summary of a lesson and the GANAS Framework:

> My big breakthrough was to remember to do the summary at the end of every lesson, because I guess I didn’t really focus on how important that was, to summarize what we did in class at the end of the lesson, and if we ran out of time, we just ran out of time and I would get to the summary later. Through MSA and GANAS it became very apparent that I needed to focus on that summary; even if I wasn’t finished with the lesson I still needed to summarize what we did do and it helped the students remember from day to day and that really hit home with me by forcing myself to do the summaries and then I saw the results coming back with my students. GANAS helped me make sure that I had all those components in the lesson for an effective lesson. (Maria, personal communication, October 8, 2015)

Sub-theme 2: Helps organize complex ideas and copious amounts of information. The Math and Science Academy partners with schools for three years to help them improve math and science instruction by building capacity in the teaching professionals and school leaders with whom it partners. Specifically, MSA works in the areas of mathematics and science content and pedagogy, effective instruction practices, and professional learning designs that foster continuous learning. Each summer for three years, teachers attend the

MSA Summer Institute: three weeks of formal professional development, one week of content and pedagogical content knowledge training, and two weeks of research-based best practices focused on assessment, student engagement, differentiated instruction, and brain-based learning. Although these comprise the majority of the summer curriculum, it varies slightly depending on the needs of teachers. I reiterate this because, during the course of three years, teachers receive a tremendous amount of information. Although teachers typically report feeling very excited about their new learning each summer, they also report feeling overwhelmed and that they often struggle to implement their new knowledge when they return to the classroom (Trujillo, 2013, 2014, 2015). Two of the fourth-year participants in this study reported that they were overwhelmed until their fourth summer when everything finally started to make sense. According to the LANL MSA Evaluation Report, Trujillo (2015) claims that, "The GANAS Effective Teaching Framework ties all MSA training together and provides continuous reference for all work" (p. 41).

Across almost all the teacher and principal interviews, the data show that the GANAS Framework is so important because it is a tool to help organize an abundance of complex information. It seems to be the bucket in which teachers can deposit the most relevant information–the understandable and usable information–so that they can actually implement it. In other words, it is a catalyst for taking research to practice. And, as teachers progress through the MSA program and continue to learn more information, they can continue to hang that new knowledge on the GANAS Framework in the location that is the most appropriate so that when they go back into their classrooms in August and use GANAS as a planning tool, they can readily retrieve the theory, content, and strategies they learned over the summer. For example, after being asked to describe an experience in the past or on-going that has had the

most profound effect on her teaching, one teacher enthusiastically explained, “It would have to be the GANAS Framework, because you can take that with you anywhere you teach and it’s all the same” (Elizabeth, personal communication, October 29, 2015). Elizabeth further explained why she felt the framework was so powerful:

> Because you have a plan, and you are looking at all the different parts of GANAS, I mean even just having your goals, I have my goals, I’m not in the same school I was in but my goals are posted and I do everything that I need to do to meet all the different components of GANAS. It is everything! I think it is something that is going to go with me throughout my teaching career, that is not going to change; it will always be there. (Elizabeth, personal communication, October 29, 2015).

Further along in the discussion, Elizabeth confessed, “I just use the GANAS Framework, it is like my bible.” Among all of the teachers and principals who discussed GANAS as an effective tool, it was the third and fourth year participants that felt it was the most powerful.

Sub-theme 3: Facilitates deep reflection, rich discussion, and is a mechanism for feedback. Building on the sub-theme that structured collaboration/team learning must have sufficient time and be structured, the GANAS Effective Instruction Framework seems to emerge as the framework that catalyzes rich research-based conversations around teaching practice. For example, one teacher shared that the GANAS Framework was the primary observational tool used in peer coaching cycles at her school. She explained her experience:

> We also use GANAS for our PLCs, our peer observations, those are the forms that we use to kind of…we are not evaluating a teacher, but we are trying to pinpoint a strength and some of the weaknesses that teachers have. Also, teachers will choose a

> particular thing to look at on the GANAS form when they are observing and they want feedback on something particular. (Jenny, personal communication, September 4, 2015)

Jenny is describing the GANAS Framework as a tool that allows teachers to observe each other while looking through a lens of effective instruction. The framework enables teachers to observe their colleagues in action, observe teacher moves and student actions, and make notes in preparation for the post observation conference. The GANAS Framework helps to focus the conversation around specific research-based practices that were observed as opposed to leaving the discussion open to subjective interpretation. Without such a tool, many teachers reported that observing each other in peer coaching/observation cycles would not be as effective. Principal George (personal communication, August 28, 2015) explained that through "peer observations teachers see what is going on and then take take-ways and then will try to implement stuff in their own classroom." He further discussed how GANAS was used to help structure the conversations around the observation that allowed teachers to take away specific things to use the next day–in essence, describing how the GANAS Framework became the organizational framework for peer coaching.

Sub-theme 4: Provides a common language for all professionals (shared mental model). Several participants claimed that the GANAS Framework was essential to their collaborative work because it gave them and their colleagues a shared language to use when talking about effective instruction and research-based best practices.

In general, study participants explained that the GANAS Framework provided them a common vocabulary that facilitated rich discussions with their colleagues. They were able talk about the launch, explore, and summary of a lesson, and their colleagues would know

exactly what they were talking about. There are two examples of the power of this common language in helping to unite teachers around a common language. In the first example, three teachers, Sofia (personal communication, October 8, 2015), Maria (personal communication, October 8, 2015), and Joseph (personal communication, November 3, 2015) spoke candidly about their experience with staff division. When they began the partnership with MSA, teachers in their school were given the option of participating; only about one half of the staff chose to do so. After completing the first summer of the MSA Summer Institute, half of the staff came back energized, full of ideas, and with a new language–connected to research-based best practices–that allowed them to discuss their new learning. The MSA teachers, as they became known, began to discuss their practice in terms of GANAS–teachers regularly used terms such as launch, explore, summarize, accessing prior knowledge, student discourse, formative assessment, self-efficacy and many more in the context of their daily vernacular. All three of the participants I interviewed that are associated with this school shared that, as a result of being given the option to participate in MSA, a noticeable divide had developed between the ones who joined and the ones who did not. They described it as a "haves and have-nots" situation. All three participants reported that the staff members who participated in the MSA Summer Institute, those who engaged in the powerful shared learning experience, and who adopted a common language, felt closer to one another than ever before. In contrast, the staff who did not were left feeling isolated. All three participants claimed that the GANAS Framework was the pivotal organizing tool that helped them make sense of all the complex ideas–it was the essential tool that helped them bring research to practice.

Another teacher, Pamela (personal communication, October 27, 2015) shared her experience at her new school–she left the MSA partner school at the end of the school year to

begin work at a public school not far away. Pamela shared that she was clearly frustrated at her new school, and told me about the time she was being observed by her new principal. She explained that the public schools used the Charlotte Danielson Framework as the evaluation tool, in which there are four domains with 22 components in each domain on which teachers can be evaluated. The principal initially shared that he would base his teacher observations on all 22 components. After significant push back from the staff, he announced that he would limit his observation to four components–but he didn't tell teachers which components he chose. Pamela's frustration stemmed mostly from the fact that there was no common language shared between her and her principal–the Charlotte Danielson Framework is long, complicated, and takes years to master. She explained that it was not fair for her principal to evaluate her without telling her on which domain and components she would be evaluated. Pamela and her principal, unfortunately, were not able to have a conversation about teaching and learning with shared language because the framework they were using was simply too large and complex. Since the framework was new to the public education setting, neither Pamela nor her principal knew it very well. In contrast to the Charlotte Danielson Framework, the GANAS Framework, from what the data show, is a concrete tool that promotes common language about effective instruction, and is a simple and effective mechanism that helps organize complex ideas which facilitates taking research to practice.

The sub-themes described in this section are examples that help shed light on the fact that in order for a group of individuals to move collectively toward a shared vision, it helps to have the same mental model in their head–in other words, the same picture of what the ideal looks like. The GANAS Framework helps teachers develop the same mental model of what research-based effective instruction looks like. The data show that it helps define the path

toward the shared vision. For example, when teachers say "I had a great summary," everyone in the room who uses GANAS regularly–who has gone through a couple summers of the MSA Summer Institute–is able to visualize the components of a summary–their mental models are similar. Additionally, teachers and principals can make the connections from those individual components to the specific strategies and big ideas they learned during their formal professional development during the summer. The data show that the shared understanding provides a connection between professionals: it seems to affiliate them to their colleagues in a way that many have never been affiliated before–like a bonding mechanism.

Theme 4: A Shared Vision is Essential

The leadership literature is ubiquitous in speaking about the power of a shared vision as being the force that pulls many individuals in the same direction toward the ideal place (Fullan, 2008; Hargreaves et al., 2014; Kotter, 2012; Kouzes & Posner, 2012; Senge, 2006). Despite overwhelming agreement from researchers and practitioners alike, there is very little evidence that the BIE/MSA partner schools have attended to this important work. The interview data reveal no concerted effort on behalf of any school to collectively define, mobilize and support teachers and ancillary staff toward a shared vision. Additionally, the data show that schools–although they may have written goals–do not make them an essential piece of their work. Furthermore, it appears that most individual teachers do not use goals to drive or improve their teaching. The data do reveal, however, that most teachers feel a true sense of moral purpose for teaching and for their students. Three sub-themes emerged from the data:

- Schools do not have an articulated shared vision;
- There is very little evidence of school and individual goals; and

- Most teachers do feel a sense of moral purpose.

Sub-theme 1: Schools do not have an articulated shared vision. Nowhere in the interview data did teachers or principals discuss having or working toward a shared vision– no one described the ideal place they wanted their school to be. For example, no one talked about wanting to create a culture of mathematics learning where student discourse was the norm rather than the exception; nor did anyone discuss the end product of his or her work. Without defining the place that you want to go, it is very hard to set clear school and individual goals. And, without clear school and individual goals that have been developed collectively, it is virtually impossible to mobilize many individuals in the same direction.

When asked for his final thoughts at the end of the interview, Principal Ralston (personal communication, September 9, 2015) shared the following:

> Well, there is a saying that the fish rots from the head down and so does an organization. If you have leadership that is invested, and believes in whatever it is, if you are trying to sell a product or influence a sort of way of thinking. If the leadership actually believes it and has the full ability to carry it out…like I said before, I think people can follow along, but it has to be done carefully. If you are going to be the man to enforce people to do it, they are never going to be happy following, even if they like it, nobody wants to be controlled in that way. So leadership is the guide and people can kind of go along in that stream of energy, they cut the path of energy, and folks can go along and create their own branches in how they want to grow. So leaders can be like the base of the tree in a sense, and teachers can be the branches; that is how I see it. Leadership needs to be insightful and tactful.

Although Ralston understands the importance of creating a shared vision, and of the importance of leadership in guiding the organization toward the vision, he confessed that he was typically too overwhelmed to practice what we inherently know is best practice.

Sub-theme 2: There is mixed evidence of school and individual goals. MSA recognizes that setting goals is fundamental to forward movement in one's practice, especially as it pertains to implementing what was learned during the summer institute. With this in mind, the MSA staff made it a point to dedicate time at the end of the three-week summer institute for teachers to write down the things that they wanted to implement in their classrooms during the upcoming school year. Teachers wrote down four goals; they noted any support they might need to implement the goals; recorded the date by which they expected to see evidence of progress; and then defined what metrics they would use to measure success. The MSA team received a copy, school principals received a copy, and each teacher kept his/her original. Several principals claimed they were going to work with their teachers to make those goals a part of the professional development plan process, a component of how teachers are formally evaluated. In addition to individual goals, the MSA team worked with teachers and the principal at the beginning of the school year to help them establish school goals. The intention for this action was to find areas where teachers' individual goals overlapped, hoping that a set of school goals would then emerge naturally. With school and individual goals defined, the idea was that teachers could then make collective commitments toward achieving those goals and then work together to help each other accomplish them–creating a real purpose for collaboration and team learning. This work with teachers and principals took place in August and September of 2015, the same time I was conducting interviews for this research study. When I developed the interview

protocol, we had not yet gone through the process of working with teachers and principals on their individual and school goals; therefore, it was not a question I asked directly. However, despite not being part of the question set, the idea of individual and school goals, or lack thereof, emerged as a sub-theme.

In addition to our work with teachers and principals to define school and individual goals in the context of teachers' new learning in MSA, each school supposedly has a set of SMART goals, a requirement from the Bureau of Education Line Office. No principals or teachers across all interviews referenced their schools' SMART goals.

Despite working with teachers and principals to establish a set of school and individual goals, the data overwhelmingly show that teachers and principals do not use them to guide daily practice. Although many teachers talk about areas of their teaching they wish to improve, the specifics are nebulous. Additionally, I found little evidence that teachers were using their individual goals in any substantive way.

Although the interview data clearly show that schools do not seem to use formalized and collective goals to improve teaching and learning in the school, there were teachers who expressed frustration over the absence of them. Also, several teachers expressed frustration at the lack of commitment from their colleagues to improve their own teaching practice. Teresa (personal communication, November 8, 2015) expressed frustration and shared that her colleagues simply did not seem like they wanted to–or needed to–improve. She shared that teachers had not come together as a school to talk specifically about what they were going to commit to, nor what new learning they wanted to implement as a result of the summer institute. Teresa also shared that her school leadership did not initiate the process. When

asked what actions she would take to help teachers and her school improve if she were the school leader, Teresa responded,

> Well, first, I would, I think that we would have to come together over the summer. We would have to have a summit and just say okay, these are what I am looking for, what are you looking for? What do you want to do for the next school year? Set our goals and our purpose, and then say how can we do this? (Teresa, personal communication, November 8, 2015)

Teresa went on to say that she would insist that teachers come back together at the start of the school year to revisit exactly how they were going to work together to accomplish their collective goals.

In another example, Sofia (personal communication, October 8, 2015), lamented that many teachers at her school did not seem to share her sense of urgency to improve student learning. She sighed, “It is frustrating for me.” Sofia continued to discuss her experience in PLCs and peer coaching sessions. She felt frustrated because the teachers in her team either did not have goals at all or they were not the same as hers. In concluding her discussion on group formation and the value of the school site team learning, Sofia explained,

> That is what I mean when I say that grouping needs to be strategic. So for example, if there are teachers who are interested in looking at student discourse, so you are looking for specific things. So the goals have to be similar. (Sofia, personal communication, October 8, 2015)

Sofia’s frustration seems to stem in part from the fact that the foundational work of setting school and individual goals to improve teaching and learning had not taken place. From her testament, there was clearly a lack of urgency and commitment on the part of her

colleagues. Collectively setting the goals for how to improve the work establishes the "what." The next step is to determine the "how." However, without the "what," there seems to be little purpose for the "how."

Sub-theme 3: Most teachers do feel a sense of moral purpose. Despite the lack of a shared vision, clear school and individual goals, and collective commitments to achieve those goals, there is clear evidence that most teachers do feel a true sense of moral purpose and connection to their students. Throughout almost all the interviews there was universal evidence that teachers frequently felt a true sense of accomplishment when their students experienced "ah ha" moments. This passion for wanting to make a difference is exemplified by the following:

> I hope that I influence them [students] so that they can all go to college. I continually tell them how important it is because I think that they don't realize it; like I never had anybody tell me, you need to go, you have all these opportunities. (Elizabeth, personal communication, October 29, 2015)

Elizabeth was clearly emotional when talking about her students; it was evident that she feels a strong connection to them and a real sense of moral purpose for teaching. Elizabeth continued, "I want to be that one person who continually reminds them that they can do anything and become anything, and to believe in themselves."

Another example of how teachers can feel a true sense of meaning in working with students was shared by Pamela (personal communication, October 27, 2015). She discussed how it is important for teachers to look for the small successes in student learning. She insisted that progress can always be found–it is just a matter of looking for it. This is exemplified in the following testimony:

> There are things they [students] did get that they didn't get yesterday. Or, that they did get today that they didn't get before. A good example of that: I have been teaching division and I have a student where [sic] they are still at the point where, "okay, what is 8 minus 7, Oh let me check," and they have to look at their fingers to see how many that is. But then that same student was able to divide today–she was able to do it by herself. I was so happy I just wanted to dance. Just having those moments are why we are teachers. (Pamela, personal communication, October 27, 2015)

A similar example of this deep sense of moral purpose was exemplified when a teacher shared how she felt her teaching was influencing the lives of students:

> I feel like such a big part of our job is changing attitudes for students. So I think sometimes they [students] feel like they are no good at math, or they don't understand something, or they almost feel like they cannot do it. And, so for me, one of my favorite parts is listening to those moments where…even the other day I had one of those kids say I sort of like math now. Those are little tiny moments and may not be anything specific, but just when you see that attitude shifting, that is exciting for me, when you know they are happy, that they are learning and they are understanding. (Carol, personal communication, September 4, 2015)

Julia (personal communication, October 1, 2015) discussed how in the face of hardship and uncertainty she still feels excited and inspired by her students. She smiled and said,

> I love my job! When I see my students they make me forget about everything [all the challenges], but at like 7:00 in the morning it is just like I don't know, it's just very

hard to explain and it's just a huge challenge, and this is the year to either make or break you.

The evidence of teachers' feeling strong connections to students, of feeling joy when they see evidence of learning, and feeling as though their job has a strong sense of moral purpose surfaced throughout almost all interviews. In fact, the true sense of moral purpose that teachers felt for their work with students surfaced as the stabilizing force in a sea of change and uncertainty and appeared to be a consistently positive influence on school professional culture.

The first two sub-themes–schools do not have an articulated shared vision, and there is very little evidence of school and individual goals–have a negative influence on school professional culture. This stems directly from the research on the progress principle. When people make progress in their work, it drives the intrinsic motivation for work itself (Amabile & Kramer, 2011). However, it is difficult to see evidence of progress in one's work when there are no clear goals. Similarly, it is challenging to find evidence of forward movement for the whole school if school goals are not made public and owned by the staff. Without evidence of progress–even small wins–it is more difficult to celebrate. Since acknowledging and celebrating progress contributes significantly to engagement in one's work, school professional culture will be negatively affected without them.

Theme 5: New Learning, the Personal Continuous Improvement Process, and the Progress Principle

The Math and Science Academy Summer Institute devotes one full week–30 hours–to helping teachers deepen their content knowledge of mathematics and pedagogical content knowledge. In addition, teachers attend the Ir-Rational Numbers Institute between six and

eight times throughout the year for a whole day each time. This is a total of between eleven to thirteen days dedicated to the learning of mathematics (66 – 78 hours) per year. The instructors for the math week include the MSA staff and Dr. Rick Kitchen, a mathematics professor at the University of Denver (previously at UNM). The goal of the content week is to engage teachers in authentic learning experiences of mathematics in order to deepen their content knowledge and make them more flexible and confident math learners and in turn math teachers. Additionally, the goal is to model pedagogical content knowledge–the specific knowledge that it takes to teach the mathematics to someone else.

Although the stated goals of the content courses consist mainly of developing a deeper understanding of content and pedagogy for teaching mathematics, the data reveal a number of very positive unintended consequences that in turn have a positive influence on school professional culture. These materialize in the following sub-themes:

- Deeper conceptual learning leads to confidence, pleasure, and joy (authentic learning experiences);
- Experiencing Flow (a mental state where individuals lose track of time and are completely absorbed in the work); and
- New Ideas-implementation-feedback-reflect loop drives motivation and engagement.

Sub-theme 1: Deeper conceptual learning (on a path toward mastery) leads to confidence, pleasure, joy, motivation, and engagement. Although different scholars use different terms to describe capacity building: professional capital, personal mastery, profound knowledge, or discipline thought (Collins, 2001; Deming, 1994; Fullan, 2008; Pink, 2009; Senge, 2006), they all basically refer to the same thing, individual dedication to learning

resulting in deepened knowledge. Pursuit of mastery is, as Pink (2009) describes, “the desire to get better and better at something that matters” (p. 109).

The interview data show abundant evidence that teachers are enjoying the authentic learning of mathematics, science and best practices they experience as part of their job-embedded professional learning. In response to the question that asked teachers to tell me about an experience in the past or on-going that has had the most profound effect on their teaching, many of the participants responded that their experience in the MSA mathematics content weeks have been incredibly powerful. “Teachers reported that as a result of their participation in MSA, they have greater joy and confidence for teaching mathematics. A survey of all participants indicated that those teachers with more than a year in MSA reported greater confidence and joy” (Trujillo, 2015, p. 13). Pamela (personal interview, October 27, 2015) shared, “You need to make sure the students understand why they are doing what they are doing, instead of just teaching them step by step what to do. Who was responsible for that? It was MSA and the MSA instructors.” When asked whether she thought her conceptual understanding had grown through her participation in professional learning, Pamela responded, “Definitely! And, I have always thought that I was good in math, but definitely, I have grown” (personal interview, October 27, 2015).

Another participant, Jenny (personal interview, September 4, 2015) shared that “the work with MSA has been phenomenal in many ways. Number one, with the Ir-Rational Number Institute, it really helped me understand mathematics at a deeper level.” Catrina (personal interview, September 29, 2015) discussed how participating as a learner in MSA has helped her become more aware of ways her students might be thinking. She explained,

> Participating in MSA has also made me think more about how I am thinking, how my students are thinking, and just being able to look at all the different ways that teaching a concept can be reached and the different answers a student may give us, and being able to look at that answer to see how that student is thinking.

In discussing her new learning of mathematics content with Dr. Rick Kitchen, Julia (personal communication, October 1, 2015) described how the experience of being put into the position of a learner has made her more aware of how her students might feel. Julia reported:

> Working with him [Dr. Kitchen] and putting my mindset as what students I teach, to say, "okay, well maybe this is how they feel about math, maybe my way isn't the only way." But yeah, letting them be free and able to answer what they have to in a way that is appropriate, but also in a way that they can understand and explain. (personal communication, October 1, 2015)

Julia's account speaks to how feeling vulnerable as a learner can make us more aware of teaching and learning in general.

