

Improvement Science: Improving Employee Engagement

by

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Improvement Science: Improving Employee Engagement

ABSTRACT

Improving employee engagement has proven elusive in too many schools and districts in our nation, persistently contributing to high staff turnover in buildings and limited employee ownership in the mission, vision, and values of a school's strategic plan. The most common approach to the improvement of educational systems has been the adoption of top-down reforms and short-lived improvement programs. In recent years, an Improvement Science approach, which originated in the medical and business worlds, has made its way onto the education scene. The impact of Improvement Science in education is a developing area in educational research. This dissertation follows PSU policy of a "multi-paper format" for the dissertation. This format includes at least three papers which may have multiple authors, an introductory chapter, and a concluding chapter. This dissertation includes four papers which are closely related to the use of Improvement Science to improve schools; an introduction that shares how traditional models of improving schools have failed to improve our schools; background on Improvement Science; and a concluding chapter.

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DEDICATION

*For all hardworking and innovative educators whose commitment is devoted to getting
ALL students to learn at high levels.*

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Chapter One

Introduction

In recent years, the Gallup Institute has identified numerous positive outcomes with having a highly engaged workforce, outcomes such as profitability, earnings per share, high customer satisfaction, productivity, and low turnover (Gallup, 2019). Consistent findings indicate the value of employee engagement in the workplace coincides with a strong interest in engagement amongst practitioners and organizational leaders (Nowacki, 2015; Studer, 2004, 2009). Logically, one might ask, "what structures do successful organizations have in place to create such high levels of employee engagement, and how is it executed at various supervisory levels in the work environment?" One of the specific areas of interest is understanding how supervisors, who occupy a critical role in a school organization and who are most proximal to employees, foster engagement among their direct reports.

Most educators acknowledge that our most profound insights come from action, followed by reflection and a search for improvement. School district leaders frequently face different situations, challenges, and problems to solve each day. Leaders must be cognizant of the need to serve a significant range of student learners, comply with state and federal mandates, uphold board policies and accountability measures, engage with employees, and serve their local communities (Rieckhoff & Larsen, 2012). Since the 2000s and the origin of *No Child Left Behind* (NCLB), these leaders have faced an increase in calls for improved outcomes, with little to no additional revenue to support it, and in addition to increased overall responsibilities for organization operations

Improvement Science: Improving Employee Engagement (Darling-Hammond, LaPointe, Meyerson, Orr, & Cohen, 2007). A failure to effectively address student achievement or operational issues is a costly mistake in education. The public now has a vast array of learning options from which to choose. To remain a competitive and valuable schooling preference, school district leaders must resolve issues and show meaningful improvement in areas of deficiency (Fullan, 2001).

Implementing a systems approach to school improvement represents a true definition of a learning community and acts as the antithesis of a culture based on individual isolation. Improvement Science (IS), through a systems thinkers' lens, focuses on the interdependent relationships and interactions among teams of people. This means involving everyone in the system to express their aspirations, building awareness, and develop their capabilities together (Senge, 2012).

After synthesizing over 800 metadata analyses on the factor that most impacts student achievement, Hattie (2009) concluded the best way to improve schools was to organize employees into collaborative teams. Although teams are conducting this work together, student achievement across the United States continues to remain stagnant. Many educational experts have analyzed new ways for school leaders to close the gap and surmount the all too daunting task to become high performing schools.

Improvement science (IS) is a promising framework for bottom-up reform that equips educators with the methods and tools to address these three needs. Drawing inspiration from diverse disciplines including design thinking (Kelley & Kelley, 2013), continuous improvement (Deming, 1993), and lesson study (Doig, & Groves, 2011), IS, as conceived by Bryk et al. (2015), provides school leaders and teachers with methods and tools to explore the root causes of instructional challenges they face in the classroom,

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create a shared vision for how best to solve them, and to engage in iterative cycles of inquiry to learn quickly and scale practices that work well.