Another teacher described an experience with Dr. Kitchen that had a profound impact on her teaching. She reported, "I hadn't done fractions forever. So when we started, I was intimidated. But he [Dr. Kitchen] really was so good at modeling how to build confidence because he did it for us. I mean all of us [all MSA teachers] improved" (Sofia, personal communication, October 8, 2015). Yet another teacher explained, "I plan to have a joyful, wonderful year using the strategies and ideas I have learned this past year. The ideas and training I have gotten from the MSA, Math, and strategies both, have gotten me so motivated. Thank you so much" (Teacher, as cited in Trujillo, 2015, p. 13).

The following testament speaks directly to how confident one teacher felt after a couple of years participating in the mathematics job-embedded professional learning. He is very open about his growth as a learner and teacher. He shared his thoughts:

> I'm continuing to learn. I'm just at the beginning of doing what I'm doing as an elementary school teacher. I've got a lot of learning to do. I've got a long ways to go, and I think what I'm learning here is really helping me move forward. And, I think five years from now I'm going to be a better teacher than I am today. I'm not going to stagnate or plateau, or just kind of go "I'm good enough, I don't need to learn anything." (Michael, personal communication, October 19, 2015)

Michael shared his personal growth and confidence development in mathematics, even reporting a change in his self-identity:

> That is a big thing about MSA, it is that deeper understanding of math, and again I've taken that just from being a teacher to my everyday life, on how I look at math as a human being, on my own terms, on adult terms. I look at math a lot more differently than how I used to look at it. And, it may sound nerdy, but I look at math and my wife says, "yeah, you are kind of a math guy," and I never would of thought of myself as a math person, so yeah, I think I've grown from it [the continuous professional learning], not just professionally, but from a personal standpoint. So for me I think it's good, and I like it, I think it does build a stronger professional community. (Michael, personal communication, October 19, 2015)

Another teacher explained how her professional learning experience led to understanding the mathematics at a deeper level, the "why" in the mathematics as opposed to just the "how." This teacher explained, "Today Dr. Kitchen helped the group see how and

why the formula of a triangle works. Now we know why, not just how" (Teacher, as cited in Trujillo, 2015, p. 14).

Finally, according to a survey in the LANL MSA Evaluation Report, Trujillo (2015) explained that 58.1 percent of the participants surveyed said that the professional learning they experienced in MSA helped them a great deal to better understand and implement the Common Core State Standards (CCSS). Another 30.2 percent claimed that MSA has somewhat helped them to better understand and implement the CCSS. In total, 88.3 percent of participants surveyed in the summer of 2015 reported new learning.

Sub-theme 2: Lost in learning (flow). According to Csikszentmihalyi (1990, 1994) the feeling one has when completely engaged in something, where one loses track of time, is the optimal experience, or "flow." Flow happens when the skills of an individual are fully engaged: "if the challenge is too great one can return to the *flow* state by learning new skills" (p. 47). As teachers engage by themselves or with others to tackle difficult math problems, for example, and their skills are fully involved in overcoming the challenge of solving those tasks, they are likely to experience *flow*. In this state of *flow*, individuals are engaged in making progress toward their goals. The interview data revealed that several participants experienced a kind of *flow* during their professional learning where their skill level matched the challenge level. According to Trujillo (2015), "Teachers and principals alike appreciate what they are learning through the Ir-Rational Number Institute and all interviews emphasized that they feel simultaneously comfortable and challenged by Dr. Kitchen as instructor" (p. 6).

Although she didn't mention the word *flow*, there was clear evidence that Pamela experienced a state of flow while engaged in team learning with another colleague during one of the content sessions with Dr. Kitchen. She recounted:

> Well before, I know that I always liked to work alone. I don't know why, but I would always just like to get the problem, do it myself, and then I would share…"okay, I will show you what I did, I will explain it." But one experience that I had at MSA last year was…. I was starting to do it alone, because I always did that. I would just block everybody out. I was trying to do that and one person was engaging with me and talking through it [the math] with me and we just started to do the problem together. I said, "oh my God, we are doing this together!" We were bouncing ideas off of each other and afterwards I was like, "wow, that was huge!" That was one experience that I had at MSA where I wasn't working along or by myself. So I guess I can say that working with like- minded people–discussing an idea or concept–is when I feel most engaged. It was awesome–it was a cool experience! (Pamela, personal communication, October 27, 2015).

Sub-theme 3: New ideas-implement-feedback-reflect loop drives motivation and engagement. The interview data convincingly show that new ideas learned during the summer institute or the Ir-Rational Number Institute have the power to rejuvenate, motivate, and engage teachers. There is significant evidence that when teachers learn something new–something they perceive as potentially having a direct positive impact on their students' learning–they are intrinsically motivated to implement it. Additionally, many teachers discussed how when they saw clear evidence of progress in student learning, they experienced a sense of joy and satisfaction themselves. Although it may come as no surprise,

the data reveal that most teachers naturally engage in their personal continuous improvement process: new learning and ideas spark teachers' motivation to implement new strategies in the classroom, implementation leads to evidence of progress (or not) in the form of feedback, which then leads to self-reflection of one's own teaching practice. It is important to note, however, that teachers did not discuss this improvement loop as a systematic process; rather, everyone spoke about it in general terms. The improvement loop shown in Figure 15 results from piecing together data from individual interviews.

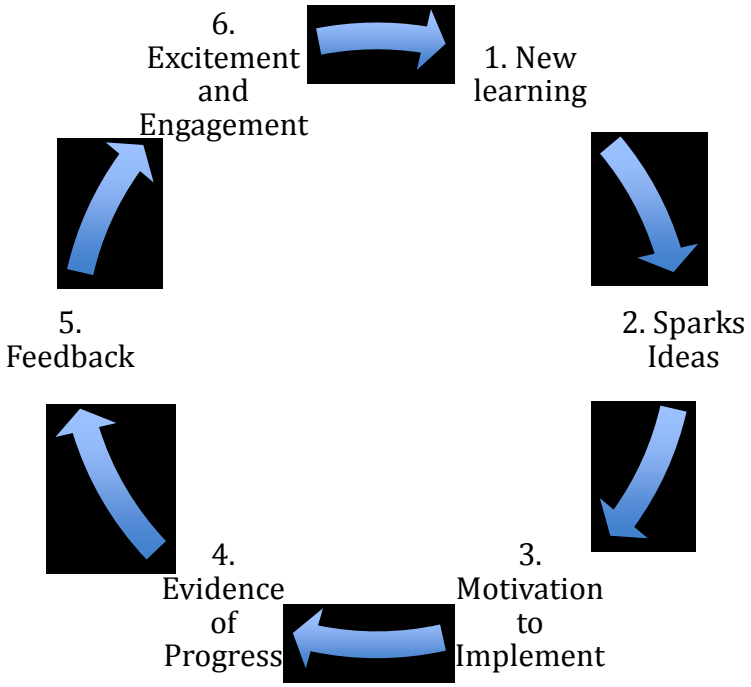


Figure 15. The personal continuous improvement loop is a graphic representation of how many teachers seem to engage with their new knowledge.

As one principal stated,

> I think that learning new things excites you. When the teacher is excited, the children are excited; it transfers to them so it's very important to generate excitement amongst

> the teachers. That way the school is full of excitement and new ideas–and things–move forward. (George, personal communication, August 28, 2015)

Another principal recalled his interaction with a teacher after she had just finished the MSA Summer Institute. The principal recalled the teacher's excitement:

> One teacher was completely jazzed. I remember coming here [school] after school one day, the school year had not started and I had to come here for something, and a teacher also had to come here, and I met the teacher in the classroom and she was saying, "this is it now, now I have all kinds of ideas, and I want to come to the classroom and do this and that." It [MSA Summer Institute] recharged her ideas and her thinking, and what she wanted to bring to the classroom, so she was in her classroom weeks before looking at it thinking…I can do this or that, so I think it helped to keep things alive and the institute planted seeds. (Ralston, personal communication, September 9, 2015)

When asked about how the MSA Summer Institute influences her work with students, one teacher explained,

> With students I like to do more of the exploration piece and having them explain, and with MSA you make us explain and it's like, well, we know the answer but you are making us really justify; we know how we got there, and I use that with my students. (Julia, personal communication, October 1, 2015)

Another example of how teachers implement their new learning in the classroom is Michael's description of an experience that had the most profound effect on his teaching. He described his new learning at one of the Ir-Rational Number Institutes:

> I think deciding on one example would be difficult, a lot of the math stuff, just the content areas, math models, things that I didn't know. I can get that and bring it back and start scaling it down until I get to the point where my students are at…. because maybe we are looking at place value or something, and we are over here talking about something unrelated to place value, but once you start decomposing it you find out that, "Oh place value does play a part in this," and then I can bring that back to my students as an example and go, "there is a reason for this," place value isn't just something you are learning in a vacuum. (Michael, personal communication, October 19, 2015)

Supporting the narrative of how many teachers engage in their own personal continuous improvement loop, Jenny (personal communication, September 4, 2015) described how she implemented new student engagement strategies after her own new learning during the MSA Summer Institute:

> I have learned a lot from cooperative learning, the different ways of engaging students. Student engagement is one of the biggest things, a lot of the ideas that I have gotten. That is the kind of teacher I am. I am very hyper, getting kids to be moving, and to make math or reading make sense to them, so just the strategies that I am learning in MSA, like the Kagan Strategies, I implement those regularly. (Jenny, personal communication, September 4, 2015)

Throughout the interview, Jenny talked about how her own new learning of content and pedagogy excited her. She further explained that her excitement translated to motivation to implement in the classroom.

As a school leader, Isabel (personal communication, September 8, 2015) shared, “part of the challenge that I’ve had to come across with staff is, getting them to reflect on their own, and they haven’t gotten to that point where they see the relevance of reflecting.” Later in the interview, Isabel shared that the focus on reflection throughout the MSA program is helpful. But she also admitted, that even with a reflection focus in MSA, some teachers still struggle to make it part of their practice.

As shown above, when teachers experience new learning for themselves, as they grow confident as learners, and as they experience the joy and pleasure of being a learner, they seem to be more excited, committed to implement their new learning, creative, productive, and ultimately more feel more engaged in their work. If all teachers at a school are engaged in the same professional learning, the evidence seems to conclude that there would be a direct positive and powerful influence on school professional culture.

Theme 6: Group Dynamics Are Important, Complex, and Must Be Monitored

The literature is very clear that establishing collective norms for how teams interact with one another is essential to successful collaboration and team learning (DuFour et. al, 2006; Lencioni, 2002). What is often overlooked, however, is how difficult it is for teams to establish those norms and then abide by them. Group dynamics play a critical role in determining whether or not the professional learning teachers regularly engage in is successful, especially when collaborative teams are the vehicle to improve teaching and learning. The interview data yielded mixed results on this front. As discussed earlier in the chapter, many teachers reported feeling supported, encouraged, respected, and energized by their colleagues as they engaged in their job-embedded collaborative professional learning. In contrast, however, other teachers did not always have a positive experience. Some teachers

reported receiving critical feedback that was not constructive, and they were left feeling frustrated and demoralized by the experience. The sub-themes that emerged from the data include:

- Norms and trust are essential;
- Professionalism is essential (respect for one another); and
- Deliberate actions must be taken to build cohesive groups.

Sub-theme 1: Norms and trust are essential. Before partnering with MSA, the BIE schools in this study did not routinely engage in job-embedded professional learning. Apart from the occasional meeting to discuss school data in general terms, schools did not come together to look at student work, engage in peer coaching cycles, or record and share video of one another's teaching practice. The MSA team introduced these structured collaborative learning designs to all the schools. As part of that introduction, MSA also spent some time working with teachers to ensure discussion and behavioral norms were in place before any meaningful collaboration began. Despite our efforts, however, the actual implementation was mixed. Some collaborative teams took the time to develop norms, while other teams did not, while still other teams developed them but did not regularly revisit or honor them.

In discussing her experience in her multi-school PLC where teachers (several of them new to the group) reviewed student work of a common formative assessment, Sofia (personal communication, October 8, 2015) explained that one group norm, essential to effective collaboration, is valuing each other's ideas. Sofia continued to explain her experience,

> It is like three or four people that are brand new, and they didn't even go to the summer institute, so it is frustrating to the point where it is a waste of time. Last year it felt safe to bring my work and not feel judged.

Sofia further described her experience with colleagues from the previous year, a group that had worked together to establish discussion norms:

> I knew the feedback was going to be respectful, valid, and appropriate. And if we had an argument about something it was always productive and on point. It wasn't an argument for the sake of an argument. So now I feel nervous about bringing my work. (Sofia, personal communication, October 8, 2015)

Sofia's description exemplifies the immense challenge of group dynamics. Her multi-school PLC lost three key individuals, as they either graduated from the program or left to take another job. After the change, Sofia found herself trying to engage in structured collaboration with new teachers who she did not know at all, and who had not been through the summer institute. The interview data show that a solid foundation for how the groups would work together had not been laid. And, since the group did not reestablish norms when the new members arrived, Sofia described the experience as awkward, uncomfortable, and even a waste of time.

Another teacher shared her experience in a collaborative group, one that is not an MSA partner. Pamela (personal communication, October 27, 2015) shared her negative experience in her PLC while presenting her idea. She explains it this way, "It is frustrating to me that I presented what I am doing to leadership and to my colleagues in a PLC and it was kind of frowned upon." Pamela continue to describe her thoughts on the key elements to successful team learning:

> In order to have a group of people that are willing to work with each other you have to have the trust and you have to have the openness. I think that is what we are lacking. We are all just isolated and it is just a shame because we should be able to be

> open about what is working and what is not without the threat of getting a bad score or getting a bad evaluation or whatever it is that people are worried about. (Pamela, personal communication, October 27, 2015)

When asked what the three key ingredients for effective collaboration were, one principal shared:

> They have to trust each other, that's key. I have never found a lack of trust but I think now there is, let me go back to that, it's trust and also respect for each other, that they respect their education and experience, and I think that was probably lacking here. (Vangie, personal communication, October 30, 2015)

In contrast to the negative experience she had at her new school, Pamela smiled when recounting her previous team learning experience during her grade level multi-school team PLCs. Pamela excitedly expressed, "it was awesome, the PLCs were awesome, and being able to help the other teachers too was great."

Supporting Pamela, another principal also described trust as vital to the group dynamic equation, specifically talking about the collaborative work that takes place at his school site. George (personal communication, August 28, 2015) explained, "Collaboration comes with trust, they [teachers] have to have a sense that they are not alone in the classroom. They need to have a sense that we are all in it together."

Another challenge with working in groups is that there needs to be an agreed upon mechanism to resolve conflict. At the 2015 MSA Summer Institute, Teresa was working with her grade level group when a conflict arose. Teresa (personal communication, October 15, 2015) recounts the experience, "So this summer, in my group, I had a big disagreement with some of the things that went on." She went on to explain the disagreement in detail but then

closed with, “So there are team dynamics that need to be addressed before you have productive meetings.”

Sub-theme 2: Professionalism (respect for one another). Professionalism and simple respect for one another as colleagues also emerged as a sub-theme. For example, when asked how she would describe her relationship with her fellow teachers, Jenny (personal communication, September 4, 2015) explained, “My relationships with my colleagues are at very deep levels. First of all, I highly respect my colleagues; they are such intelligent people.” While the interview data revealed similar accounts to Jenny’s, there were also teachers who reported a lack of respect for their colleagues. While discussing her experience, Pamela lamented that teachers were more concerned with themselves and “their kids” rather than taking a true collaborative approach. Pamela explained, “it is a competition to get your student to do well, it is not about the learning of the child–that is what I have seen so far” (personal communication, October 27, 2015).

In another case, Sofia discussed how she simply has lost respect for her colleagues. Sofia (personal communication, October 8, 2015) explained, “I feel like I have worked so hard to get better at my strategies that I teach, and just my teaching in general, and I don’t feel like it is that way with the other teachers.” Sofia does not see a strong commitment or sense of urgency from her colleagues to improve student learning. It appears from the conversation that most collaborative work at the school site is not productive, in part due to this lack of respect.

In another example, while discussing her relationships with colleagues, Teresa insisted that she gets along with everybody. However, after pushing her further by asking whether or not those relationships were healthy, she revealed, “No, because there are not any

professional conversations that we could have" (Teresa, personal communication, October 15, 2015). Later in the conversation, Teresa discussed how one of the relationships between her two colleagues was downright toxic. She explained it this way when talking about her colleague, "If you are not doing it her way then you are wrong. So she is not a team player at all." I then asked whether this person would be able to participate in a peer coaching cycle. She affirmatively replied, "No, she is really derogatory." It was clear that simple respect and professionalism were not always present in some teachers' collaborative experiences.

Sub-theme 3: Deliberate actions must be taken to build cohesive groups. The teacher and principal interview data both revealed that team dynamics can be very challenging, and when unhealthy, can make job-embedded professional learning and team learning unproductive and, in some cases, demoralizing. It seems from the interview data that common experiences over time are essential for helping to lay the foundation for cohesive teams. Across all interviews, teachers and principals alike discussed how their participation in the MSA program was essential to helping lay the foundations for strong relationships and cohesive groups. Both teachers and principals cited common experiences such as laughing together, celebrating together, and doing team building and class building activities together as playing an essential role in helping to build cohesive teams and a positive professional culture. Many teachers also shared that simply engaging in new and challenging learning together provided a unique connection–especially when they felt vulnerable during the process and then persevered. Additionally, teachers shared that engaging in rich discussion of practice, sharing and building knowledge together, and showing empathy for one another were all ingredients for helping to build cohesive and productive teams.

When asked how she felt about how the MSA summer institute influenced her work with her colleagues, Elizabeth (personal communication, October 29, 2015) emotionally explained, “I think it [MSA Summer Institute] actually builds, I want to say a school community. Like with the staff, I think it is about relationships that probably were not there before.” Elizabeth continued by emphasizing how her experience as a participant in the MSA summer institute really strengthened her relationships with colleagues. She reiterated, “I think just building the relationships and you just feel like you are part of a family rather than just being another teacher there.”

Pamela had a similar experience with the MSA summer institute. She feels strongly that the common experience of learning together and feeling vulnerable together helped bring her staff closer together. Pamela (personal communication, October 27, 2015) explained her experience in MSA:

> When we were all put into MSA, we were all kind of put back; we didn’t know what to do and we all felt pretty vulnerable. So we were able to get that out of the way, we were able to see that we are all humans, and that we all have different strengths, and we wouldn’t put each other down. If there was something that we were struggling with we would try and help each other instead of saying, Oh, I am better than them, Oh, I can look better than them.

Another teacher talked about how the general experience of collaboration and team learning over her four years of participation in MSA helped eliminate the gossip between staff members:

> We can squash this gossip around the school, I mean as far as the teaching goes and before MSA I can remember people talking about each other, saying so and so only

> plays with the kids, they never do anything. But then they see, "Oh, you know what, it's just a different approach to the lesson, they are still teaching, they are working. (Maria, personal communication, October 8, 2015)

Maria continued to explain how teachers' experience in MSA helped bring the staff together in a more cohesive group:

> I think I get more support from my colleagues now since we have been through MSA than I did before. It has helped create a more cohesive group, our communication is better, we don't take things as personal [sic], I mean it still happens, but not as much as it did. We have gained a common language which helps, and I guess because we spent so much time together and we have learned how each other thinks about things, how do you approach this…and I know who I can turn to if I need a different approach for something. I guess I'm more respectful of them and their differences. (personal communication, October 8, 2015)

Sofia discussed how the math content classes with Dr. Kitchen helped her school colleagues change behavior toward one other:

> Again, going back to Dr. Kitchen and seeing what he did with our confidence and building us up. It also built us up in front of their [my colleagues] eyes. Before [MSA] it was like, you don't know that…you're so stupid! It wasn't to your face; it was as soon as you turned around. It was the little gossipy…guess what, it doesn't happen anymore, and it really has to do with those math sessions. (Sofia, personal communication, October 8, 2015)

Sofia continued, “I think that is what changed, a level of respect. That is what brought up our school professional culture. It is what brought us together that way” (Sofia, personal communication, October 8, 2015).

Another principal also discussed the importance of trust. Richard (personal communication, October 19, 2015) discussed the importance of putting students together in purposeful groups because relationships are important. Richard insisted that it is the same with adults:

> Trust and creating a safe environment for collaboration to take place. The same goes for the adults. They feel safe, trusted, and by trust, they feel not just that the person is supportive, but they also feel that they believe in your capabilities.

Richard continued to describe the importance of ensuring the school culture supported collaborative work. He shared his experience:

> When you are talking leadership, I think you need to look at the number one component is culture, nothing happens without the quality culture, there are so many barriers, so with good leadership the first thing I think of is what direction are we going in? And, a lot of time we [school leaders] work on goals without setting the stage. We have to work on culture first. (Richard, personal communication, October 19, 2015)

Richard continued to share the importance of building a strong school culture. “I would really work on culture first and foremost, how we do things to be a great culture. In other words, you know your ice breakers, those are so critical, that is what I’m finding with my adult staff.” (Richard, personal communication, October 19, 2015)

Principal Isabelle (personal communication, September 9, 2015) shared the importance of building relationships before beginning the focused collaborative work:

> I think it has really been in my mind and when I reflect back on the years that I've been with MSA, that's where it starts, and getting them [teachers] to be open to the collaboration process, it is a process, you do start off kind of on the cold side and then you warm up to each other. Within that whole time, you realize that you've built relationships and I think that is key for a lot of staff, building those professional relationships on which they can have that professional dialogue about practice.

After synthesizing what the data say about what contributes to building a cohesive team, four concrete actions emerged: (1) engaging in productive struggle together; (2) being vulnerable with one another; (3) laughing, sharing common experiences, and celebrating successes; and (4) showing empathy for one another.

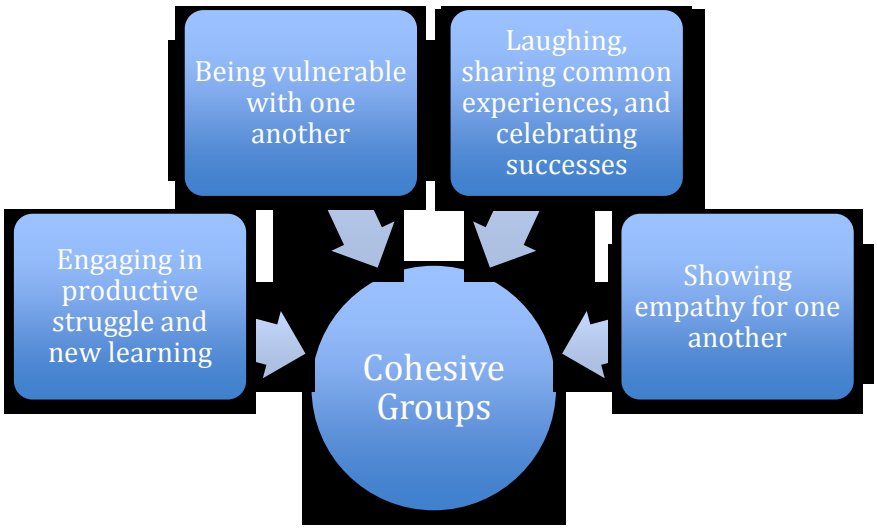


Figure 16. Key actions that contribute to cohesive teams.

In summary, positive group dynamics are essential to building a strong community of professional learners characterized by collaboration and team learning. Simply put, the data

show that establishing team norms for discussion and group interactions cannot be overlooked. As part of those norms, maintaining a level of professionalism and respect for colleagues is also vital. In addition to group norms and respect, deliberate actions for laying the foundation for collaborative work are also necessary. Job-embedded professional learning can have a positive influence on school professional culture, but school leaders must be aware that it is a challenging process that will require deliberate actions and close monitoring of the process.

Theme 7: The Merida Day School Success Story (An example of how job-embedded professional learning can positively influence school professional culture)

The Math and Science Academy started a partnership with the Merida Day School in the summer of 2012. During the first year the support consisted primarily of instructional coaching and curriculum training. At the start of the second year, the MSA staff member assigned to the school worked more closely with leadership to think about ways to maximize the transfer of the professional learning that was happening during the MSA Summer Institutes and the Ir-Rational Numbers Institutes. With support from the school staff, two professional learning designs were decided upon and implemented: PLCs to review student work, and peer coaching cycles. The intended outcome of both designs was to directly improve teaching and learning in the school. The Merida Day School was the first and only of the MSA/BIE partner schools to implement both professional learning designs with consistency and discipline.

The interview data from the MSA evaluation reports, Trujillo (2014, 2015) reveal that the job-embedded professional learning implemented in the form of PLCs and peer coaching cycles had a direct positive influence on school culture. However, consistent with many of

the themes and sub-themes previously discussed, several things had to be in place. Among these is a school leader willing to commit to monitor and support the process, time, structures, protocols, and a facilitator. The interview data that follow support this finding.

When Carol (personal communication, September 4, 2015) reflected on how her school was able to begin to implement these professional learning designs, she points to high expectations from leadership, time during the day to conduct the work, a structure, use of protocols, and a facilitator. Additionally, she insisted that an outside force was essential in helping her school start the process. Carol was adamant when she said that, "we also could not have done it on our own, so I think having you as a facilitator coming in to start PLCs was really important." When asked the question about what systems of support exist in her school to help improve teaching, Carol gave a very specific response:

> I think the PLCs are doing a really good job of continuing or maintaining, the PLCs I think that is one because we are constantly looking at student work so I think that is one area and the other one is peer observations. You are having someone come and look at you teach and then having the opportunity to even go into other classrooms. (Carol, personal communication, September, 2015)

Supporting Carol's experience, Jenny exclaimed, "One of the biggest things we have right now are our PLCs. And there are two different kinds, and we have also started are peer observations." She went on to discuss how those two professional learning designs provided a wonderful opportunity to share best practices, were a way to really look into student thinking, and are essential to designing interventions for students. Jenny further described how PLCs at her school are helping her understand student thinking at a deep level. She

explained, “So now we look at the student work, we really identify what the kids’ understanding of a certain concept is.”

In his answer to the question of whether teachers at his school know much about each other’s teaching, George shared the following:

> Yes, they do, I would say that we are getting a lot stronger. But through our PLCs, our teachers walk away knowing what other teachers are doing in their classroom. Specifically, it has to do with instruction, with how the children are doing, not necessarily how the teacher is doing but how the children are doing. (George, personal communication, August 28, 2015)

When asked to describe a time that she felt the most engaged in her teaching, Jenny confidently responded:

> The last PLC in math, that was exciting to see just the level of conversation the whole staff was having, even the teaching assistants were super excited to be there. We are so glad we are doing that and all together so that was a good day to leave work and feel like…Wow!” (Jenny, personal communication, September 4, 2015)

In talking about an upcoming science PLC, Carol said, “So today we have science PLCs, it is not often when you are thinking like Friday…okay, it is PLCs…there is positive energy, like in anticipation for what is going to happen today, I think that is really cool!” Additionally, when asked who or what has had the most profound impact on her teaching, Carol responded confidently with, “I think PLCs may be the most [profound].”

Merida Day School was the only school in the study where interview participants discussed intentional celebrations. All three of the teachers I interviewed, and the principal,

shared that once per month three staff members get recognized. Carol described the process this way,

> Even just like a staff meeting, just like verbally recognizing, for example [a teacher] does monthly birthday parties, recognizing the staff for whatever, it seems like so little or not very important but I think it is. Now we have to live up to those expectations and we as staff know that people are watching you so you have to do a good job, you have to be better than you were last year, you have to work harder. (Carol, personal communication, September, 2015)

The interview data showed that support at the Merida Day School came in a variety of forms. The school leader provided the time and the structure within the school day to engage in the professional learning of PLCs and peer coaching. Additionally, the school leader provided clear emotional support. For example, when asked whether or not she felt emotionally supported in her work, Carol (personal communication, September 4, 2015) responded, “I think my principal is doing an awesome job; he always makes us feel like we are doing awesome; every day you did awesome, so when you feel you did awesome, you think I am going to keep going.” Carol also described getting support from her peers:

> Also, the peer support, like we are always talking each other up so somebody is always saying, ‘oh yeah, you are doing awesome with this,’ or I saw this so you feel like you and the other teachers are doing a good job.

This ties directly to one of the aforementioned themes–positive descriptive feedback drives motivation.

Trujillo (2014) conducted a comparison study between Merida Day School and the other participants. When asked the question, “How much attention does your school give to

professional growth?" 78% of the Merida Day School Teachers responded "a great deal" as compared to 45% of the remaining participants from three other schools. The evaluation report further noted that these findings support the claim that Merida Day School is providing a supportive culture where teachers are able to practice their new learning from MSA.

When describing her experience at the 2014 MSA Summer Institute where school groups had time to work with each other to plan and strategize for the next school year, one teacher commented:

> I have felt tired after nearly four weeks of professional development, but I certainly felt energized this afternoon when we met as a school. It was a great feeling to see the focus and determination in each of our colleagues. We laugh a lot, so it seems like we're slacking, but over time we have aligned our collective focus for our school, this allows us to get right down to business. We understand what our mission and vision is and what it entails in its simplicity. That's why I feel so capable of accomplishing much this year. It's because I know I have the support of my team and they know I've got their back also. (Teacher reflection as cited in Trujillo, 2014, p. 35-36)

Data collected and reported on in the MSA evaluations over the last three years show similar results in terms of a job-embedded professional learning having a positive influence on the school professional culture.

The interview data from the three teachers, the principal, and data gathered for the MSA evaluation reports over the last three years convincingly show that the job-embedded professional learning implemented at the Merida Day School has had a definite positive influence on school professional culture.

Theme 8: Leadership is Essential

Leadership makes a difference (Bolman & Deal, 2013; Collins, 2001; DuFour & Marzano, 2011; Fullan, 2001; Kotter, 2012; Liker & Convis, 2012). According to Deming (1994), organizations do not spontaneously transform themselves; they only do so under effective leadership. As I discussed throughout the chapter, leadership is an essential component to every theme that emerged in this chapter. My purpose for providing a separate discussion about leadership is to highlight themes that emerged separately from direct involvement in job-embedded professional learning. I discuss the implications for leadership–based on themes that emerged in this chapter–extensively in chapter five. Several sub-themes emerged from the teacher and principal interview data that helped to answer the question of how leadership, in its own right, influences school professional culture. The sub-themes consisted of positive pressure and simultaneous support, and the following nourishment factors: respect, encouragement, emotional support, and affiliation.

Sub-theme 1: Positive pressure and simultaneous support. Across several interviews teachers and principals discussed the importance of positive pressure and simultaneous support. From the teacher perspective, they acknowledged that when the principal conducted frequent walk-throughs and observations, they felt a subtle pressure to always perform at their best. From a similar perspective, several principals also expressed the importance of being in the classroom. The data show that frequent visits to the classroom help to send a clear message to teachers that: (1) teachers' work is important, (2) principals have high expectations for teaching, and (3) principals are there for support.

A good example of this was shared from the teacher perspective. Sofia (personal communication, October 8, 2015) explained how the best principals were the ones who spent

time in classrooms either formally observing teachers or doing walk-throughs. She explained her feelings this way:

> You know, I think it is about expectations; it boils down to expectations. Thinking in terms of leadership and in terms of principals that I have had...thinking of the two best principals that I had, one of the best things was they checked in on you. And you knew they were going to check in on you, and so it kept you on your toes. When you know that someone might come in through that door, you are like "Oh!" That is a big thing; we are human, right? We want to please, I mean that is the person who is going to evaluate us; I mean if that happens all the time then we are going to be on our toes. You are not going to sit at your desk with your feet up reading the newspaper. (Sofia, personal communication, October 8, 2015)

Further along in the interview, Sofia specifically discussed how she felt her colleagues were not putting forth the effort they should. Sofia explained that more frequent principal walk-throughs and observations would put positive pressure on some teachers to improve.

Across all principal interviews the importance of providing positive pressure was discussed. George (personal communication, August 28, 2015) claimed, "the way you make anything important is by being there; if you are not there then it won't be important." It is clear from the interview that George puts constant positive pressure on teachers by being present in their classrooms all the time.

When asked how she helps teachers who are not performing at the level they should be, one principal responded, "I think that observation is key as a principal; you have to be doing walkthroughs, observing. Observation is key and you need to be walking through those

classrooms as much as possible" (Vangie, personal communication, October 30, 2015). In explaining how she does support and provides pressure, Vangie explained it his way:

> Usually, what I do is a couple of observations. I bring them in and I try to do something like, I don't call it a growth plan, it is more like a professional development plan, like where do you think you need to grow, what do you think you need to do, how can I support you?

George further discussed how he puts positive pressure on some teachers who may not be performing up to the level they should be:

> When a teacher is having trouble, typically what I do is, I will try and go into their classroom and gather specific observations, and then when I meet with the teacher….and usually what I will do is I will script. When you script, you try and catch what is going on in the classroom without making any judgments. Of course it is an observation. And what I do is I will go in there with them and then go over the observation and as I go through the observation the teacher themselves will see, I will try and catch exactly what they are doing. And the teachers themselves will see that, "oh I wasn't aware that I wasn't doing that, I wasn't prepared." That's the first step, my first step is trying to get them to see what they need help with. If they don't see where they need help they will never improve. (George, personal communication, August 28, 2015)

When asked about how his management philosophy guides his actions for improving teaching and learning, another principal shared:

> I'm not a heavy-handed leader, I'm actually more of a nudger and a supporter. I try to bring out people's own inner gifts and increase those things. But sometimes it takes

> time. I'm not necessarily a demander unless it's absolutely necessary, then I'll step in that role of authority, but besides that, I would prefer to move people along and help them find their strengths and develop those strengths themselves, and then believe in them so they believe in themselves. At the end of the day, it is actually less on my shoulders because I know they are doing what they need to do and reaching their potential, and that is important. (Ralston, personal communication, September 8, 2015)

Additionally, Ralston explained how he felt the formal structure of MSA provides the high expectations and positive pressure for teachers to continue to grow.

> We have MSA, which gives teachers a formalized approach to professional development, which I can see working in the schools. It is really important for several reasons: one, is that, again, teachers get support; two, is that they know they are not just going to be able to be in a classroom for the next 10 years and just cruise along and do whatever it is they've been doing. (Ralston, personal communication, September 8, 2015)

Another principal described how he put subtle pressure on teachers through conversations about their teaching using the rubric for effective teaching practice and the GANAS Framework. Based on where teachers were at on the rubric, Richard (personal, communication, October 19, 2015) would ask teachers what support they needed to reach the next performance level, thus making it clear that he expected them to improve. Additionally, another principal, Sherry (personal communication, October 15, 2015) explained how she would identify an area where a teacher needed to improve based on an observation, and then

make an effort to provide a resource to that teacher, an article for example, that could help her improve. Sherry explained her process:

> I research things, and I give them like a one or two page reading type of thing, because sometimes just talking to them is not going to do it. And, I offer and say, "Hey I researched this article and I know it's going to help you; can you read it over the weekend and then come back and report to me on Monday; how are you going to restructure so the management can happen, so the learning can happen? (Sherry, personal communication, October 15, 2015)

These examples highlight the importance of expectations in a school environment. Although few teachers or principals made the direct connection between high expectations and positive pressure to school professional culture, it was implicit. Despite the fact that principals and teachers acknowledged the importance of positive pressure, most principals admitted that they did not do it enough, citing a lack of time and being consumed with other things, as the reason.

Sub-theme 2: Nourishment factors are essential (Respect, encouragement, emotional support, and affiliation). The leadership literature discusses the importance of actions and events that support the individual (Amabile & Kramer, 2011; Fullan, 2008; Hargreaves et al., 2014; Kouzes & Posner, 2012). According to Amabile and Kramer, (2011) these are nourishment factors; they consist of respect, encouragement, emotional support, and affiliation. Although the process of engaging with others in job-embedded professional learning clearly contributes to these nourishment factors, they are also required from leaders. The interview data show that although principals are aware of the importance of these as contributors to healthy work environment, they often do not make time for them.

For example, Sherry (personal communication, October 15, 2015) discussed the importance of how principals address teachers who may not be performing up to level of expectation expected. She explained, “I think a lot of it has to do just with language, you cannot cut them down in front of anybody, if you have to address something don’t address the entire staff for the one who is not doing it or the one who is slacking.” Another principal, George, (personal communication, August 28, 2015) explained how he emphasizes the nourishment factors with teachers at his school, “I acknowledge their presence number one. Number two, I respect them, I show them respect. I am honest with them. I never ever accuse them of anything.” George also insisted that trust is essential. He explained, “Like I say, they have to trust you and they have to know that you have their best interest. You would laugh, but I tell my staff that my job is to make them all successful and if they are not successful then I am not succeeding.”

Another principal discusses the importance of listening to teachers as they voice concerns:

> It is really difficult with adults, to get them to move forward, break habits and I kind of had luck with three or four different buildings that I have been in. I have had luck with the fact that by listening first, and making sure that they know that you heard everything, and that you can repeat and you really have a clear understanding of where they are coming from, even finding some agreements that you didn’t even know about before, that goes a long way. (Richard, personal communication, October 19, 2015)

When asked how he supported teachers at his school, another principal explained, “it is recognizing who they are, their strengths, recognizing that not everything they say is a

complaint. They want to be heard and listened to" (Kurt, personal communication, October 29, 2016). When asked what actions she took to help make teachers feel engage or boost morale, another principal responded, "I think one of the biggest things…and this is all throughout my whole career, to boost morale is to provide them time, time to plan" (Vangie, personal communication, October 2016).

Principal Isabelle shared how she emotionally supports her teachers:

> I think a big thing is, to be greeted, like "Hi, how are you?" Always that greeting, just checking in, like at lunch, checking in with them and asking how they are, and always just kind of actively engaging with them and not really asking anything specific but just kind of checking in with them to see how they are, or how things are going through the day. I think that when teachers feel that you ask that, you care about them and you care what goes on in the classroom. (Isabelle, personal communication, September 9, 2015)

When asked about how she supported teachers in their work, Sherry (personal communication, October 15, 2015) discussed the importance of providing positive feedback and encouragement to teachers as well as taking time out to celebrate successes. However, she also admitted that she does not do enough of it. She explained in the interview:

> I'm not sure that I even really do a whole lot of praising myself, I mean I tell them, "You guys are doing a good job," but I don't think I do enough praising, I don't think I have enough celebrations, I don't think I'm there yet. There is a lot of work that has to happen before you can even say that it is time for a celebration. (Sherry, personal communication, October 15, 2015)

George (personal communication, August 28, 2015) discussed how making eye contact with teachers, by popping in and saying good morning, and acknowledging their work, goes a long way. Additionally, George explained that he tries to uplift the system by taking deliberate actions to focus on what people do well. In order to change teachers' practice, he asked teachers to identify opportunities for improvement. With choice and voice George explained, they are more likely to implement the change themselves.

Summary

Taken together, all of the sub-themes paint a promising but cautionary picture for how job-embedded professional learning influences school professional culture. The data show that committed teachers working together in meaningful structured teams with clear goals have the potential to learn tremendous amounts and feel highly engaged during the process. Additionally, the data show that teachers often feel they are making progress in their work through the purposeful collaboration, a significant driver of a positive inner work life and school professional culture. Nonetheless, there is a cautionary tale. If the right conditions are not in place, collaboration has the potential to cause frustration and even demoralize teachers. Furthermore, leadership contributes to the success of effective job-embedded professional learning and a healthy school culture at every level. In the next chapter, I discuss how the themes that emerged from this study inform leadership actions necessary to create the environments necessary for job-embedded professional learning to thrive.

Chapter Five

Discussion, Recommendations, and Conclusion

Discussion

The purpose of this research study was to develop a richer understanding of the dynamic that occurs when teachers engage in job-embedded professional learning characterized by a combination of formal professional development and structured collaboration, and how those experiences influence school professional culture. I also wanted to understand how leadership actions in the context of the professional learning environment influenced school professional culture. As themes emerged from the data, I began to develop a deeper insight for what school leaders and administrators need to do to create the conditions for job-embedded professional learning and collaboration that foster a healthy school professional culture. The research questions were, "how do job-embedded professional learning and leadership influence school professional culture? And, what are the implications for leadership?"

Creswell (2007) claims that the "basic tenet of an advocacy/participatory world view is that research should contain an action agenda for reform that changes the lives of participants, the institution in which they live and work, or even the researchers' lives" (p. 21). My motivation for conducting this study was derived in part from an acute awareness that the system in which teachers and principals work is currently not functioning up to its potential. As I stated in the first chapter, teacher and principal job satisfaction is at a twenty-five-year low with over fifty percent of teachers reporting they feel under severe stress for much of their workweek (Metropolitan Life Insurance Company, 2013) and seventy percent of all teachers reporting either not feeling engaged in their work or feeling actively

disengaged (Gallup, 2013). When low teacher and principal morale are coupled with low student achievement and engagement, rigorous new standards that require more teacher preparation and professional development, and an ever-increasing teacher and principal accountability system, the education challenges in the U.S. can seem insurmountable. I argue that we need to rethink how we conduct education and especially teacher professional development.

The data from this study clearly show that job-embedded professional learning characterized by structured collaboration–and the continuous improvement process has incredible potential to increase teacher motivation and engagement, has a positive influence on school professional culture, and is an effective mechanism to improve teaching and learning. This chapter is mostly dedicated to articulating how the results of this study coupled with the literature can inform school leaders to better create the conditions to maximize teacher engagement and effectiveness through an environment where professional learning and collaboration flourish. The narrative is organized around the conceptual leadership model for maximizing teacher engagement and effectiveness (Figure 17). I introduced the model in Chapter 2 as an attempt to make sense of the best practices espoused in the literature. I revised the model displayed in Figure 17 to include new insights from the study data. Each part of the leadership model is labeled with a number. Some of these refer to specific actions by school leaders while others describe change as a result of action.

In the following sections, I discuss each numbered part of the model by providing concrete actions that school leaders can take to begin the process of transforming their school. In the last part of the chapter, I discuss recommendations for further research.