The Need for a Different Type of Reform

To tackle the difficult challenges of engaging employees while preventing leader burnout, reform efforts must shift from top-down mandates to a model that situates the power for change with those closest to issues of inequitable student outcomes (Darling-Hammond, 1994). Top-down reform efforts often suffer from a lack of employee support and fail to address the following three areas of need: (1) the need to foster inquiry; (2) the need to promote collaboration across the entire organization; and (3) the need to develop professional knowledge. Consequently, organizations have begun investing in supervisors' development to encourage employee engagement, assuming that supervisory behavior changes will significantly engage employees (Gallup, 2019). Despite growing investments in supervisor development, limited research exists on the impact the employee engagement strategies have on supervisors and leaders. This multi-paper dissertation proposal addresses the need to examine leaders who use improvement science tools in educational organizations to increase employee engagement and, thus, improve schools.

Background of the Problem

The civil rights era highlighted disparities in student achievement. It also exposed the compounding issue that across districts and even schools, there was little consensus on exactly what students should be achieving or how best to measure achievement. States set about developing standardized tests to hold schools accountable for student acquisition of content knowledge. Perhaps the most influential report leading to the

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current state of accountability reforms was *A Nation at Risk* (1983). The authors of the report squarely placed the blame for the "rising tide of mediocrity" being produced from America's schools and the assured doom for the country's global competitiveness at the feet of educators (United States, 1983). This report provided a launching pad for the federal government to enter the educational domain in a way that had hitherto been avoided. The decades that followed saw an unprecedented concentration of power at the level of state and federal education departments.

Federal Laws

Despite a call for a bottom-up approach to reform efforts with top-down support, which would locate reform initiatives with those who were closest to students and best positioned to develop a professional knowledge base (Darling-Hammond, 1994), the federal government enacted *No Child Left Behind* (NCLB), legislation that updated the Elementary and Secondary Education Act of 1965 (NCLB, 2002). The 1965 Elementary and Secondary Education Act was designed to provide financial assistance in the form of Title I funds to local education agencies to support the education of students from low-income families and students with disabilities. NCLB used Title I funds as a financial lever to require that states develop standards-based accountability measures to ensure schools were meeting Adequate Yearly Progress (AYP) for all students (NCLB, 2002; Bloomfield & Cooper, 2003). AYP was based on yearly student achievement goals measured by state-based standardized tests culminated in all students achieving grade-level reading and math proficiency by 2014.

This top-down mandate resulted in a narrowing of the teaching curriculum, particularly in urban schools that were the most at risk of having their students fail to

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meet AYP (Elmore & Elmore, 1996). In some cases, teachers were required to 'teach' daily scripted lessons that marched through the standards, virtually eliminating professional agency (Cochran-Smith & Lytle, 2006).

In a scathing report on NCLB, Elmore (2004) astutely calls attention to the assumptions about educators embedded in the legislation:

Underlying [NCLB] was a sense that the key problem was motivational and that by tightening the strings, incentives would be clarified, and school personnel would find a way to increase scores – or else (p. 243).

Proponents of high-stakes accountability tests were operating on the assumption that the problem stemmed from a lack of teacher effort. However, despite the lofty NCLB goal to have 100% of students performing at grade level by 2014, the reality was quite different. At the end of 2013, fewer than 50% of students were proficient in reading and math, and in some states, upwards of 70% of schools were failing to meet their AYP goals (NEAP, 2015). An alternative view is that "the key problem is not a lack of effort, but lack of skill; the people in the schools are the solution, not the problem" (Mehta, 2013, p.261). This view is supported by the fact that at the end of the decade of NCLB reforms, there were no sustained generalizable gains in student achievement and no evidence found to support the hypothesis that high-stakes accountability policies, if continued, would improve student outcomes and close the achievement gap (Lee & Reeves, 2012; Mathis, 2010).

During the decade of NCLB, teachers were held to standards born out of individualistic notions of agency, and educators and academics criticized the legislation

Improvement Science: Improving Employee Engagement for de-professionalizing teaching and ultimately under-serving students (Cochran-Smith & Lytle, 2006):

NCLB's conceptions of teachers and teaching are flawed – linear, remarkably narrow, and based on a technical transmission model of education, learning, and teacher training that was rejected more than two decades ago and that is decidedly out of keeping with contemporary understandings of learning. (p. 669)

Teachers who felt their professional responsibility encompassed supporting students' socioemotional development and their academic progress felt constrained by the increase in content to be covered under NCLB (Lasky, 2005). The negative political climate decreased resources, and strident consequences for failure to comply damaged their ability to form important relationships with students and increased personal feelings of failure as they struggled, along with their students, to meet the externally imposed mandates (Lasky, 2005).