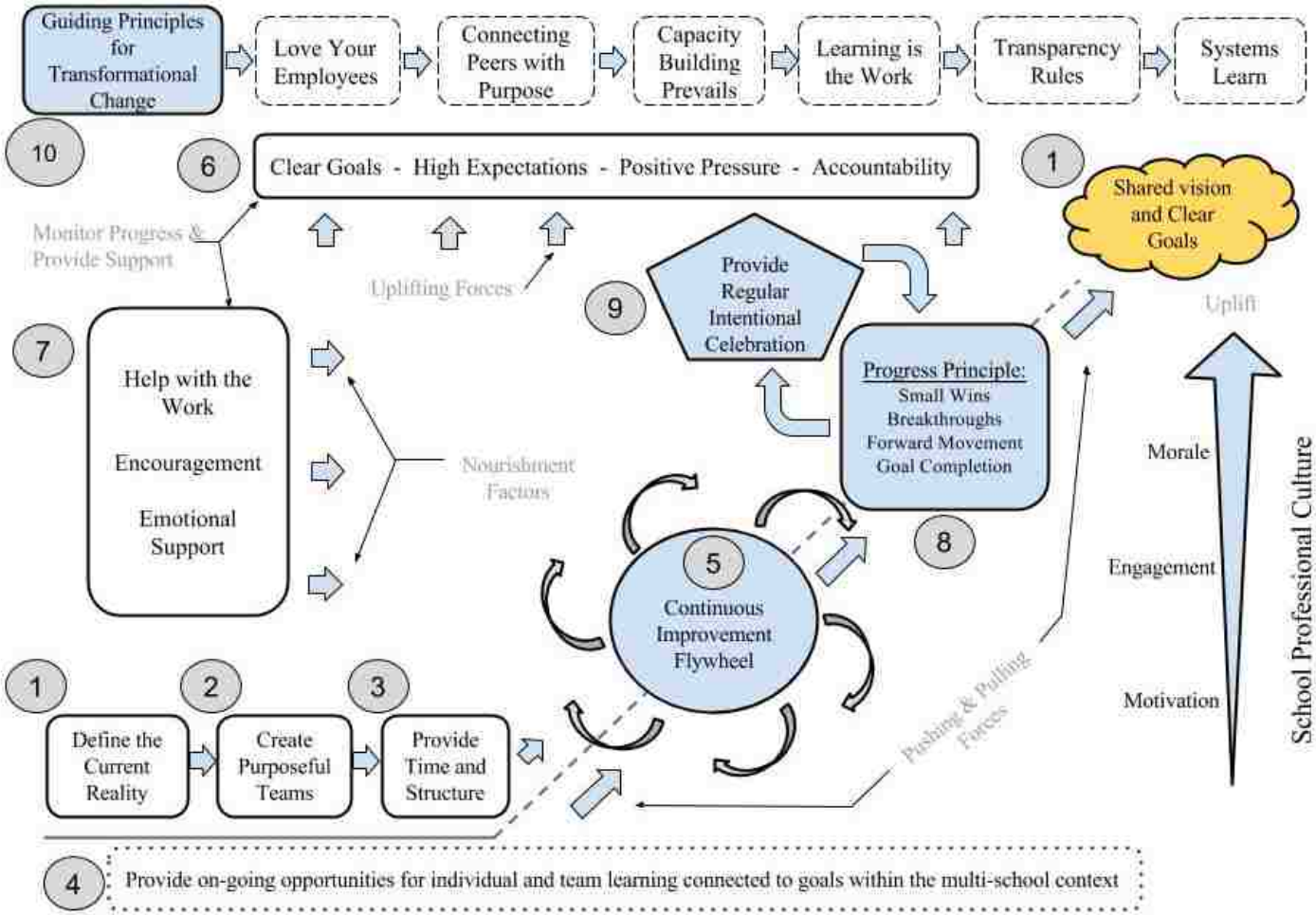


Figure 17. Revised leadership model for maximizing teacher engagement and effectiveness.

Leadership and School Culture

Before I delve into discussing each component of the leadership model, I believe it is worth taking a moment to revisit the definitions of school professional culture and leadership as I described them in Chapter One. According to Barth (2001), "School professional culture is the complex pattern of norms, attitudes, beliefs, values, ceremonies, traditions, and myths that are deeply engrained in the core of the organization" (p. 198). Leadership is defined in this study as the ability of an individual to employ practices that "mobilize others to want to make extraordinary things happen in organizations. It is the ability to transform values into actions, visions into realities, obstacles into innovations, separateness into solidarity, and risks into rewards" (Kouzes & Posner, 2012, p. 2).

As I articulated in the problem statement in Chapter One, there is overwhelming evidence from the literature on successful organizations and school systems that restructuring schools to make time for job-embedded professional learning with a relentless focus on continuous improvement will not only improve student learning and achievement but also improve teacher morale (Barber & Mourshed, 2007; Darling-Hammond, 2013; DuFour & Fullan, 2013; DuFour & Mattos, 2013; Fullan, 2011, 2014; Hargreaves & Shirley, 2012; Tucker, 2011). The results of this study help to explain why we do not see more evidence of job-embedded professional learning and collaboration as the foundation of schools–it is extremely hard and complex and most school leaders simply do not know what it looks like, let alone how to lead it. Furthermore, it requires real structural and cultural changes, challenges that many leaders simply cannot take on because they are consumed with other things. Barth (2001) explains, "Probably the most important and the most difficult job of the school-based reformer is to change the prevailing culture of a school" (p. 197). Fullan (2014)

builds on the idea when discussing how to improve schools. He contends that, “the primary issue is to change the culture of the school and the district so that learning is the work–that is, so that people are getting better at what they do because learning to be more effective is built into the values and routines of the organization” (p. 32).

This study was consistent with the literature; I found that job-embedded professional learning and collaboration can be a vehicle to increase excitement, engagement, productivity, commitment and collegiality. However, this study also revealed that the process of cultural transformation is very difficult. Evidence from the study showed only one school-wide success story: The Merida Day School. Particularly challenging are the group dynamics essential to creating and maintaining meaningful and effective collaborative teams. Another challenge of interest revealed by the study includes the difficulty of mobilizing individuals around a shared vision, identifying clear goals, and making collective commitments. However, these challenges are surmountable if leaders take a systematic approach. I will explain one systematic approach in detail in the Leadership Model for Maximizing Teacher Engagement and Effectiveness shown in Figure 17.

One of the most interesting findings from this study was the power in teachers collaborating with each other across the multi-school partnership. As I discussed in Chapter Four, individuals have an innate desire to be connected to each other and to a larger purpose (Ryan & Deci, 2000). When teachers came together from across the multi-school partnership to engage in collaborative work, there was clear evidence of excitement, an infusion of new ideas, and engagement–it was a powerful experience. Additionally, teachers reported feeling deep connections and affiliation with one other; they reported feeling as if they were a part of something larger, almost connected to a deep sense of moral purpose that extended well

beyond their own classroom and their school. Lastly, as a result of knowing what others were doing in their classrooms, teachers reported feeling affirmation and validation. According to Hargreaves (2015), “One of the ways teachers improve is by learning from other teachers. Schools improve when they learn from other schools. Isolation is the enemy of all improvement” (in the foreword in Sahlberg, 2015, p. xix). Furthermore, Hattie (2015) asserts that if schools make a concerted effort to reduce variation between classrooms by simply sharing best practices with one another, the education system would improve dramatically. This advice, coupled with the data from this research study, points directly to the need for school and district leaders to harness the power and potential for multi-school partnerships. They should seek to create systems where teachers have regular opportunities to engage in authentic learning together around content and pedagogy, review student work together, watch each other teach, and plan together. This multi-school collaboration is assumed in the model presented in Figure 17. I will now discuss the components of the Leadership Model for Maximizing Teacher Engagement and Effectiveness shown in Figure 17.

1. Shared Vision, Clear Goals, and Collective Commitments

Concrete action number 1 on the leadership model for maximizing teacher engagement and effectiveness is to create a shared vision and clear goals, and define collective commitments. The data support what the organizational and leadership literature make very clear–the first step in transforming any organization is to collectively engage everyone in the process of developing a shared vision, creating clear goals, and making collective commitments–doing so provides direction and energy to mobilize individuals toward the same purpose (Bolman & Deal, 2013; Collins, 2001; DuFour & Marzano, 2011; Fullan, 2001, 2008, 2010; Hargreaves et al., 2014; Kanold, 2011; Kotter, 2012; Kouzes &

Posner, 2012; Senge, 2006). What does the ideal student, school, or district look like? “Until educators can describe the ideal school they are trying to create, it is impossible to develop policies, procedures, or programs that will help make that ideal a reality” (DuFour et al., 2008, p. 120). There was very little evidence in the interview data or evaluation reports that teachers and school leaders had done the work of collectively defining a shared vision or establishing clear goals–without which it is almost impossible to commit to improving.

The shared vision is the force that pulls the current reality. Without the shared vision, there are no forces to catalyze or coordinate action (Kotter, 2012). A shared vision is greater than an idea; it is a force that guides and drives people to accomplish amazing things. It is the spark that ignites action and carries momentum toward the pursuit of a larger purpose. A shared vision binds people together and provides a powerful connection between individuals (Senge, 2006).

Since the shared vision describes what the future looks like, schools must also define their own currently reality. When this happens, when the gap between one’s current reality and shared vision is defined, it then becomes possible to create shared and clear goals for closing the gap. With clear goals established, individuals can then commit to specific actions for achieving those goals. This gap between the current reality and the shared vision is the gap that represents the creative tension (Senge, 2006). Once individuals mobilize their energies toward the shared vision, the momentum begins to build–forces pushing away from the currently reality and pulling toward the shared vision grow stronger. Figure 18 shows the energies of individual members working at cross-purposes to one another without a shared vision.

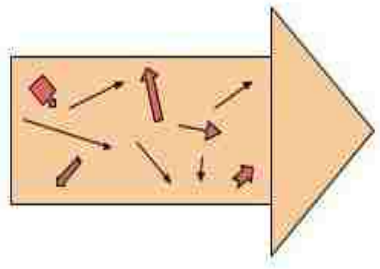


Figure 18. A representation of the ways in which the energies of individual member work at cross-purposes. Adapted from Senge (2006).

In contrast, Figure 19 shows how when individuals are working and learning together in pursuit of a shared vision, their energies begin to harmonize.

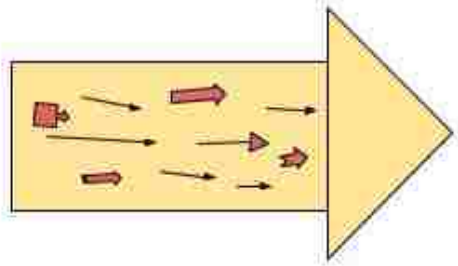


Figure 19. A representation of how the energies of individual members work toward a shared vision through team learning. Adapted from Senge (2006).

Only one school in this study, the Merida Day School, truly had aligned energies. Leadership must create the relationships and design the strategies of accountability and celebration necessary for the vision to come alive (Kanold, 2011). If the vision insists that teachers learn and improve their practice every day, then building a continuous improvement model into the work structure, supporting its operation, and holding teachers accountable to incorporate it into their professional practice is imperative.

Clear goals more easily facilitate forward movement and progress. When people make progress in their work, it drives the intrinsic motivation for work itself. Motivation for the work itself leads to a positive inner work life and in turn individuals are more creative,

productive, committed, and collegial (Amabile & Kramer, 2011). Without clear goals, individuals and schools cannot easily measure progress; without the ability to measure progress, schools will not be able to intentionally celebrate forward movement and successes. In Chapter Four, I discussed how the data revealed very little evidence of clear individual and school goals. School leaders must make collective goal setting a priority if they wish to create the optimal conditions for motivation.

Taken together, shared vision, clear goals, and collective commitments create a force that pulls the organization in the direction it wishes to go. Leaders must capitalize on these forces if they wish to mobilize individuals effectively.

Provides a roadmap. Across all interviews, teachers reported that the GANAS Effective Instruction Framework helped to provide clear direction for an effective lesson–in essence, it acted as a roadmap for effective instruction and provided a framework that helped teachers set clear goals. Additionally, a framework can be used as a tool during lesson planning and as a tool for peer observations and coaching cycles. An adopted framework helps facilitate reflection, rich discussion, and can be used as a mechanism for feedback. Lastly, it provides a tool for the development of shared professional language. School leaders should recognize the power of frameworks and use them to their advantage as they guide individuals and teams toward the shared vision.

2. Create Purposeful Teams

Concrete action number 2 is to create purposeful teams in which meaningful team learning can take place. Bringing people together and asking them to collaborate with one another does not ensure they will accomplish anything other than a congenial discussion (DuFour et al., 2008). When collaborative teams at the schools in this study had clear goals,

whether it was looking at student work guided by the four critical questions, or engaging in peer coaching cycles guided by the GANAS Effective Instruction Framework, teachers reported meaningful collaborative experiences. Although the successful schools literature shows that engaging with others in collaborative teams is the most promising strategy to improve teaching and learning, what they often gloss over, or skip entirely is the complexity of group dynamics and the challenge of building and maintaining cohesive teams. Positive group dynamics are essential to building a strong community of professional learners characterized by collaboration and team learning. Simply put, the data show that establishing team norms for discussion and group interactions cannot be overlooked. As part of those norms, maintaining a level of professionalism and respect for colleagues is also vital. The findings from this study provide guidance to school leaders for ways to lay the groundwork for establishing cohesive teams (see Figure 20). The essential actions include: (1) ensure teams have shared goals and collective commitments, (2) provide opportunity for team members to engage in productive struggle; (3) provide opportunities for team members to be vulnerable with one another; and (4) provide opportunities for team members to laugh together, share common experiences, and celebrate successes with one another.

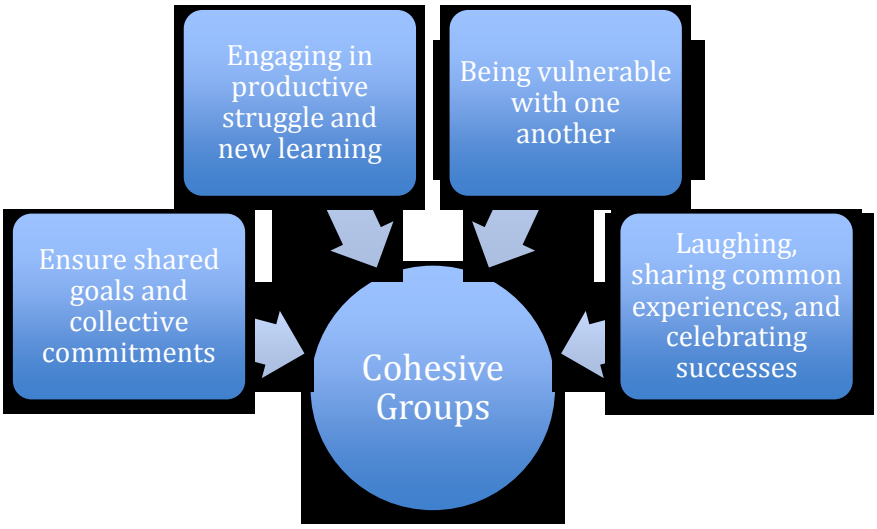


Figure 20. Key actions leaders can take to ensure they build purposeful and cohesive teams (model developed from the interview data).

Job-embedded professional learning can have a positive influence on school professional culture, but school leaders must be aware that creating purposeful teams is a challenging process that will require deliberate actions and close monitoring.

3. Provide Time and Structure for Meaningful Collaboration

Concrete action number 3 is to provide time and structure for meaningful collaboration to take place (see Figure 21). Restructuring the work week to allow sufficient time for professional learning and the continuous improvement process to occur is essential for initiating successful change (Darling-Hammond, 2013; DuFour et al., 2008; DuFour & Marzano, 2011; Learning Forward, 2011; Wei et al., 2009). The time must be sufficient in length, typically one to one and a half hours. Additionally, it must occur on a regular basis; study data showed that once per week was ideal. Furthermore, team learning and collaboration must be structured: guided by discussion protocols, critical questions, or frameworks.

The study data was very consistent with the findings from the literature: without sufficient time built into their workday teachers cannot realistically be expected to improve their practice. These time demands make implementation of structured collaboration and the continuous improvement model a monumental challenge. However, there are ways for leaders to be successful: leaders need to be creative when developing schedules to ensure teachers have time during the day dedicated to collaboration.

In addition to time, the study showed convincingly that collaborative groups depend heavily on structures and protocols, indicating that if members did not follow a protocol for discussion, it generally was not meaningful. According to Barth (2001) "the 'first thing,' the most important feature of the job description for each of us educators, is to discover and provide the conditions under which people's learning curves go off the chart" (p. 200). There was clear evidence that under the proper conditions most teachers reported new learning, excitement, and engagement during their collaborative work. The second essential concrete action that school leaders need to take for teachers' learning to "go off the charts" is to build a mechanism into the school work day that both supports them and holds them accountable for getting better.

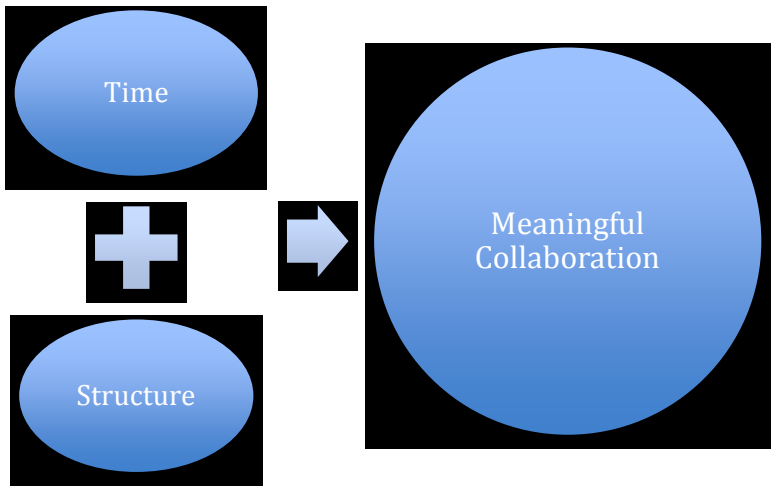


Figure 21. Time and structure are essential to meaningful collaboration.

4. Provide On-going Professional Development

Concrete action number 4 insists that leaders provide on-going opportunity for individual and team learning connected to goals within a multi-school context. When the teachers at the schools in this study engaged in authentic learning experiences, they experienced pleasure and joy and became more confident in their understanding of mathematics. Senge (2006) and Pink (2009) refer to the pursuit of new learning as personal mastery. Pink (2009) describes this mastery as "the desire to get better and better at something that matters" (p. 109). Personal mastery refers to dedicating oneself to something in a disciplined way that results in consistent personal growth and learning. Personal mastery requires that individuals continuously strive for competence, pursue new skills, and seek spiritual growth. It also assumes that people view their work and life together as a creative work of art (Senge, 2006). Although this concept of personal mastery is discussed extensively in the organizational and psychology literature, it seems to have been mostly ignored in the school improvement literature, particularly among scholars who espouse that collaboration is the answer to our educational woes. I contend that all professionals need to

continually pursue their own authentic learning. Figure 22 shows the personal mastery and motivation cycle as I have synthesized it based on the results of my study and the literature. It draws from the work of Senge (2006), Pink (2009), Amabile and Kramer (2011), Csikszentmihalyi (1990) and Ryan and Deci (2000). It is meant to convey that there is inherent joy and pleasure in the pursuit of new learning on a path toward mastery. In turn, new learning breeds confidence, which then leads to progress and then more motivation to continue the pursuit of mastery.

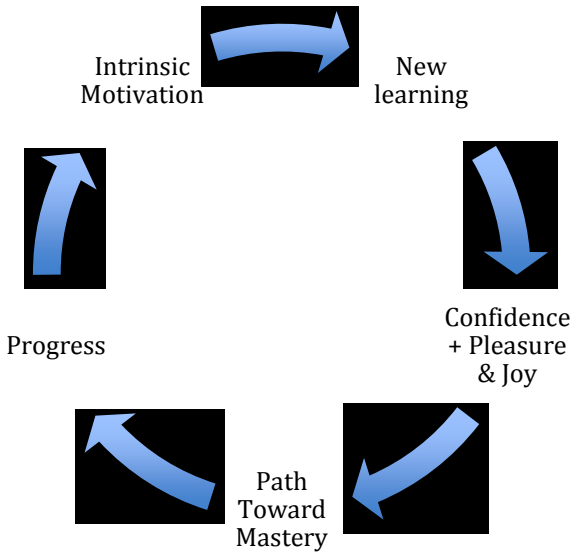


Figure 22. The personal mastery and motivation cycle is a synthesis of the organizational and psychology literature combined with data from this study.

The teachers in this study found tremendous value in engaging in formal professional development, totaling 156 hours per year; this is in addition to their on-going work in collaborative groups reviewing student work together. This formal professional development proved to be a catalyst for developing confidence, new learning and new ideas. In turn, teachers' new-found confidence and learning boosted their motivation, engagement, work fulfillment, self-esteem, and happiness. When individuals learn new things, they experience

an inherent pleasure in that learning; people find themselves intrinsically motivated to continue the process. Figure 23 shows how most teachers naturally engage in their personal continuous improvement process: new learning and ideas spark teachers' motivation to implement new strategies in the classroom, implementation leads to evidence of progress (or not) in the form of feedback, which then leads to reflection of one's own teaching practice.

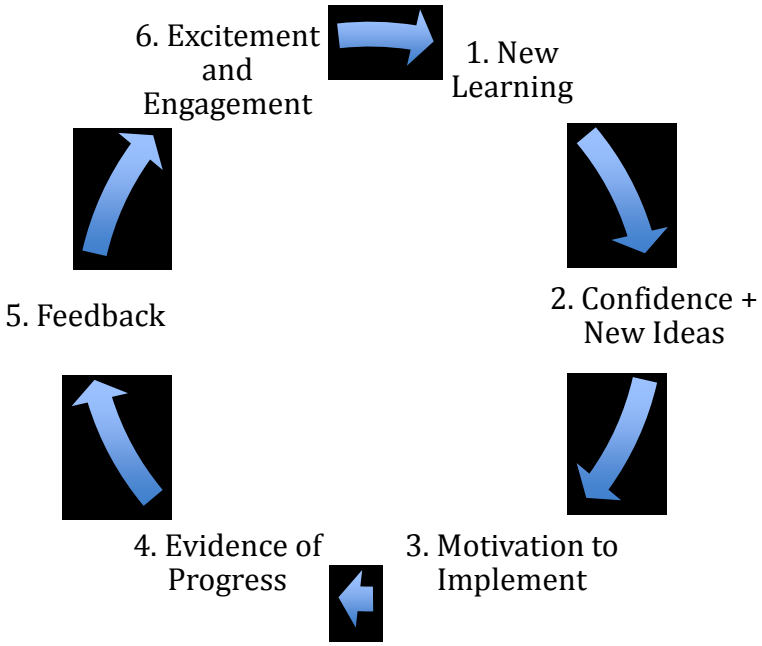


Figure 23. The personal continuous improvement loop is a graph representation of how many teachers seem to engage with their new knowledge.

In summary, teachers' engagement in authentic learning experiences over time has tremendously positive benefits–benefits that may not be realized if professional learning is limited to learning designs with collaborative groups only. The system needs to be infused with new content and the latest research-based practices. On-going formal professional development connected to goals in a multi-school context is a necessary infusion. School leaders need to consider this when beginning the process of creating the conditions for a healthy school professional culture where job-embedded professional learning is the focus.

5. The Continuous Improvement Flywheel: The Primary Driver of the Progress Principle

Concrete action number 5 is for school leaders to understand and utilize the continuous improvement flywheel to engage purposeful teams to accomplish the clear goals in their pursuit of the shared vision. Teachers will not improve their professional practice without a mechanism built into the workday that both supports them and holds them accountable for getting better. I found substantial evidence that structured collaboration yielded positive outcomes. The outcomes that emerged most frequently are shown in Figure 24 and include: (1) new learning, new ideas, and rich dialogue; (2) excitement and engagement; (3) peer accountability to follow through and implement, and positive competition; (4) affiliation and connection to others seeking the same shared purpose; and (5) creativity.

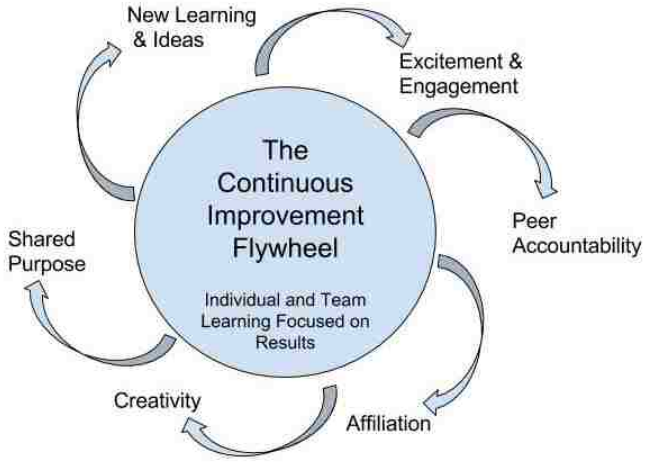


Figure 24. The outcomes of the continuous improvement flywheel are derived mostly from the data from this study and the literature.

Fullan (2008) described this process in his discussion of the *Six Secrets of Change*, "the essence of secret four, learning is the work, concerns how organizations address their

core goals and tasks with relentless consistency, while at the same time learning continuously how to get better and better at what they are doing" (p. 76). The continuous improvement flywheel is the mechanism by which the school organization gets better and better.

Recall the previous section where I described the gap and subsequent tension between the current reality and the shared vision: "Truly creative people use the gap between the vision and current reality to generate energy for change" (Senge, 2006, p. 142). Structured collaboration and team learning is fueled by that energy. Csikszentmihalyi (1997) discusses the effect of synergistic team learning as flow, the effortless action that "happens when a person's skills are fully involved in overcoming a challenge that is just about manageable so it acts as a magnet for learning new skills and increasing challenges" (p. 47). The research data showed clear evidence that some teams arrived at this flow state.

Although there were clear successes of teachers who engaged in meaningful collaborative work with clear goals and came away feeling highly engaged, this research study revealed that teachers typically only engaged in pieces of the continuous improvement cycle as it is defined in the literature. Education scholars and practitioners alike insist that the continuous improvement model is the most promising vehicle to improve teaching and learning in schools (Darling-Hammond, 2013; DuFour & Marzano, 2011, Kanold, 2011; Stigler & Hiebert, 2009). The continuous improvement model as defined in the literature varies slightly depending on the source; however, it basically consists of the following steps: (1) setting clear student learning goals, (2) creating an action plan to achieve the goals, (3) taking action on what works and what is best for students, (4) collecting and analyzing appropriate data, (5) providing intentional creative feedback, and (6) intentionally celebrating

successes (Kanold, 2011). Figure 25 shows one example of a continuous improvement model used by teachers to improve teaching and learning in schools.

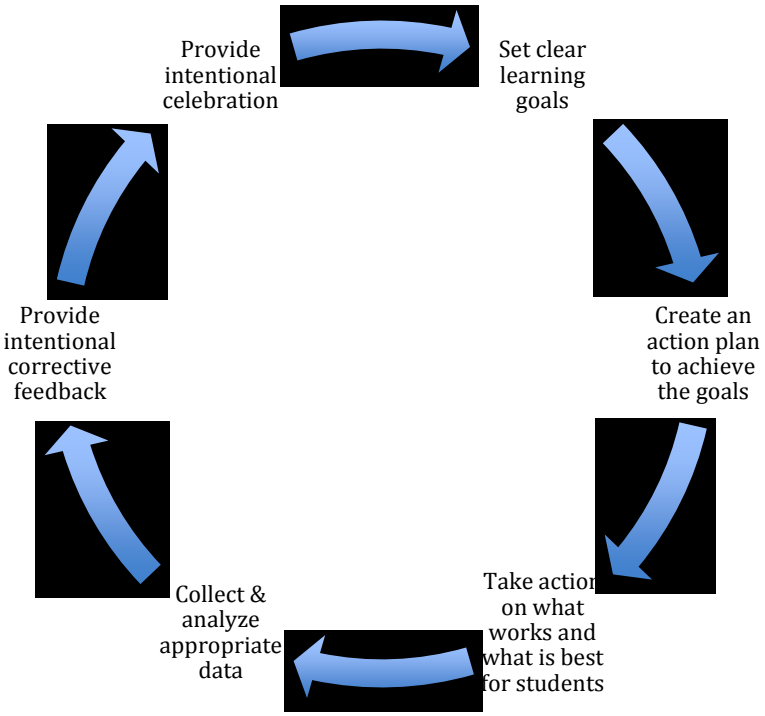


Figure 25. The Continuous Improvement Model, adapted from Kanold (2011, p. 60), is one example of the steps that teachers could go through as they engage in a process of improving teaching and learning.

The continuous improvement model is the tool that school leaders can use to tap teachers' motivation and engagement and build a healthy school professional culture that will truly improve student learning.

6. Set High Expectations: Communicate the Vision, Provide Positive Pressure, and Ensure Accountability

Concrete action number 6 requires that school leaders monitor progress of the individual and team learning to ensure the forces are consistently pushing and pulling the individuals and teams toward the shared vision. These actions insist that school leaders:

1. Set High Expectations – lead the work of collectively creating the shared vision and goals by insisting everyone in the organization can and will improve every day in order for the school to arrive at a better place.
2. Consistently Communicate the Shared Vision and Clear Goals – post the shared vision and goals in a public place and then communicate them regularly, and insist that everyone provide evidence of progress.
3. Provide Positive Pressure – be present in classrooms and during the structured collaborative work in order to emphasize its importance and provide support as needed.
4. Ensure Accountability – hold individuals accountable to their commitments toward achieving their individual and school goals and shared vision.

Although all of these actions are discussed extensively in the leadership and organizational literature, they are not discussed as much in the school literature. Although this research study cannot be generalized to a larger population, it does provide unique insight into the inner workings of school dynamics. The data showed that principals largely neglected the actions described above. Additionally, although some principals were aware of the importance of the above actions, they were not routinely mindful of them, citing lack of time and other more pressing issues.

7. Help with the Work and Provide Encouragement and Emotional Support

Concrete action number 7 requires that school leaders monitor progress of the individual and team learning to ensure that teachers have the nourishment factors they need to be successful. These nourishment factors consist of:

1. Helping with the work – providing the resources necessary for teachers to make progress and be successful in their work.
2. Providing encouragement – providing encouragement, recognition, and continuous positive descriptive feedback.
3. Providing emotional support – providing regular check-ins to measure the emotional well-being of teachers. Listening, showing empathy, and if necessary, helping them work through challenges that may be interfering with their work.

These nourishment factors (Amabile & Kramer, 2011) directly contribute to inner work life. A positive inner work life in turn has a direct positive influence on work performance and productivity. Simply put, if the people in the organization are not happy, the organization will not reach its potential.

All of the concrete actions described above surfaced in the literature and in the results of this study. They are important in the transformational change process because they are related to universal human needs. As Fullan (2008) insists when describing the first of six secrets of change, loving your employees implies "helping all employees find meaning, increased skill development, and personal satisfaction in making contributions that simultaneously fulfill their own goals and the goals of the organization" (p. 25). School leaders cannot ignore these foundational components. The high-performing schools that consistently rank atop the leader board of student performance have made concerted efforts to create the climate and conditions, both physical space and human interactions, necessary for teachers to be successful (Barber & Mourshed, 2007; Fullan, 2008; Tucker, 2011; Wei et al., 2009). All school leaders should consider doing the same.

8. Understand the Progress Principle

Concrete action number 8 is to understand the power of the progress principle, use it to create excitement and momentum toward the shared vision, and then monitor the progress of individuals and teams as they pursue the goals and shared vision. Job-embedded professional learning defined by structured collaboration and the continuous improvement process has the potential to be the built-in mechanism that facilitates progress. This is particularly clear from the results of this research study and is supported broadly in the literature (Darling-Hammond, 2013; DuFour & Marzano, 2011; Kanold, 2011; Stigler & Hiebert, 2009). In essence, the progress principle is the fuel for the continuous improvement flywheel. According to the research on companies that moved from good to great, Collins (2005) insists that there is no one single moment or thing that instantaneously made them great. Rather he explains, their success was more like a big flywheel:

> Pushing with great effort–days, weeks and months of work, with almost imperceptible progress–you finally get the flywheel to inch forward. But you don't stop. You keep pushing, and with persistent effort, you eventually get the flywheel to complete one entire turn. You don't stop. You keep pushing, in an intelligent and consistent direction, and the flywheel moves a bit faster. You keep pushing, and you get two turns … then four … then eight … the flywheel builds more momentum … sixteen … you keep pushing … thirty-two … it builds more momentum … a hundred … moving faster with each turn … a thousand … ten thousand … a hundred thousand. Then at some point, breakthrough! Each turn builds upon previous work, compounding your investment of effort. The flywheel flies forward with almost unstoppable momentum. This is how you build greatness. (Collins, 2005, p. 23)

Based on the findings from this research study and my experience leading teams of teachers in the continuous improvement process, Collin's metaphor of the flywheel is a very accurate description. The momentum generated from the flywheel is powered largely by the progress principle. The theory contends that when people make progress they become even more engaged in their work (Amabile & Kramer, 2011). As stated earlier, the positive outcomes of this team learning are (1) new learning, new ideas, and rich dialogue; (2) excitement and engagement; (3) peer accountability to follow through and implement, and positive competition; (4) affiliation and connection to others seeking the same shared purpose; and (5) creativity.

My goal for directly connecting the psychology and business organization literature to the job-embedded professional learning and the continuous improvement model is to point out how powerful it can be as a contributor to teacher morale and engagement and as a mechanism to transform school professional culture and ultimately improve teaching and learning. The key is creating the conditions necessary to achieve the desired transformation. Deliberate actions of a leader can either constrain or enable these conditions–it is imperative that we get this right.

9. Provide Regular Intentional Celebrations

Concrete action number 9 is to ensure regular celebration of progress toward the goals and shared vision. Celebrating progress in the form of short-term wins is critical to the success of the continuous improvement flywheel and it is also vital to the change process (Kanold, 2011; Kotter, 2012; Kouzes & Posner, 2012; Reeves, 2009). DuFour and Fullan (2013) contend that the intentional celebration of progress and short-term wins is the essential ingredient for sustaining continuous improvement. Celebrating progress gets people

excited; it contributes to the momentum of the flywheel and directly affects the engagement and commitment people feel toward the goals of the organization (Amabile & Kramer, 2011). By consistently and intentionally celebrating short-term wins, leaders can honor the hard work accomplished by teams and individuals (Kanold, 2011) and accelerate the momentum toward the shared vision.

10. Use the Guiding Principles for Transformational Change

Concrete action number 10 is to use Fullan's six secrets of change as principles to guide the change process, a change process that facilitates changing the conditions in a school where educators' learning curves go off the charts (Barth, 2001). I contend–based on substantial evidence–that restructuring schools to ensure that job-embedded professional learning with a focus on team learning and the continuous improvement process is our best hope for transforming schools into places were both educators and students thrive. The leadership model for maximizing teacher engagement and effectiveness is a conceptual framework that synthesizes the literature and the results of this research study to help guide leader actions on their journey.

In order to consolidate and simplify the leadership model in Figure 17, it helps to think of it in terms of guiding principles for the change process. According to Fullan (2008) there are six secrets to transformational change. Thinking in terms of these six secrets may help leaders simplify the change process. I discuss each more fully below.

Love your employees – Connects to **concrete action number 7**: helping with the work, providing encouragement, and providing emotional support. These are the nourishment factors critical to an individual's positive inner work life and a healthy school climate.

Connect peers with purpose – Addresses **concrete action number 1**: collectively define the shared vision, clear goals, and collective commitments; **and 6**: set high expectations, consistently communicate the shared vision and clear goals, provide positive pressure, and ensure accountability. This is the "why" behind the work; it is what helps people feel connected and find meaning in their work.

Capacity building prevails – Connects to **concrete action number 4**: providing on-going opportunity for individuals and teams to engage in their own authentic learning experiences through formal professional development. It helps ensure that individuals work toward mastery.

Learning is the work – Connects directly to **concrete action number 5**, the continuous improvement flywheel. It implies that when individuals engage in structured collaboration with a clear focus on results the team learning that occurs is greater than the individual learning and numerous benefits result.

Transparency rules – Connects all of the concrete actions and insists that when educators open up their professional teaching practice and engage in knowledge building and sharing with others, learning increases exponentially.

Systems learn – Relates to the overall guiding principle of job-embedded professional learning where everyone in the organization learns from one another at all levels and preferably across several schools.

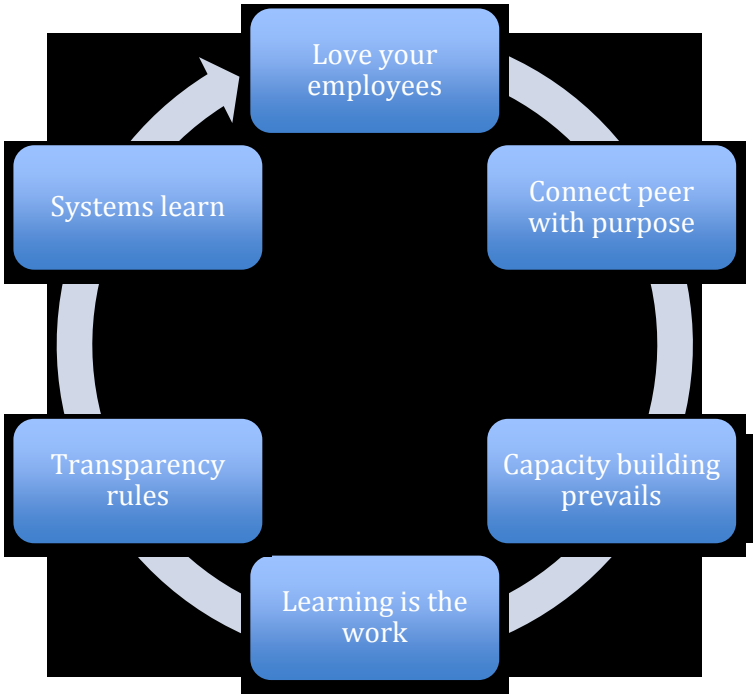


Figure 26. The Six Secrets of Change: What the best leaders do to help their organizations survive and thrive (Fullan, 2008).

Fullan (2008) uses examples from all types of organization: the business sector, the social sector, and education to present his argument for the components of the change process. These six secrets resonate nicely with what I believe has to be done to reform education; therefore, I have chosen them as guiding principles to be used in conjunction with the Leadership Model for Maximizing Teacher Engagement and Effectiveness. Leaders who truly seek to transform schools into learning organizations will find their best hope in using the concrete steps outlined in the leadership model. However, it is important to remember that transforming any organization is a gradual process, and although the concrete actions outlined above provide a roadmap, they do not guarantee success. Success will only come with relentless commitment, disciplined focus, and a willingness to persist.

Recommendations for Future Research

Based on the results of this research study, there is a knowing-doing gap that exists when it comes to leaders being able to create organizations where teachers productively engage in job-embedded professional learning and the continuous improvement process. In other words, school leaders may have some degree of knowledge as to what could be done, but they do not know it well enough to lead it effectively. In order to facilitate principals' understanding of how to transform a school into a learning organization, they need to experience it themselves. Goodlad (1984) proposed the idea that districts should create schools where innovative practices can be developed and vetted. These schools, he contends, should be connected to a university and the state public education department with the intended purpose of developing and spreading effective practices. Building on this idea, I recommend establishing a laboratory school in northern New Mexico where teachers and school leaders can experiment with innovative practices, where job-embedded professional learning is a major focus, and where teachers dedicate forty percent of their workweek to professional learning focused on structured collaboration and the continuous improvement process. Structures and opportunities would be provided for teachers and school leaders to reflect on and continuously improve their professional practice and to participate in the development of the body of knowledge of teaching, learning, and educational leadership. These collaborative opportunities for continuous improvement would operate at grade, school, and partnership levels. They would include formal professional development as well as in-school collaborative professional learning.

In addition, the laboratory school should have a pre-service component linked to a university pre-service program in which student teachers are paired with one or more master

teachers to learn and experiment with the most effective teaching methods. Furthermore, the school should have a leadership component in which chosen candidates, selected based on a competitive process, could apply to conduct their principal internships. This would provide potential leaders the concrete experiences they need both to see effective instruction in action while participating alongside teachers as they engage in professional learning designs and cycles of continuous improvement and learn steps for transforming a school's professional culture by engaging in the work of running a high functioning school where job-embedded professional learning is an expectation of the job and where the continuous improvement process is built into the fabric of the school design. Aspiring leaders would work with their university professors and mentors to help add to the body of knowledge of effective instructional leadership and school transformation. This call is also heeded by Hattie (2015) who insisted that our best hope for improving education is to create a system where collaborative expertise can be proliferated and where the barriers of isolation are overtaken by transparency. Until teachers and school leaders actually *do the work*, learning-by-doing, they most likely will not be able to effectively engage in and *lead* the work.

Lastly, the curriculum of the school would be researched, created, and develop by the teachers. The curriculum would then be continuously modified as necessary to incorporate the lessons learned on a continuous basis.

A laboratory school would help to accomplish several goals. First, it would provide a genuine opportunity for scholars and practitioners to collaborate to create a school environment where student and adult learning is off the charts, where best practices could be implemented and vetted, and where innovative ideas could be systematically implemented from the ground up rather than trying to impose them in an existing school from the top

down. This experimental setting would provide an opportunity for scholars and practitioners to publish which practices work and which practices do not work in the context of northern New Mexico.

Second, a laboratory school could be the place where leaders at all levels have conversations about true education reform. Since the school would be located in the northern New Mexico context, it would provide teachers and local and state leaders the opportunity to engage in meaningful policy discussions. This is in contrast to basing policy on reform efforts that have not been tested or have no evidence of working in the geographical and cultural context of New Mexico. The laboratory school should be the center of a larger network of schools where the expectation is to share and build knowledge about effective teaching and leadership practices. Both teachers and leaders who have been trained in the laboratory school and who have demonstrated a level of proficiency could then move on to other schools with the intent of implementing learned practices (Goodlad, 1984).

Third, a laboratory school would help to cement the idea that improving our education system is based on many variables that require a gradual continuous improvement approach rather than a quick fix top-down approach. It could prove to be the model that provides the necessary evidence that real school reform will require systems in place to ensure teachers and school leaders work in an environment that promotes and supports continuous improvement of practice. Additionally, this model could serve as evidence for the need to raise the level of the teaching and school leader profession. It could support the idea that all educators deserve the right to practice the profession without fear of reprisal from the results of an evaluation system that is not grounded in research. If this laboratory model school could help shift the narrative from one of punitive measures to one of support and

growth, we may see the teaching profession begin to thrive. And, if policies are put into place to support and grow the profession, we will no doubt see new individuals attracted to the profession. As Fullan (2011) contends, the right drivers should consist of capacity building, social capital (the quality of the group), instruction, and "systemness." These, he contends, should be emphasized over accountability, human capital (the talent of individuals), technology, and fragmented strategies. Developing a laboratory school with a university partner for the purpose of developing the collective capacity of teachers and school leaders to experiment with and proliferate practices that work in our northern New Mexico context would have lasting positive impacts on our education system.

Lastly, the laboratory school should help to influence policy at the university level with regards to pre-service teacher and school leadership licensure programs. Additionally, it should help to catalyze conversations between and among districts, the New Mexico Public Education Department, New Mexico Higher Education Department, universities, national laboratories, and other stakeholders. It could be a mechanism to really learn what works and help take research to scale. Simply put, we will surely struggle to improve our education system if we continue to operate in silos. The laboratory school could be the centerpiece through which all stakeholders come together to seek real solutions for New Mexico students, teachers, and leaders.

Summary

"You take a school, you change the conditions, give people a different sense of possibility, a different set of expectations, a broader range of opportunities, you cherish and value the relationships between teachers and learners, you offer people the discretion to be creative and schools that were once bereft spring to life" (Sir Ken Robinson, 2013). The

education community knows enough to improve schools dramatically–it stems largely from restructuring and re-culturing schools to create the proper conditions–what are we waiting for?

The purpose of this study was to develop a richer understanding of the dynamic that occurs when teachers engage in job-embedded professional learning characterized by continuous improvement in order to create the conditions where "learning is off the charts" and once-bereft schools have the opportunity to spring to life. The primary research question was, "how do job-embedded professional learning and leadership influence school professional culture? And, what are the implications for leadership?" This qualitative research study employed the methodology of grounded theory. I used data from eighteen teacher interviews, eight principal interviews, and MSA evaluation reports (Trujillo, 2013, 2014, 2015).

The results of this research study combined with the recommendations of numerous education scholars and practitioners show clear evidence that restructuring schools to provide the time for teams of teachers to engage in structured collaboration and the continuous improvement model is a powerful mechanism to improve both teaching and learning in a school as well as school professional culture. In an effort to make sense of the literature and the study results, I developed a leadership model meant to provide leaders a guide for starting and maintaining transformational change. The model, A Leadership Model for Maximizing Teacher Engagement and Effectiveness, provides ten concrete actions leaders can take to help them on their journey. Although the model was originally conceptualized as a result of synthesizing the review of the literature, it was significantly modified as I incorporated the themes that emerged in this research study.

My hope is that education scholars and practitioners alike can use the results of this research study, and particularly the leadership model, in their own work to further advance the field, and most importantly, the lives of students–the reason we do this work.