School-based structures were found to mediate how teachers reacted to the demands of NCLB. Pre-existing school cultures and how schools defined successful teaching and learning shaped the professional positions open to teachers, with more pedagogically progressive institutions providing more opportunities for teachers to flexibly adapt (or not) to the increased demands of the state tests (Buchanan, 2015). These findings suggest that resisting pressures to comply with externally mandated reforms requires a strong collegial and collaborative vision of teaching, which doesn't always match the "dominant frame of teaching as an individualistic, isolated endeavor" (Buchanan, 2015, p. 714).

Improvement Science: Improving Employee Engagement **Emergence of the Common Core**

During the decade of NCLB, each state was responsible for creating standards to determine student achievement. These different standards varied considerably and made it difficult to compare student results from one state to another (Taylor, 2010). In 1996, the National Governors Association and the Council of Chief State School Officers founded Achieve, Inc., an "independent, nonpartisan, nonprofit education reform organization dedicated to working with states to raise academic standards and graduation requirements, improve assessments, and strengthen accountability" across the country (Achieve, 2016). Achieve hired David Coleman of the College Board and other educational research analysts interested in "achievement based" assessment standards to create the Common Core, a set of national standards that could be adopted by all states. In 2010, the Common Core was released and adopted by 45 of the 50 states. Once again, teachers were held to a standard developed by those far removed from their classrooms and were expected to adapt their teaching to meet these new goals.

The Common Core is a continuation of the different conceptualizations of agency afforded to students and teachers. Student achievement is inextricably linked to their environment, in which teachers play the most significant role. Therefore, aligning with the student agency's sociocultural view, teachers are viewed as a systemic factor responsible for student success. Teachers are not afforded the same sociocultural understanding of agency and are instead held personally accountable for student achievement.

Improvement Science: Improving Employee Engagement **Common Core State Standards**

Educational standards are not new. Every state has had grade-level academic standards for decades. Standards are in place to ensure that students in every school will acquire the knowledge and skills critical to knowledge and success in life (Baule, 2013). In the past, vast differences in educational expectations existed across states. A 2010 study by the American Institute of research documented a huge expectation gap, with some states expecting their students to accomplish far more in school than other states with much lower standards (Phillips, 2010). Until recently, this patchwork of high and low standards that varied from state to state had few consequences because students could obtain jobs in their local community without high levels of education. The situation is much different today. Local economies in many parts of the country have seen radical transformation.

The Common Core Standards are an attempted response to the new realities of the US economy. The purpose of the Common Core Standards is to ensure that all students are able to be successful in a society that is changing at a remarkable pace. Several statistics show that this need to better prepare students for college is an urgent one. The American College Testing Organization (ACT) annually publishes a report on the number of students taking its college readiness benchmarks. In 2013, 54 percent of all high school graduates took the ACT, and only 26 percent of test-takers reached the college-readiness level in all four areas tested (English, reading, mathematics, and science) (ACT, 2013). These numbers reveal a glaring gap in the nation's educational system. No matter how recently earned, a high school diploma doesn't guarantee that students are prepared for

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college courses. Most colleges place students in what are called remedial courses in math or English before moving on to a full load of college-level courses. This process is a financial drain on students and colleges, and taxpayers, costing up to an estimated 7 billion dollars a year. During the 2014-2015 school year, 209 public four-year universities placed more than half of incoming students in at least one remedial course ("Most Colleges Enroll Many Students Who Aren't Prepared for Higher Education," 2017).

With this backdrop of students' lack of preparedness for college and careers, governors and state school executives began talking about ways for a common set of grade-level standards. These standards' development was guided with one goal in mind: to prepare students for college and careers. Because of this focus, the standards were designed from the 12th grade down. Almost every state compared its previous standards with the Common Core State Standards to identify commonalities and differences. The authors of a 2010 study sponsored by the Thomas B. Fordham Foundation concluded that the Common Core State Standards are more rigorous than the vast majority of previous state standards (Carmichael, Sheila, et al., 2010). The Common Core State Standards' implementation has become extremely controversial and not supported by many politicians, state leaders, educators, and families.