References

Amabile, T. & Kramer, S. (2011). *The Progress Principle: Using Small Wins to Ignite Joy, Engagement, and Creativity at Work*. Boston, MA: Harvard Business Review Press.

Amabile, T.M. (1993). Motivation Synergy: Toward New Conceptualizations of Intrinsic and Extrinsic Motivation in the Workplace. *Human Resource Management Review*. 3(3), 185-201.

Baker, E., Barton, P., Darling-Hammond, L., Haertel, E., Ladd, H., Linn, R., Ravitch, D., Rothstein, R., Shavelson, R., & Shepard, L. (2010). *Problems with the Use of Student Test Scores to Evaluate Teachers*. EPI Briefing Paper # 278. Economic Policy Institute.

Banilower, E. R., Smith, P. S., Weiss, I. R., Malzahan, K. A., Campbell, K. M., & Weis, A. M. (2013). *Report of the 2012 national survey of science and mathematics education*. Chapel Hill, NC: Horizon Research, Inc.

Barber, M., & Mourshed, M. (2007). *How the world's best–performing school systems come out on top*. London: McKinsey & Company. Retrieved July, 2014 from http://mckinseyonsociety.com/how-the-worlds-best-performing-schools-come-out-on-top/

Barth, R. (2001). Learning by Heart. San Francisco, CA: Jossey-Bass.

Bass, B.M, & Avolio, B.J. (1993). Transformational leadership and organizational culture. *Public Administration Quarterly*, 17(1), 112.

Bill and Melinda Gates Foundation. (2010). *Learning about Teaching: Initial Findings from the Measures of Effective Teaching Project*. Retrieved October 30, 2012, from http://www.metproject.org

Bolman, L. G., & Deal, T. E. (2013). *Reframing Organizations* (5th ed.). San Francisco, CA: Jossey-Bass.

Burns, J.M. (1978). *Leadership*. New York: Harper and Row.

Bush, T. (2011). *Theories of Educational Leadership and Management*. Thousand Oaks, CA: Sage.

Coggshall, J. (2012a). *Toward the effective teaching of new college-and career-ready standards: making professional learning systemic*. Washington, DC: National Comprehensive Center for Teacher Quality. Retrieved July, 2014 from http://search.ets.org/researcher/query.html?fl0=KW%3A&ty0=p&op0=&tx0=National%20Comprehensive%20Center%20for%20Teacher%20Quality%20%28NCCTQ%29

Coggshall, J., Rasmussen, C., Colton, A., Milton, J., & Jacques, C. (2012b). *Generating teaching effectiveness: the role of job-embedded professional learning in teacher evaluation*. Washington, D.C: National Comprehensive Center for Teacher Quality. Retrieved February 13, 2014, from http://search.ets.org/researcher/query.html?fl0=KW%3A&ty0=p&op0=&tx0=National%20Comprehensive%20Center%20for%20Teacher%20Quality%20%28NCCTQ%29

Collins, J. (2001). *Good to Great: Why Some Companies Make the Leap and Others Don't*. New York, NY: HarperCollins Publisher Inc.

Collins, J. (2005). *Good to Great and the Social Sectors*. New York, NY: HarperCollins Publisher Inc.

Common Core State Standards Initiative. (2014). *Mathematics Standards*. Retrieved July 24, 2014, from http://www.corestandards.org/Math/

Conger, J.A. (1999). Charismatic and transformational leadership in organizations: An insider's perspective on these developing streams of research. *Leadership Quarterly*, 10(2), 145-179.

Creswell, J. (2002). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks, CA: Sage Publications, Inc.

Creswell, J. (2007). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. Thousand Oaks, CA: Sage Publications, Inc.

Croft, A., Coggshall, J., Dolan, M., Powers, E., & Killion, J. (2010). *Job-embedded professional development: what it is, who is responsible, and how to get it done well*. Washington D.C.: Retrieved February 13, 2014, from http://learningforward.org/docs/pdf/jobembeddedpdbrief.pdf?sfvrsn=0

Csikszentmihalyi, M. (1990). *Flow: The Psychology of Optimal Experience*. New York, NY: Harper Collins Publishers.

Csikszentmihalyi, M. (1997, July/August). Finding Flow. *Psychology Today,* Retrieved from http://wiki.idux.com/uploads/Main/FindingFlow.pdf

Darling-Hammond, L. (1999, Spring). Target time toward teachers. *Journal of Staff Development*, 20(2), 31-36. Retrieved from http://learningforward.org/publications/bloglanding/jsd/2012/03/19/jsd-spring-1999-time#.U_tYRkjUGTs

Darling-Hammond, L. (2013). *Getting Teacher Evaluation Right: What Really Matters for Effectiveness and Improvement.* Oxford, OH: Learning Forward.

Darling-Hammond, L. (2014). One Piece of the Whole: Teacher Evaluation as Part of a Comprehensive System for Teaching and Learning. *The American Educator.* Retrieved on March 18, 2014 from http://www.aft.org/newspubs/periodicals/ae/

Deal, T.E., & Peterson, K.D. (2009). *Shaping School Culture: Pitfalls, Paradoxes, & Promises*. San Francisco, CA: Jossey-Bass.

Deming, W.E. (1994). *The New Economics for Industry, Government, Education* (2nd ed.). Cambridge, MA: MIT Press.

Deming, W.E. (2013). *The Essential Deming*. New York, NY: McGraw Hill.

DeMonte, J. (2013). *High-quality professional development for teachers*. Washington D.C.: Center for American Progress. Retrieved September 17, 2013, from http://www.americanprogress.org/issues/education/report/2013/07/15/69592/high-quality-professional-development-for-teachers/

Donovan, M.S., & Bransford, J.D. (2005). How Students Learn Mathematics in the Classroom. Washington, DC: National Academies Press.

DuFour, R., DuFour, R., & Eaker, R. (2008). *Revisiting Professional Learning Communities at Work.* Bloomington, IN: Solution Tree.

DuFour, R., DuFour, R., Eaker, R., & Many, T. (2010). *Learning By Doing* (2nd ed.). Bloomington, IN: Solution Tree.

DuFour, R., & Fullan, M. (2013). *Cultures Built to Last: Systemic PLCs at Work.* Bloomington, IN: Solution Tree.

DuFour, R., & Marzano, R. (2011). *Leaders of Learning: How District, School, and Classroom Leaders Improve Student Achievement*. Bloomington, IN: Solution Tree Press.

DuFour, R., & Mattos, M. (2013, April). How do principals really improve schools? Educational Leadership, 70 (7), 34-40, Retrieved from http://www.ascd.org/publications/educationalleadership/apr13/vol70/num07/How-Do-Principals-Really-ImproveSchools%C2%A2.aspx

Dweck, C.S. (2008). *Mindset: The New Psychology of Success*. New York, NY: Ballantine Books.

Fullan, M. (2001). *Leading in a Culture of Change*. San Francisco, CA: Wiley & Sons, Inc.

Fullan, M. (2008). *The Six Secrets of Change*. San Francisco, CA: Jossey-Bass.

Fullan, M. (2010). *All Systems Go: The Change Imperative of Whole System Reform*. Thousand Oaks, CA: Corwin and Sage.

Fullan, M. (2011). *Choosing the wrong drivers for whole system reform (Seminar Series 204)*. Victoria, Australia: Centre For Strategic Education. Retrieved March 1, 2014, from http://www.michaelfullan.ca/media/13396088160.pdf

Fullan, M. (2014), *The Principal: Three Keys to Maximizing Impact*. San Francisco, CA: Jossey Bass.

Gallup. (2013). State of America's schools: the path to winning again in education. Washington, D.C.: Gallup World Headquarters. Retrieved on August 14, 2014 from http://thegallupblog.gallup.com/2014/04/gallup-releases-new-insights-into-state.html

Garet, M.S., Porter, A.C., Desimone, L., Birman, B.F., & Yoon, K.S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal*, 38(4), 915-945

Gladwell, M. (2008). *Outliers: The Story of Success*. New York, NY: Little, Brown and Company.

Gonzales, A. (2016). Bilingual education at two urban high schools: A cross Case Analysis. (Unpublished doctoral dissertation). University of New Mexico, Albuquerque.

Goodlad, J.I. (1984). *A Place Called School: Prospects for the Future*. New York, NY: McGraw-Hill Book Company.

Graham, P. A. (2005). *Schooling America: How the Public Schools Meet the Nation's Changing Needs*. New York, NY: Oxford University Press.

Guskey, T. (2003, June). What Makes Professional Development Effective? *Phi Delta Kappan*, 84(10), 748. Retrieved from Education Research Complete, UNM. www.http://ehis.ebscohost.com.libproxy.unm.edu/eds/pdfviewer/pdfviewer?vid=3&sid=d0b88f8d-007f-41af-85ab-bb030f5a0b20%40sessionmgr14&hid=16

Guskey, T. (2002). Professional development and teacher change. *Teachers and Teaching*:*theory and practice*, 8(3), 381-391.

Guskey, T., & Yoon, K. (2009, March). What Works in Professional Development? *Phi Delta Kappan*, 90(7), 495-500. Retrieved from Education Research Complete, UNM. http://ehis.ebscohost.com.libproxy.unm.edu/eds/pdfviewer/pdfviewer?vid=3&sid=d0b88f8d-007f-41af-85ab-bb030f5a0b20%40sessionmgr14&hid=7

Hattie, J. (2009). *Visible Learning: A Synthesis of Over 800 Meta-Analysis Relating to Achievement*. New York, NY: Routledge.

Hattie, J. (2015). *What Works Best in Education: The Politics of Collaborative Expertise*. London: Pearson.

Hargreaves, A., Boyle, A., & Harris, A. (2014). *Uplifting Leadership: How Organizations, Teams, and Communities Raise Performance*. San Francisco, CA: Jossey-Bass.

Hargreaves, A., & Fullan, M. (2012). *Professional Capital: Transforming Teaching in Every School*. New York, NY: Teacher's College Press.

Hargreaves, A., & Shirley, D. (2012). *The Global Fourth Way: The Quest for Educational Excellence*. Thousand Oaks, CA: Corwin.

Hargreaves, A., & Fink, D. (2006). *Sustainable Leadership*. San Francisco, CA: Jossey-Bass.

Herzberg, F. (1987). One more time: How do you motivate employees? Harvard Business Review, 65(5), 109-120.

Hirsh, S. (2009). *NSDC Policy Points: Ensure Great Teaching for Every Student*. National Staff Development Council. Retrieved on February 18, 2014, from http://learningforward.org/publications/nsdc-policy-points#.U2KHQsfUHKY

Japuith, A., Mindich, D., Wei, R.C., & Darling-Hammond, L. (2010). *Teacher professional learning in the United States: case studies of state policies and strategies*. Oxford, OH: Learning Forward. Retrieved August 20, 2014, from http://eric.ed.gov/?id=ED536361

Joyce, B. (2004). How Are Professional Learning Communities Created? History Has a Few Messages. *Phi Delta Kappan*, 86(1), 76-83.

Kanold, T.D. (2011). *The Five Disciplines of PLC Leaders*. Bloomington, IN: Solution Tree Press.

Kanold, T.D., & Larson, M., (2012). *Common Core Mathematics in a PLC at Work: Leader's Guide*. Bloomington, IN: Solution Tree.

Killion, J. (2015). *The Feedback Process: Transforming Feedback for Professional Learning*. Oxford, OH: Learning Forward.

Killion, J., Harrison, C., Bryan, C., & Clifton, H. (2012). *Coaching Matters*. Oxford, OH: Learning Forward.

Killion, J., & Roy, P. (2009). *Becoming a Learning School*. Oxford, OH: NSDC.

Kotter, J.P. (2012). *Leading Change*. Boston, MA: Harvard Business Review Press.

Kouzes, J., & Posner, B. (2012). *The Leadership Challenge: How to Make Extraordinary Things Happen in Organizations*. New York, NY: Collins Business.

Learning Forward. (2011). Standards for professional learning. Oxford, OH: Author. Retrieved from http://learningforward.org/standards#.U8fxA6jUHKZ

Learning Forward. (2013). Standards into practice: School system roles. Innovation Configuration maps for Standards for Professional Learning. Oxford, OH: Author.

Leithwood, K., Seashore, L., Anderson, S., & Wahlstrom, K. (2004). *How leadership influences student learning*. New York, NY: The Wallace Foundation. Retrieved August 22, 2014 from http://www.wallacefoundation.org/knowledge-center/school-leadership/key-research/Pages/How-Leadership-Influences-Student-Learning.aspx

Lencioni, P. (2002). The Five Dysfunctions of a Team. San Francisco, CA: Jossey-Bass.

Lewis, C.C., & Hurd, J. (2011). *Lesson Study: Step by Step*. Portsmouth, NH: Heinemann.

Liker, J.K., & Convis, G.L. (2012). *The Toyota Way to Lean Leadership*. New York, NY: McGraw Hill.

Marzano, R.J. (2003). *What Works in Schools: Translating Research into Action*. Alexandria, VA: Association for Supervision and Curriculum Development.

Marzano, R.J., Waters, T., & McNulty, B.A. (2005). *School Leadership that Works*. Alexandria, VA: ASCD.

Marzano, R.J., Pickering, D.J., & Pollock, J.E. (2001). *Classroom Instruction that Works*. Alexandria, VA: ASCD.

Maslow, A.H. (1943). A Theory of Human Motivation. *Psychological Review*, 50(4), 370 – 396. http://dx.doi.org/10.1037/h0054346

Mattos, M. (2008). *Walk the 'Lign: Aligning School Practices with Essential PLC Characteristics*. Bloomington, IN: Solution Tree Press.

Maxwell, J. (2005). *Qualitative Research Design: An Interactive Approach*. Thousand Oaks, CA: Sage Publications, Inc.

Metropolitan Life Insurance Company. (2013). *The MetLife survey of the American Teacher*. New York, NY: Author. Retrieved on August 5, 2014, from https://www.metlife.com/assets/cao/foundation/MetLife-Teacher-Survey-2012.pdf

McGregor, D.M. (1957). The human side of enterprise. New York, 21(166.1960).

Mizell, H. (2010). *Why Professional Development Matters*. Oxford, OH: Learning Forward. Retrieved July 18, 2014, from www.learningforward.org/advancing/whypdmatters.cfm

Mourshed, M., Chijioke, C. & Barber, M. (2010). *How the world's most improved school systems keep getting better*. Retrieved on March 18, 2014, from http://www.mckinsey.com/client_service/social_sector/latest_thinking/worlds_most_improved_schools.aspx

Muhammad, A. (2009). *Transforming School Culture: How to Overcome Staff Division*. Bloomington, IN: Solution Tree.

OECD (2012). *Key indicators on education*: *An OECD survey* on *How Much Time Do Students Spend in the Classroom.* Retrieved July 25, 2012, from http://www.oecd.org/topic/0,3699,en_2649_37455_1_1_1_1_37455,00.html

OECD (2014a). *A teachers guide to TALIS 2013: teaching and learning international survey*. TALIS, OECD Publishing. Retrieved August 21, 2014 from http://dx.doi.org/10.1787/9789264216075-en

OECD (2014b). *PISA 2012 results in focus*: *what 15-year-olds know and what they can do with what they know*. OECD Publishing. Retrieved August 21, 2014 from http://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf

Partnership for Assessment of Readiness for College and Careers. (2014). *About PARCC*. Retrieved July 24, 2014, from http://www.parcconline.org

Pink, D.H. (2009). *Drive: The Surprising Truth About What Motivates Us*. New York, NY: Riverhead Books.

Pollock, J.E., & Ford, S.M. (2009). *Improving Student Learning One Principal at a Time*. Alexandria, VA: Association for Supervision and Curriculum Development.

Preskill, S., & Brookfield, S. (2009). *Learning as a Way of Leading*. San Francisco, CA: Jossey-Bass.

Ravitch, D. (2013). *Reign of Error: The Hoax of the Privatization Movement and the Danger to America's Public Schools*. New York, NY: Random House, LLC.

Reeves, D.B. (2009). *Leading Change in Your School*. Alexandria, VA: ASCD.

Riveros, A., Newton, P., & Burgess, D. (2011). A Situated Account of Teacher Agency and Learning: Critical Reflections on Professional Learning Communities. *Canadian Journal of Education*, 35(1), 202-216.

Robinson, K. (2013, June). *How to Escape Education's Death Valley* [Video file]. Retrieved from https://www.youtube.com/watch?v=wX78iKhInsc

Ryan, R.M., & Deci, E.L. (2000). Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist*, 55(1), 68-78.

Sahlberg, P. (2015). *Finnish Lessons 2.0: What can the world learn from educational change in Finland*? (2nd ed.). New York, NY: Teachers College Press.

Schmoker, M. (2006). Results Now: *How We Can Achieve Unprecedented Improvements in Teaching and Learning*. Alexandria, VA: Association for Supervision and Curriculum Development.

Senge, P., Cambron-McCabe, N., Lucas, T., Smith, B., Dutton, J. & Kleiner, A. (2012). *Schools That Learn: A Fifth Discipline Fieldbook for Educators, Parents, and Everyone Who Cares About Education*. New York, NY: Crown Publishing Group.

Senge, P.M. (2006). *The Fifth Discipline: The Art & Practice of the Learning Organization*. New York, NY: Doubleday.

Shamir, B., House, R.J., & Arthur, M.B. (1993). The motivational effects of charismatic leadership: A Self-concept based theory. *Organization Science, 4*(4), 577-594.

Shulman, V. & Sullivan, S. (2015). Here today gone tomorrow: Conceptualizing instructional leadership through case studies of unsustained initiates. Education and Urban Society, 47(3), 271-283.

Sinek, S. (2009). *Start with Why: How Great Leaders Inspire Everyone to Take Action*. New York, NY: Penguin.

Sisodia, R., Wolfe, D.B., & Sheth, J. (2003). *Firms of Endearment: How World-Class Companies Profit from Passion and Purpose*. Upper Saddle River, NJ: Prentice Hall.

Strauss, A. & Corbin, J. (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. New York, NY: Sage Publications.

Stigler, J.W., & Hiebert, J. (1999). *The Teacher Gap*: *The Best Ideas from the World's Teachers for Improving Education in the Classroom*. New York, NY: Free Press

Stigler, J.W., & Hiebert, J. (2009, November). Closing the teaching gap. Phi Delta Kappan, 91(3), 32-77. Retrieved from JSTOR. http://www.jstor.org/stable/pdf/40345086.pdf?seq=1#page_scan_tab_contents

Taylor, F.W. (1939). Principles of scientific management. Scientific Management. 30-48. New York, NY: Harper & Row. Retrieved from https://books.google.com/books?id=v8Vzk3YqA9gC&pg=PA44&lpg=PA44&dq=frederick+taylor+scientific+management+citation+1939&source=bl&ots=IpnVDLxpRH&sig=AtlZaVhD82rLPH9kEFBwSxx7xrE&hl=en&sa=X&ved=0ahUKEwimz--wpPXLAhXIwj4KHb_rDe0Q6AEIOjAE#v=onepage&q=frederick%20taylor%20scientific%20management%20citation%201939&f=false

Trujillo, B. (2015). Math and Science Academy Evaluation Report. Retrieved October 28, 2015, from http://www.lanl.gov/community/education/teacher-resources/math-science-academy.php

Trujillo, B. (2014). *Math and Science Academy Evaluation Report*. Retrieved September 6, 2015, from http://www.lanl.gov/community/education/teacher-resources/math-science-academy.php

Trujillo, B. (2013). Math and Science Academy Evaluation Report. Retrieved September 17, 2015, from http://www.lanl.gov/community/education/teacher-resources/math-science-academy.php

Tucker, M. (2011). *Surpassing Shanghai: An Agenda for American Education Built on the World's Leading Systems*. Cambridge, MA: Harvard Education Press.

Tyack, D. & Cuban, L. (1995). *Tinkering Toward Utopia: A Century of Public School Reform*. Cambridge, MA: Harvard University Press.

United States Department of Education. (2002). No Child Left Behind Act of 2001. Washington, D.C: Office of Elementary and Secondary Education. Retrieved on May 1, 2014, from http://www2.ed.gov/policy/elsec/leg/esea02/index.html

Wei, R.C., Darling Hammond, L., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional Learning in the Learning Profession: A Status Report on Teacher Development in the U.S. and Abroad.* Dallas, TX. National Staff Development Council.

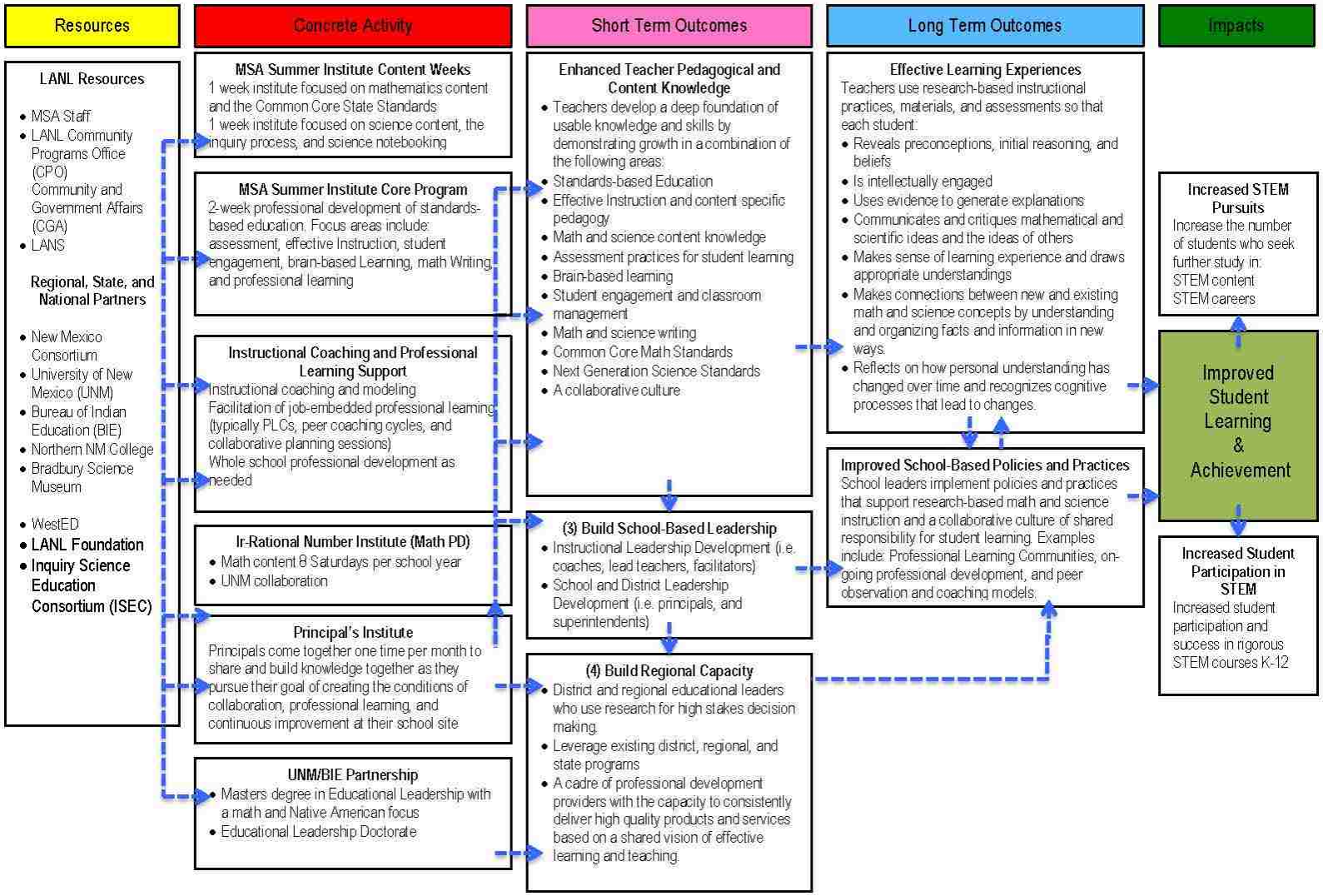
Weisberg, D., Sexton, S., Mulhern, J., & Keeling, D. (2007). *The Widget Effect: Our National Failure to Acknowledge and Act on Difference in Teacher Effectiveness*. New York: New Teacher Project. Retrieved from http://widgeteffect.org/

Yoon, K.S., Duncan, T., Lee, S. W.Y., Scarloss, B., & Shapley, K. (2007). *Reviewing the evidence on how teacher professional development affects student achievement* (Issues & Answers Report, REL 2007-No. 033). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest. Retrieved from http://ies.ed.gov/ncee/edlabs

Appendices

Appendix A

The LANL Math and Science Academy Theory of Change Model



Appendix B

Teacher and Principal Interview Protocols

Teacher Interview Protocol

Time of Interview:
Date:
Place:
Interviewer:
Interviewee Pseudonym:
Position of interviewee:
Description of Project:
The purpose of this study is to determine how job-embedded professional learning and leadership influences school professional culture? And, what are the implications for leadership? The study will be a grounded theory design.

Teacher Interview Questions:

General

1. Continuous improvement is a term often used to describe an ongoing effort to improve teaching and learning. What does the term mean to you?
2. Do you feel like you are continuing to grow as a teacher? What is your evidence?
3. When you feel you haven't taught a lesson well, where do you turn for help?
4. What systems of support exist for you to improve your teaching in your school or community?
5. Tell me about an experience in the past or on-going that has had the most profound effect on your teaching.
    a. Who or what were the drivers of that experience?
6. Can you think of a time when you felt frustrated as a teacher or as a member of your school community?
7. What influence is your teaching having in the lives of students?
8. How does your participation in the MSA summer institute influence your work with students and work with your principal?

The Continuous Improvement Process/The Flow Channel

9. What is the work of your PLC? When does your PLC work at its best, at its worst?
10. What comes out of your PLC? How do you use that in your classroom? Can you provide an example?
11. What role do you think you play in the PLC? (Provide context before asking question)
12. When do you feel most engaged in your own learning? Describe.

The Progress Principle

13. Can you think of a time when you've made progress in your work? How often does that occur?

The Catalyst Factor

14. How do you feel your work is supported, or not? Please provide an example.

The Nourishment Factor

15. How do you feel you are emotionally supported in your work? For example, do you feel respected, encouraged, emotionally supported?
16. How would you describe your relationships with your fellow teachers?

The Inner Work Life System

17. Please describe a day where, at the end, you felt a strong sense of accomplishment and satisfaction.

(*Thank the individual for participating in this interview. Assure him or her of confidentiality of response.*)

Principal Interview Protocol

Time of Interview:
Date:
Place:
Interviewer:
Interviewee Pseudonym:
Position of interviewee:
Description of Project:
The purpose of this study is to determine how job-embedded professional learning and leadership influences school professional culture? And, what are the implications for leadership? The study will be a grounded theory design.

Principal Interview Questions:

General

1. What is your vision of a school where teachers are continuing to improve their practice?
2. How does your school management philosophy guide your actions for improving teaching and learning?
3. When teachers are not performing at the level you think they should be performing, how do you help them? What opportunities do they have to improve?
    a. What are the formal structures?
    b. What is your role in this?
4. Do you feel teachers in your school know much about what other teachers are doing in their classroom?
5. What are your expectations for teacher collaboration? Explain.
6. What structures have you put in place to enable teachers to work with one another?
7. For teachers who may not feel engaged in their work what actions do you take to make them feel more engaged (for example: boost morale, productive, committed, collegial, effective, etc.)?

The Continuous Improvement Process/The Flow Channel

8. What are your school's PLC's tasked with doing? Describe what teachers do.

9. What comes out of teachers' PLCs/work groups? How do they typically use what they learned in their classroom?

10. Based on your observations, when do you feel teachers are the most engaged in their own learning? Describe.

The Progress Principle

11. Do you feel teachers in your school are making regular progress in their work? Explain.

The Catalyst Factor

12. How do you support your teachers in their work?

The Nourishment Factor

13. How do you emotionally support your teachers in their work? For example, how do you make sure they feel respected, encouraged, emotionally supported?

14. How would you describe your relationships with your teachers?

The Inner Work Life System

15. Please describe workday events that you think contribute to teachers' individual performance.

16. How does your teachers' participation in the MSA summer institute influence their work with students and work with each other?

(*Thank the individual for participating in this interview. Assure him or her of confidentiality of response.*)

Appendix C

Recruitment Meeting Script

RECRUITMENT SCRIPT FOR FACE-TO-FACE MEETINGS

Greetings.

My name is Zachary Leonard and I am a doctoral student at the University of New Mexico. I am conducting a research study about the influence of job-embedded professional learning on school professional culture. I am here today to invite you to participate in the study. It will be an interview format. Each interview should take about 45-60 minutes to complete. All interviews will take place here at your school. Participation is completely voluntary.

I am distributing recruitment flyers with my contact information. If you are interested, please contact me via e-mail or phone and I will work with you to set up a date and time to conduct this interview. In the event I have more volunteers than I need, I will use random selection.

If you have any questions, please do not hesitate to contact me. My contact information is on the flyer.

Thank you for your time and consideration.

Number: 11515
Version: 7/5/2015
Approved: 8/24/2015
Expires: EXEMPT
Institutional Review Board

Appendix D

Teacher Recruitment Flyer

You are Invited to Participate in this Study

This study will answer the following research question:

- How do job-embedded professional learning and leadership influence school professional culture? And, what are the implications for leadership?

About the Interview:

- Interviews will last between 45 minutes to 1 hour.
- Interviews will take place in a private setting to be determined between the participant and researcher.

Contact Zachary Leonard if you are interested in participating in this study.

Email: Zachary.leonard@gmail.com

Phone: (505) 699-4053

Interviews will take place in August, September, and October

The University of New Mexico Internal Review Board has approved this study.

Number: 11515
Version: 7/5/2015
Approved: 8/24/2015
Expires: EXEMPT
Institutional Review Board

Appendix E

Approved Consent Form

The University of New Mexico
Consent to Participate in Research

Introduction

You are being asked to participate in a research study that is being done by Zachary Leonard, a doctoral student in the Department of Teacher Education, Educational Leadership and Policy in the College of Education. The purpose of this study is to determine how job-embedded professional learning and leadership influence school professional culture.

You are being asked to participate in this study because you are a teacher or principal participating in the Math and Science Academy Program. Approximately twenty-eight people from five Bureau of Indian Education schools and one tribally controlled grant school will take part in this study.

This form explains the research study and also explains the possible risks as well as the possible benefits to you. If you have any questions, please ask me.

What will happen if I decide to participate?

If you agree to participate in this study, you will be interviewed.

How long will I be in this study?

Participation in this study will consist of one interview lasting approximately one hour in length.

What are the risks or side effects of being in this study?

The risks to all participants are minimal. If you feel emotional distress at any time during the interview you may ask to stop. Any interview data collected from this study will be kept confidential. At no time will your name be associated with the research findings and only I will know your identity as a participant.

What are the benefits to being in this study?

There will be no direct benefit to you from participating in this study. However, it is hoped that information gained from this study will help contribute to a deeper understanding of how job-embedded professional learning and leadership influence school professional culture, what those findings mean for leadership, and the opportunity for the Los Alamos National Laboratory Math and Science Academy and partner schools to use the results to improve their organizations.

What other choices do I have if I do not want to be in this study?

You have the option not to take part in this study. There will be no penalties involved if you choose not to take part in this study.

Number: 11515
Version:
Approved:
Expires:

Institutional Review Board

How will my information be kept confidential?

No identifiable information will be used. I will identify all participants in my dissertation using pseudonyms.

We will take measures to protect the security of all your personal information, but we cannot guarantee confidentiality of all study data.

The University of New Mexico Institutional Review Board (IRB) that oversees human subject research and/or other entities may be permitted to access your records. There may be times when we are required by law to share your information. Your name will not be used in any published reports about this study.

How will I know if you learn something new that may change my mind about participating?

You will be informed of any significant new findings that become available during the course of the study, such as changes in the risks or benefits resulting from participating in the research or new alternatives to participation that might change your mind about participating.

Can I stop being in the study once I begin?

Your participation in this study is completely voluntary. You have the right to choose not to participate or to withdraw your participation at any point in this study.

Whom can I call with questions or complaints about this study?

If you have any questions, concerns or complaints at any time about the research study, contact the student investigator, Zachary Leonard at 505-699-4053 or his faculty advisor, Dr. Allison M. Borden, at 505-277-1285.

If you would like to speak with someone other than the research team, you may call the UNM Office of the IRB at (505) 277-2644.

Whom can I call with questions about my rights as a research participant?

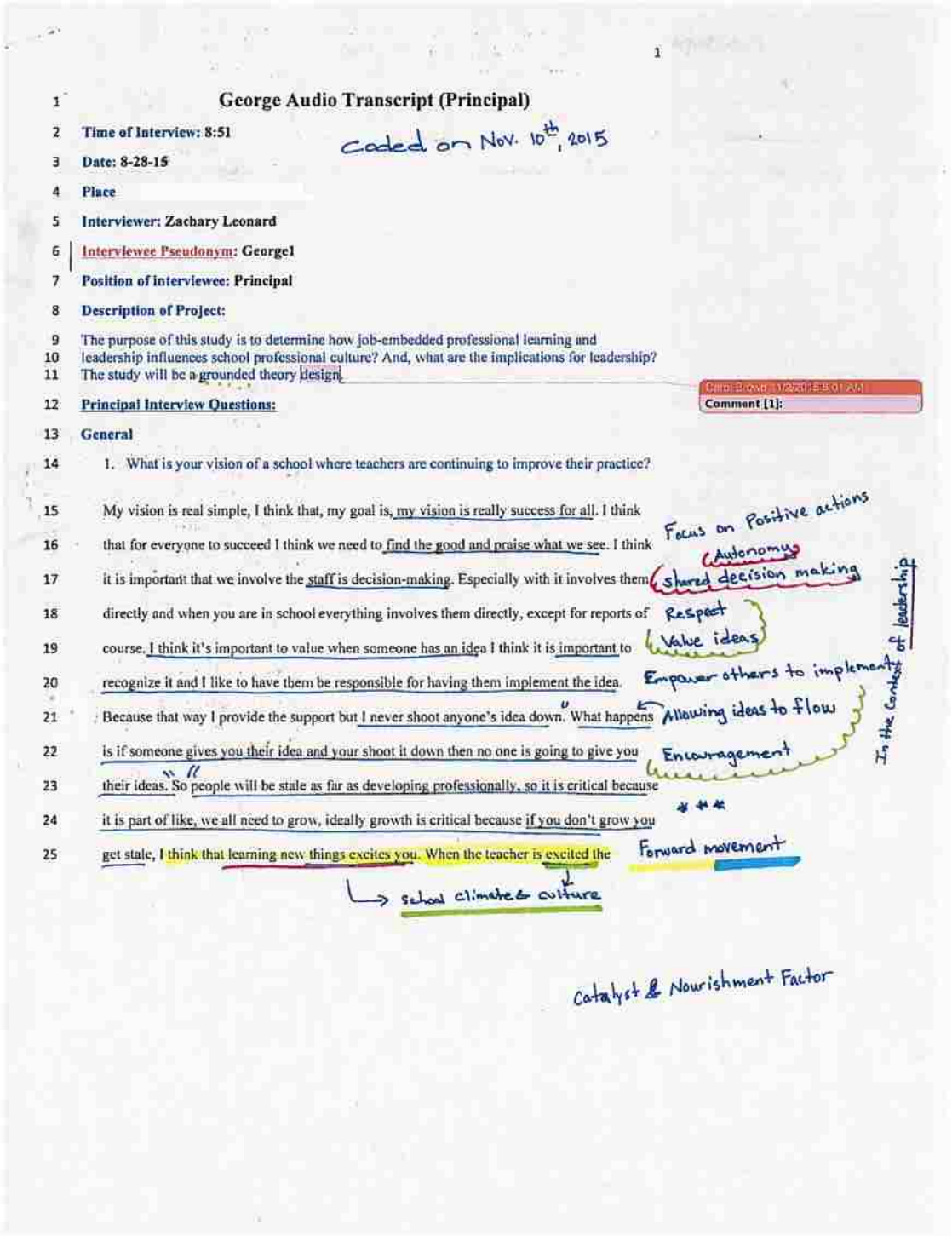
If you have questions regarding your rights as a research participant, you may call the UNM Office of the IRB (OIRB) at (505) 277-2644. The IRB is a group of people from UNM and the community who provide independent oversight of safety and ethical issues related to research involving human participants. For more information, you may also access the OIRB website at http://irb.unm.edu.

Number: 11515
Version:
Approved:
Expires:

Institutional Review Board

Appendix F

Coded Sample Transcript



1

George Audio Transcript (Principal)

Coded on Nov. 10th, 2015

Time of Interview: 8:51

Date: 8-28-15

Place

Interviewer: Zachary Leonard

Interviewee Pseudonym: George1

Position of Interviewee: Principal

Description of Project:

The purpose of this study is to determine how job-embedded professional learning and leadership influences school professional culture? And, what are the implications for leadership? The study will be a grounded theory design.

Comment [1]:

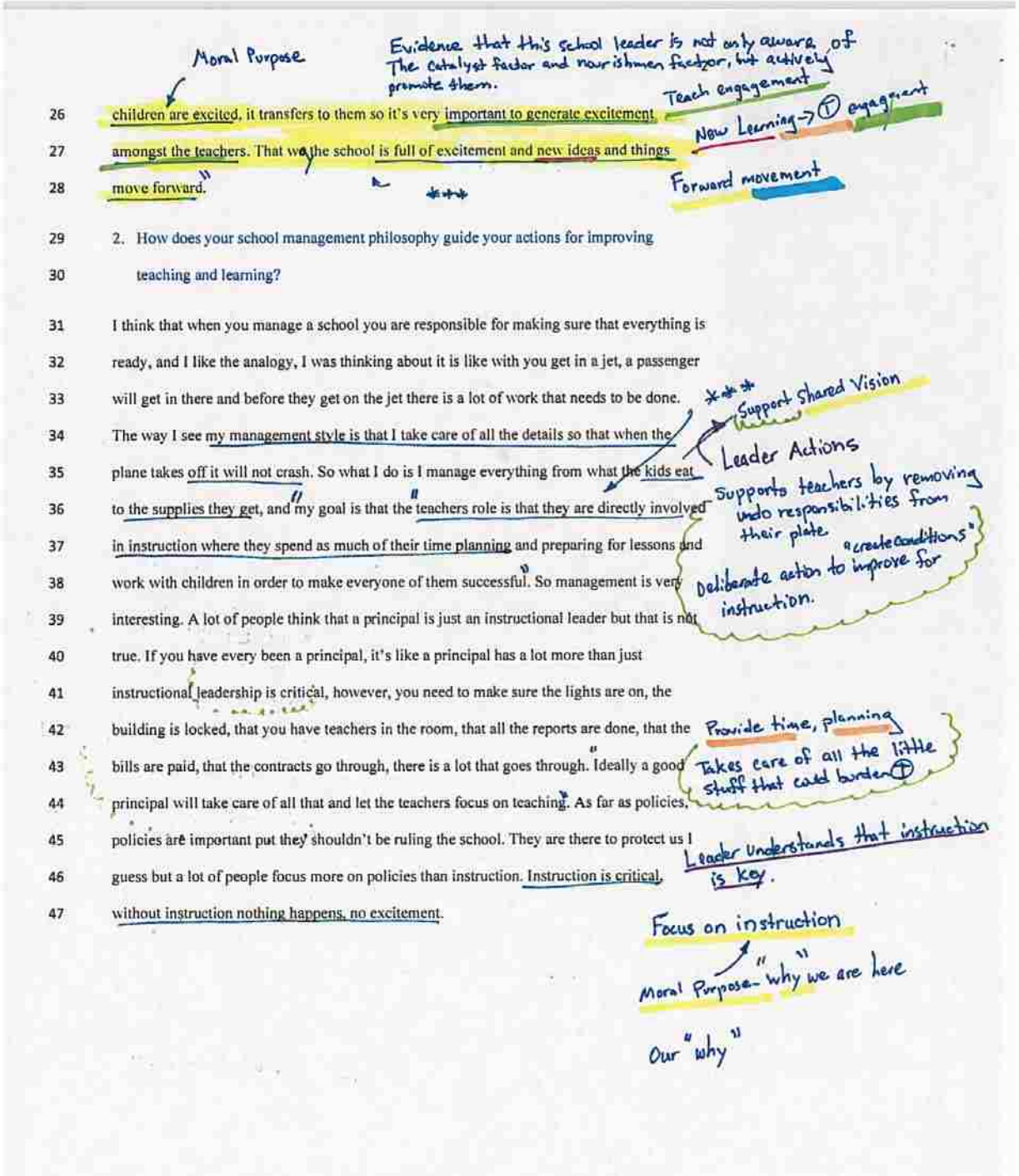
Principal Interview Questions:

General

1. What is your vision of a school where teachers are continuing to improve their practice?

My vision is real simple, I think that, my goal is, my vision is really success for all. I think that for everyone to succeed I think we need to find the good and praise what we see. I think it is important that we involve the staff is decision-making. Especially with it involves them directly and when you are in school everything involves them directly, except for reports of course. I think it's important to value when someone has an idea I think it is important to recognize it and I like to have them be responsible for having them implement the idea. Because that way I provide the support but I never shoot anyone's idea down. What happens is if someone gives you their idea and your shoot it down then no one is going to give you their ideas. So people will be stale as far as developing professionally, so it is critical because it is part of like, we all need to grow, ideally growth is critical because if you don't grow you get stale, I think that learning new things excites you. When the teacher is excited the

Focus on Positive actions
Autonomy
Shared decision making
Respect
Value ideas
Empower others to implement
Allowing ideas to flow
Encouragement
In the context of leadership
Forward movement
→ school climate & culture
Catalyst & Nourishment Factor



children are excited, it transfers to them so it's very important to generate excitement amongst the teachers. That we the school is full of excitement and new ideas and things move forward."

2. How does your school management philosophy guide your actions for improving teaching and learning?

I think that when you manage a school you are responsible for making sure that everything is ready, and I like the analogy, I was thinking about it is like with you get in a jet, a passenger will get in there and before they get on the jet there is a lot of work that needs to be done. The way I see my management style is that I take care of all the details so that when the plane takes off it will not crash. So what I do is I manage everything from what the kids eat to the supplies they get, and my goal is that the teachers role is that they are directly involved in instruction where they spend as much of their time planning and preparing for lessons and work with children in order to make everyone of them successful. So management is very interesting. A lot of people think that a principal is just an instructional leader but that is not true. If you have every been a principal, it's like a principal has a lot more than just instructional leadership is critical, however, you need to make sure the lights are on, the building is locked, that you have teachers in the room, that all the reports are done, that the bills are paid, that the contracts go through, there is a lot that goes through. Ideally a good principal will take care of all that and let the teachers focus on teaching. As far as policies, policies are important put they shouldn't be ruling the school. They are there to protect us I guess but a lot of people focus more on policies than instruction. Instruction is critical, without instruction nothing happens, no excitement.

3. When teachers are not performing at the level you think they should be performing, how do you help them? What opportunities do they have to improve?
   a. What are the formal structures?
   b. What is your role in this?