Smarter Balanced Assessment Consortium (SBAC)

In 2010, the Smarter Balanced Assessment Consortium was created to measure students' proficiency in the Common Core State Standards. This assessment's ultimate goal was to truly measure students through the Common Core and increase the number of students who are well prepared for college and careers. This effort began with the

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recognition that most state assessment systems were disjointed, outdated, and did not offer a cohesive set of tools to help educators improve teaching and learning. Due to the depth and rigor of this assessment, schools began spreading the message to families that the Smarter Balanced test would be a much more accurate and complete reflection of what students know and can do than past exams and will, in turn, better inform classroom instruction (Ujifusa, 2015).

Smarter Balanced has reached its third anniversary in California, Oregon, and Washington, and scores continue to remain low and stagnant. In California, during the 2016-2017 school year, about 3.2 million students in grades 3 to 8 and 11 took the tests. 48.5 percent of California students tested proficient in English language arts, a half percent drop from the 2015-2016 school year (Fensterwald, 2017). In Math, 37.5 percent of students were proficient, which was about a half percentage point increase over a year ago (Fensterwald, 2017). The combinations of minor gains and losses put students 4.6 percentage points above 2015. But flat scores in 2016-2017 compared to the years before also meant little progress in narrowing the achievement gap between the lowest and highest performing student groups. The achievement gap also continues to slide among historically underserved students. Only 31 percent of African-Americans and 37 percent of Latino students met or exceeded standards for English language arts in 2016 – 2017 (Fensterwald, 2017). Oregon performed even worse in the 2016-2017 school year, dropping 1.8 percentage points in English language arts (ELA). Oregon had the second-largest decrease in ELA behind Vermont, which fell four percentage points (McRae,

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2017). Oregon's students fared no better in math standards, dropping one percentage point from the year before (McRae, 2017).

As teachers struggled to increase student achievement on the Common Core through the Smarter Balanced Assessment, they also continued to receive little if any support from federal, state, and local politicians. Of the 41 states who initially adopted the Smarter Balanced assessment, only 14 remain. Colleges and Universities who claimed to champion Smarter Balanced testing results have continued to only use SAT and ACT tests for course placement and seldom even acknowledge the SBAC when considering placement (Gewertz, 2017). In Fact, in 2020, seven Ivy league schools have announced they will no longer be using the SAT test as a metric for admission (Hess & Johnson, 2021). The Common Core became a favorite target during the 2016 presidential election. On April 4, 2016, presidential candidate Donald Trump pledged an end to the Common Core to bring educational authority back to the local municipalities ("Trump Vows to Tackle Common Core, Return Education to Locals," 2017). While resistance to the Common Core has been most visible among Republicans, particularly in the party's base, a Wall Street Journal poll released in 2014 suggests that GOP voters are evenly divided over the standards. Forty-five percent of conservatives support it, while forty-six percent are opposed (Summers, 2014).

Amidst this national political storm regarding common standards, wavering state support for the Smarter Balanced Assessment, and lackluster student achievement results, what remains to support the teachers and their unwavering commitment to their students? Rick DuFour would argue that the answer is their fellow teacher colleagues. But with each year bringing new educational trends, be it "viable curriculum," "growth mindset",

Improvement Science: Improving Employee Engagement or “personalized learning,” teachers and building administrators errantly grasp and implement shallow visions for inconsistent and unproven trends and while ignoring contextual realities that require adaptation of strategies that work elsewhere. It is abundantly evident from the data presented nationwide that teachers remain at a gridlock when increasing student achievement and preparing students for college and careers. How are teachers able to indeed raise the bar and close the gap for each of their students? This paper will discuss a systems thinking approach for establishing a culture of high functioning professional learning communities that focus on improvement within a school or district’s context.