Positive Pressure / Nudge & Support

(5:15) When a teacher is having trouble, typically what I do is, I will try and go into their classroom and gather specific observations, and then whey I meet with the teacher, and usually what I will do is I will script. When you script you try and catch what is going on in the classroom without making any judgments. Of course it is an observation. And what I do is I will go in there with them and then go over the observation and as I go through the observation the teacher themselves will see, I will try and catch exactly what they are doing. And the teachers themselves will see that, oh I wasn't aware that I wasn't doing that, I wasn't prepared. That's the first step, my first step is trying to get them so see what they need help with. If they don't see where they need help they will never improve. So that is the first thing I do and then try to give them support. I refer them to different teachers and have them watch different teachers teach, and have them plan with a different teacher. So I will go through that sequence for a year or so and if things are not working out then I will start making recommendations they not be reemployed. I am not very shy about cutting a teacher loose. Unfortunately, there are teachers that have good intentions but they don't have the skills. To be a good teacher you have to have skills, you don't just become a good teacher because you like kids. And not only that, I have teachers that I found out through experience that there are teachers that don't even like kids. So no matter what you do you won't change how they feel about children so you need to have them look for another profession. Formally, just with observations and then with teacher post conferences and then in the conferences we try and find our what they need help with and then we provide them support. And, then we use all the resources we can. I never send teachers to the university classes because

Nudging through frequent observation

Non-Judgemental feedback

Facilitating non-threatening feedback

Help ☺ discover/identify their own areas for improvement

Support, using other ☺ as resources

Firm but supportive

→ Nudge & support

Hargreaves

in my opinion there is a dysfunction between the university classes and the actual classroom. Number one, the professors themselves probably haven't even been in the classroom, or if they have they probably were not successful teachers themselves in my opinion so they became professors. So formally, that is basically what I do. Peer observations are very important because the help teachers learn and grow. However, you cannot do peer observations everyday or every week. I am talking about principal observations because you could be real good once, but the goal is not to be good once. The goal is life is to be consistent all the time. When you do a peer observation you people are coming to see you so you prepare and you get ready. Now the key thing is that, it's like that old saying integrity. Integrity is doing the right thing when no one is looking.

4. Do you feel teachers in your school know much about what other teachers are doing in their classroom?

Yes they do, as far as they extent I would say that we are getting a lot stronger. But through our PLCs our teachers walk away knowing what the teachers are doing in their classroom. Specifically it has to do with instruction, with how the children are doing, not necessarily have the teacher is doing but have the children are doing. And what they see is the progression because a lot of are teacher have had the these children since kindergarten and they are just amazed what they are learning in the classroom and what their growth has been through the years. So I would say that we are getting stronger but we are strong, they know what is going on.

5. (10:37) What are your expectations for teacher collaboration? Explain.

Peer observations
GANAS
Frequent observations to put subtle pressure
Transparency
Student work provide a lens into the work of other teachers.
Feedback
student work process helps (T) stay connected to all (S) and → in the
Progressions
↳ New Learning
See Progress
belief that we are responsible for all (S)

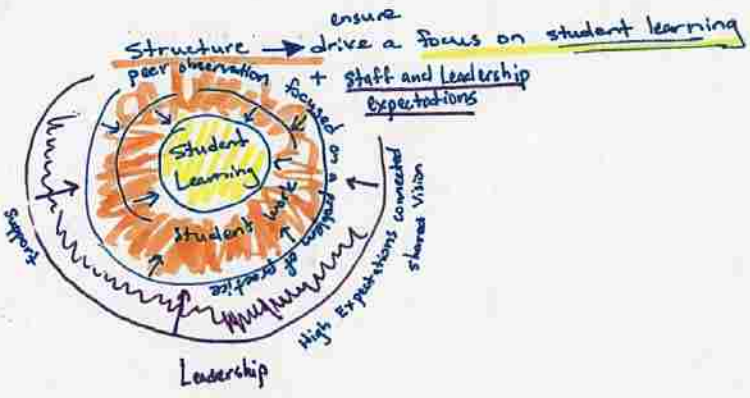
The main this is that I have to be the role model. I need to make sure that I demonstrate collaboration when I meet with people. It has to start with me, if I don't collaborate with them, they won't collaborate with each other. However, I have been schools where the principal is out in left field, out in the bleachers, and the teachers are so strong that they will be able to play the game successfully. But collaboration comes with trust, they have to have a sense that they are not alone in the classroom. They need to have a sense that we are all in it together and that we are all responsible for each child. That means that when you see something going on everyone jumps in to fix it. Or, it is important to celebrate what is going on, what kids do well. Collaboration is an interesting concept too because if you demonstrate collaboration and if the staff collaborates then they will start working with students on how they can collaborate. I feel, how do they say, it is from top to bottom. Now we talked earlier about teachers that need help, they learn that very quickly. For one, there are high expectations; everyone is expected to do work. And if I don't work they will be the same so it got to be, it starts from the top.

Model Collaboration
Trust
Collective responsibility
Intentional Celebration
Small wins
Leader actions
Need to model hard work
Expectations

6. What structures have you put in place to enable teachers to work with one another?

The most obvious one is the professional learning communities, we have been doing that for a couple of years but even before that during staff meeting our focus has always been instruction, how we can help the children do better. I have never, ever, held a staff meeting where we focus on administrative stuff. I will announce once in a while, I like to deal with stuff individually, I will remind them that things need to be done but I don't really dwell on it. I just make sure they do it, my job is to make sure they get it done. We've always focused on instruction, we have always focused on data. We have always talked about which students need help and which students need more help, and which kids need to be challenged because

Leadership
Structure in place
Focus on instruction
Deal with stuff individually
Focus on Student Learning



we have kids that are very bright and we need to challenge them. But through the PLC process I think it's the best we to get it done. Also when you do peer observations the teachers see what is going on and they take takeaways and they will try and implement stuff in their own classroom.

7. For teachers who may not feel engaged in their work what actions do you take to make them feel more engaged (for example: boost morale, productive, committed, collegial, effective, etc.)?

We do something that is very interesting, once a month we celebrate what we call souring eagles and obviously everyone will be a souring eagle. What we do is focus on all the good qualities they have and we acknowledge it. And they will get a plastic cup, George's cup with flowers in them and people will give them a big round of applause and we have cake and ice cream, and that is the first thing we do so we recognize everyone on staff. We do three per month, we post it out in the office hallway where people can see, that the first thing. The next thing is, if someone is not, this is a tough one because sometimes you have a teachers whose personality doesn't really, it's hard for them because sometimes you have a teachers home life where there husbands abusive with them where they don't get any recognition, where they have family problems, so what I try and do is try to get them to focus just of school. I focus a lot of their positive, usually when a teacher has problems I try and identify, identify what I see and then I ask how can we solve it and they come up with a solution. Solutions are best when they come from them and not from me. I try and set things up so they are the problem solver not me. I assist them but it takes a long time to build collaboration. And like I say they have to trust you and they have to know that you have their best interest. You would laugh, but I tell me staff that my job is to make them all successful.

Collaboration and learning together

Structure that create/facilitates focus on ⑤ Learning

Peer observation → new ideas

GANAS is the Organizational framework for peer coaching.

Allowing ideas to flow

GANAS

Intentional Celebration

Support

Emotional support

work toward a solution

Help ⓕ find a solution

Trust

Caring Support/ listener

Respect for individuals

** This is key – the idea that a leaders job is to help them think through the solution to their own problems. If they choose the solution they will have more motivation to pursue it.

Autonomy

Autonomy driver

and if they are not successful then I am not succeeding. They know that my job is to make them succeed so I do whatever I can, I get them whatever resources I can. I get them everything they need. I am really lucky because I have the resources, I can use them wisely. All the funds we get are spent wisely, we don't spend it on anything that isn't called for.

The Continuous Improvement Process/The Flow Channel

8. What are your school's PLC's tasked with doing? Describe what teachers do.

We share student work, the teachers first task is to provide an exemplar. We will go over the problem and the teacher will explain what is expected. After that we see if there are any questions, and then what we do is, if they have 24 students they will pass out 24 individual student work and we will pass it around and each one of us has a sheet and we will mark whether it's benchmark, partially benchmark, or not meeting. So we all look at the problems and we identify what we think it is. And as soon as we finish looking at the student work we will go through each one together and identify, like number one, the first problem, what teacher what did you grade it. So they go through and say partial or benchmark. If we disagree then we sit down and decide why we think it is partial, benchmark, etc. It is pretty interesting be cause through that we have a good discussion. Because a lot of us will change our mind and say, "oh, I didn't realize that that." To me the whole purpose is to identify which students need help so we can get them immediate help. So that is the first thing. What is interesting is that the teacher themselves will come up with, ah I need to do this different, I am going to reteach the lesson this way. Then there are takeaways; everyone comes away with a takeaway. We haven't formally identified any takeaways, which is our goal now, is to identify written takeaways when we do a PLC that's our goal. We are on a rotation system where every teacher will show student work. Make sense? And notice that everyone, usually

Leadership
Provide resources
Evidence that the principle actually participates in the PLCs
4 critical Question
1) what do we want ⑤ learn?
2) How will we know if they learned it?
3) what do we do if they didn't did?
4 " "
Collective Commitment
Team Learning
Rich discussion
New learning
Helps design intervention
Informs instruction
New learning - Take aways
Theme of team Learning
Team Learning
in
The PLC process teachers get the feed back they need to make their own course Corrections / reteach. They don't have to be told it comes naturally as part of the process.

Takes the form of a CIP but doesn't explicitly finish focus on the loop.

the lead teacher will take the lead and what's going on. And the facilitator basically, then I the principal just make sure that everything is going okay. The focus is on the student work and not on the teacher. (Zach) You participate in those often? All the time. The way you make anything important is by you being there; if you are not there then it won't be important.

Focus on student work

Principal preserve punctuates importance

↑ shared vision

9. What comes out of teachers' PLCs/work groups? How do they typically use what they learned in their classroom?

We have only been in school formally two weeks and last week we worked on English Language Arts. What we are doing is that before we start looking at student work we have to get our act together as far as what is expected. So what we did last week is we identified what skills we need to have at each grade level so we know what we are going to be focusing our work on. That's probably going to take two or three meetings and then we will decide what student work we want to look at.

Structures bring teachers together to have real conversations about student learning → new insights

10. Based on your observations, when do you feel teachers are the most engaged in their own learning? Describe.

When they take time to prepare. It's easy but you and I have talked before, if you have a teacher that comes in at 8:30 or 8:25 because they had a rough night they're not prepared, it's obvious. Because number one, if you are prepared, if you have a teacher here at 7:00 in the morning and go into there room at 7:30 and they are already busy you know they are going to have a successful day. So when they are most engaged is when they take time to prepare for their lesson. That is critical, and when you are an elementary teachers it is really hard because you have prepare for a reading lesson, a science lesson, a math lesson, whether they

Good planning → engagement

Time

do spelling, whatever, it takes a lot of preparation. You can't just walk it and do it, you have to make sure everything is ready, materials, supplies. I could say they are engage when they are in their PLCs but in reality when they are really engaged is when they take time to prepare. So as an administrator, we have to find time to give them to prepare. Because we can't keep bombarding then with being on committees and policies and doing this report and that report, they need to focus on instruction.

Engaged in PLCs

Leader Provides time to focus on instruction

The Progress Principle

11. Do you feel teachers in your school are making regular progress in their work? Explain.

Progress

I think yes, I would say yes, I have two teachers that are slow in changing. Then you get them to change and be Christmas they start dong well. Then they get momentum and then when the school year starts they are slow again. You know you put consultants in there and then sometimes you feel like you are wasting money and you say, "I am not going to even put them in there" because after ten years they still haven't changed or something like that–there behavior is really slow but you know what I mean? There is a lot to teaching. It is really complicated when you are a teacher. I think there are things that we need in a school like for example, where I am at, here, it is really important for me to have teachers that are Toa speaking, specially in grades one, and two, and three. And you know my challenge is the younger grades. But they have a lot of good qualities too, I think that if your look at them compared to a lot of teachers I think that me weakest teacher is probably an average teacher anywhere else. But at this school teachers are so strong they really are [the teachers] are low, but in reality they are probably as good as anyone else in the other schools. But what I do see is these teachers they do take time to prepare now. So it takes a while to do challenges. So, I am not sure if I answered the question. (24:22). So thinking about ensuring regular progress. And you alluded to this earlier, and you do frequent

enough observations, and they are also engaged in peer observations as well, right? Do you have clear evidence as to whether teachers are making progress in their work? Yes I do. What is very important for me is to be in the classrooms every day, they call them walkthroughs. A lot of people say your should be writing this you should be writing that. But you can't be in a teachers classroom every day and have a written comment because it won't mean anything to them. It is kind of like if you tell a girl that she is beautiful everyday after a while she probably won't listen to you, you know what I mean. You have to pick the time and place for it, where it is most effective. But I am in the classrooms every day. I see what they do, what their kids are doing, I see....when you walk into a classroom you see a lot of stuff. Who is organized, who is ready, who is having a bad day, who is having a great day. My way is, remember when I told you that it is important to have everyone succeed, when someone is down I never put them down. I am patient with them and I will see how there are going. If they are having trouble I will call them in and usually that is when I find out that they are having personal problems. And life is life and we just try and go through with it, but I pick up on stuff by just walking around to see what they are doing. And I try to do it at different times of the day. That is what is important, like peer observation, classroom observations, sometimes when they know you are going in they have a tendency to do a dog and pony show. I have been teaching a long time and I have done lots of dog and pony shows in my life. But my principal would never ever come into my classroom. I taught for eleven years and the principal never ever came into my classroom. I would have an observation, maybe once if he was good. I would sit down in a post conference and he would hand me the observation. My wife would tease me because it would sound like a bar of soap it was so good. And the key thing is that you have to be in the classrooms every day to see what is going on. And I know many people say, well I have a big school. Nonsense, when you have

Principal in classrooms every day

Frequent walkthroughs

pressure/nudge then support

Respet

Support

Encouragement

Constant observation

Frequent Walkthroughs

Clear evidence of nudge and support

Hargreaves I think profession capital

report and stuff you work on reports but then you get up and go around. I have seen principals actually try and stay away from where kids are. Especially in high schools. I have seen people that supervise on golf carts. You don't supervise on golf cart. The idea is to interact with students and when you see a group of students you don't drive by on a golf cart. You go by and say hello and that is what you do in a school, you need to be there. You need to be there, especially if they are having a bad day you need to support them. The BIE way is when something is wrong you nail the whole BIE for it, I told one of my teachers that a lot of principals use a shotgun approach to stuff. Has to do with acknowledging people, you have to pay attention to them. That means when you see a student down the hall you don't ignore them, you have to recognize them. You should say hello. You don't have to have a conversation with them, but you should recognize their presence. It is the same thing with the teachers. You need to recognize them and acknowledge them and you do that be seeing them every day. They know that I am important because George comes to see what I am doing and he asked me if I needed any help. As opposed to staying in my office.

Principal Views job as Supporter

Respect
Support
Affiliation

Teachers understand they are important

The Catalyst Factor

12. How do you support your teachers in their work?

The Nourishment Factor

13. How do you emotionally support your teachers in their work? For example, how do you make sure they feel respected, encouraged, emotionally supported?

I acknowledge their presence number one. Number two I respect them, I show them respect. I am honest with them. I never ever accuse them of anything. When there is an issue I will ask what they have heard, or and observation, or what is going on. I listen to them, I am honest with them. Whenever there is an issue or a problem I tell them what is going on and they

usually feel confortable to tell me what is going on. It is kind of interesting but a lot of it is body language. There is an administrator that will stand up say you guys are doing a good job but his body language is don't touch me. Body language has a lot to do with it. For example, like you, your body language is excellent. You and the former principal at T'siya you are approachable. Your body language is comfortable, the way your face looks, you know, when I work with teachers I remind them that whenever you look in the mirror that is what kids are seeing. I know people write books and they have labels for all of these things but it is not complicated, it is dealing with people. You have to be a people person, it is critical. And there are principals that come in and say there is a new sheriff in town, that is the worse thing you can do. Because my leadership style is not running ahead and steering. What I do is try and focus on what their goals are. Sure, I will try and influence them but we all have the same goal. Our goal is to make students successful. That is the goal, the reason I am here is to make sure everyone of them is successful, every one that I come in contact with.

Non Verbals are essential

Your mood is reflected on ☺

ensure same goals

Support ☺ in achieving their goals

→ Shared Vision

14. How would you describe your relationships with your teachers?

I would say it is professional. I don't have a singe teacher here that is my friend. I am their principal, everyone knows that. But I don't push it, I hardly stand up in front of them I try and sit with them. I never say that it is my staff I say it is our staff. I say the staff or our staff. Never use the work I and always try and use the word we. I think that I have the respect. I know that I have the respect be they have never ever had a teacher say no when I asked them to do something. I have never told anyone to do anything, I always ask them to do things. And I never ask for favors. I always ask can you do this for me. I never ask for favors because guess what, they expect something in return. But see how simple that is in language. Zach, can you do this for me. Instead of Zach would you do this. That is kind of like how you

Professional Relationship

Inclusive & Collegial Leadership Autonomy

Mutual respect

Love your employees

Respect

would treat your dog. When I was in school that is how they treated us. Stand up, line up, that's it.

The Inner Work Life System

15. Please describe workday events that you think contribute to teachers' individual performance.

Planning number one. Elaborate on the planning piece. How much time do teachers have to plan as part of their work day? Not enough, planning is real hard, when you give them time, it is really easy for people to say I have to go to the doctor I have to do this. That is the hardest part about human beings. It is really important that if you give people planning time that they take that time to plan. Because usually they will take the time to do something else. And I think that is part of human nature, so what I try and do is pump them up, I will say let's do this. For example, it today's PLC we don't have any treat or anything. But next week for the science PLC guess what we are trying to really promote science so we are going to celebrate birthdays and soaring eagles and have cake and ice cream and make it something special. So planning is critical, and they need to make sure they are organized. I think organization comes through planning. I was a gymnast and when I had a gymnastics meet I had a choice. I could either not get ready for it or get ready for it. It was not up to anyone else to tell me what to do, so I had to train for two hours a day to get ready for my competition. It is like that when you teach, you need to plan and get organized so that when you teach you can use your time effectively. There is a saying that when you work with children, the best lesson plan in the world is great until the kids walk in the room. Because you have to make adjustments. But if you are organized and you plan you can deal with that. So I think planning is essential. Of course after they plan they have to implement it so see what is going on. I good teacher manipulates environments and then they monitor what is going

Planning and Being prepared

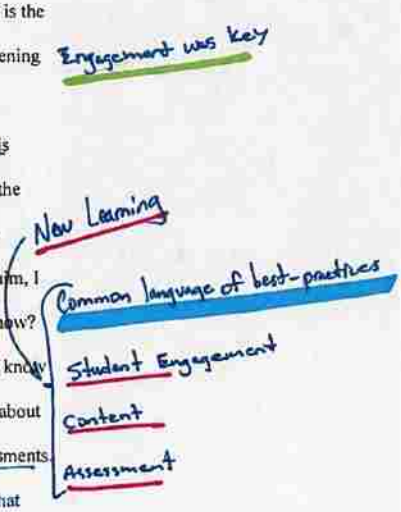
Intential celebration

Planning → good instruction → progress and goal completion → Engagement

on. They have to be able to adjust and they can't just keep going. Like in the BIE there is a gentleman who does presentations. He has been doing the same presentation for 30 years and he just takes off the power point that he has had for 12. There could be nobody in the room but he is such a good employee that he will do the Power Point by himself if he has to. Then he will turn it off and go home afterwards, it doesn't make sense if you know what I mean. You have to made adjustments because thing change.

16. How does your teachers' participation in the MSA summer institute influence their work with students and work with each other?

The strongest point I think in MSA is…there are a lot of good point, but the strongest point is the engagement piece. Engaging students in there work. I think that is obvious, I have been listening to input from principals because there is a lot that had their North Central Accreditation. Everyone of the schools did really well on student engagement and I think that is a feather is MSA's cap because that is the whole goal. Even some of the teachers, even Lorenzo, I say the change in him from three years ago, how he would make his lectures and then at the end he would say talk to your partner ask them how they solved the problem. I saw the change in him, I say the change in Lorenzo which I though was real interesting. Have you noticed his style now? So number one student engagement, number two the content, their content is stronger, they know more. Content knowledge of what math is and the processes and procedures. They learned about assessments. You would never hear anybody every talking about common formative assessments. Never, Never, never. And now people are talking about common formative assessments. That links back to the PLC work, and the collaborative work. Is that a critical component? You can talk about them in the summer and learn about them. I mean is it imperative to have a structure set up. In other words, without the structure that you have created here would people be doing



the common formative assessments? Or would people learn about them, think they are a good idea but not actually do anything about them? It is tied directly to…That is what you do in a PLC you are assessing individual student work individually. Then each teacher ….and you come to an agreement on how they did. That is a common formative assessment right there. Then the CFA's, we had a lot of work with Carol on it, they used the rubrics, an informal assessments. I think the staff is stronger on that. I think they would do it before but now they know how to do it and why. Before they would just do it because they learned it somewhere. I have one teacher that has been doing it for……he has been doing brain-based research, I forgot the guru for brain-based research. Anyway, he had been doing that stuff for many years, even before he got here. And you know who I am talking about. So we got student interaction and engagement, assessment, content, and a lot about teaching methods, best practices. "They learn about sharing with other teachers, our staff really likes that, they like the aspect of…they have the opportunity to sit and share with their colleagues from other schools. Would you say that feeds motivation? To me that is the strongest point." I didn't mention it before but the way to get teachers excited is to get them together to talk. They have to get together and talk and share ideas. That happens in schools but unfortunately it is in the teachers lounge and there is gossip." Like my goal is to keep everybody busy because if they are not busy…like me if I am not busy then I get in trouble. That is George's way. I will get in trouble if I am not busy, even at home. So what I try and do is keep people busy. If you walk around this school you will see everyone is busy. I just kind of built that culture since the time that I have been here. So I think that you have seen the same thing. I just try to involve everyone. The Edu. Techs are excited because they are involved in everything, they work hard, and they are excited. Everybody works hard. The cooks, I need to make sure that they prepare good meals so every day I do in there say what is for breakfast, what is for lunch.

PLC drive use assessments → facilitate transfer

** dialogue/discussion & sharing

** → excitement → creativity - motivation

Flow of ideas

A structure ensure conversations stays on student learning

Whereas in other schools the principals will never go in the cafeteria. Or the custodians, I pay attention to them. I will say can you do this for me. Instead of say you need to get this done right now. It is important to make sure everyone is focused and working toward that goal. Simple Hugh?

(Thank the individual for participating in this interview. Assure him or her of confidentiality of response.)