The Three Missing Components in Current Reform Efforts

The emphasis on accountability and stakeholder of school district performance has created a need for leaders to improve. Current reform efforts fail to address the three areas of need: (1) the need to foster inquiry, (2) the need to build collaboration among stakeholders, and (3) the need to build a pedagogical knowledge base; and (4) the need to understand the problem and taking action. Reform efforts that foster inquiry and support collaboration have the potential to improve employee engagement, develop leaders, professionalize teaching, and ultimately improve outcomes for students.

The Need to Foster Inquiry

Change often comes from a desire to improve. Data from NCLB, the Common Core, and other standardized tests have highlighted the persistent achievement gap. However, acknowledging the problem does little to provide guidance about how actually to improve the day-to-day aspects of teaching and learning. In *Getting to Scale with Good Educational Practice*, Elmore and Elmore (1996) point out:

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The feedback teachers receive on the effects of their practice usually comes in the form of generalized test scores that have no relationship to the specific objectives of the new practice. In other words, the conditions under which teachers are asked to engage in new practices bear no relationship whatsoever to the conditions required for learning how to implement complex and new practices with success. Why would anyone want to change their practice under such conditions? (p. 24)

In order to make progress on developing effective teaching practices, a different type of data is needed: data for improvement (Bryk et al., 2015; Elmore & Elmore, 1996). Standardized test results, disseminated long after students have left a particular classroom, is data for accountability and has little value for effecting change.

Data for improvement is actionable data that can be collected and analyzed by those close to the work in order to assess the effectiveness of a particular process or intervention. If we want to determine what structures work best for employees, for whom, and under what conditions, we need to enlist employees' help, i.e., those who actually *do* the work. Reform efforts that support employee inquiry, recognizing them as knowledge creators – agents that synthesize and integrate relevant information from different contexts into their own practice – are needed to help employees take ownership of their own improvement process (Cockburn & Haydn, 2003; Studer, 2004; Studer & Pilcher, 2015).

Reforms that focus on cycles of inquiry promote ownership of both the knowledge and process in which new knowledge about teaching and learning is gained (Bodman et al., 2012). However, it is not enough to only focus on individual inquiry; in

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order to generate a shared knowledge base, leaders will need to share information and try out each other's practices to determine if they work in their context.

The Need to Promote Collaboration

Isolation has been identified as a significant barrier to implementing effective reform efforts (Eisener, 1992). Effective practices are often developed by individual teachers but fail to scale past a few classrooms, if at all. Reforms that reduce isolation and build learning communities have emerged as one way to spread effective teaching practices (Gomez et al., 2015). Collaboration and opportunities for dialog help create a shared vision of teaching and learning. These collegial relationships serve as a structure to promote the development and spread of effective teaching strategies and develop a shared understanding that allows employees to push back on reform efforts that feel inauthentic or inefficient to meet their learning goals (Buchanan, 2015).

The Need to Develop a Professional Knowledge Base

In order to maintain decision-making power within an organization, employees need to have a shared knowledge base delineating the boundaries of the profession. A shared understanding of how learning occurs and its dependence on the individual, the collective group, and the learning environment is an important framework for developing solid pedagogical practices and classroom structures that promote student achievement and equity (Fullan, 2001). Challenges to developing a shared knowledge base include employees' past experiences and current beliefs about their work's purpose and the isolated nature of the job. Each school employee brings a unique perspective and set of goals to their practice. At times, those goals are at odds with the broader institutional and

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cultural conversations around education's purpose (Studer, 2009). Since shared knowledge is co-constructed, creating a unified goal such as equitable student outcomes requires ongoing dialog and collective consideration (Biesta et al., 2015; DuFour et al., 2016; Studer & Pilcher, 2015).

Improvement Science Approach to Address Complex Problems

The adoption of an Improvement Science (IS) approach to leading organizations and improving employee engagement has gained popularity in education. It keeps leaders in a mindset and fosters short cycles of improvement rather than relying on fixed and sporadic strategies (Dunaway et al., 2014). Application of IS cycles of improvement in educational organizations has been attributed to cultivating strong employee teams, creating systems of problem-solvers, and implementing efficient strategies that ultimately lead to cost-saving measures within school systems (Sparks, 2018). The development of IS orientation to problems and change is a promising way for educational leaders to tackle the shifting landscape.

As with IS methodologies used in the medical profession, this framework in educational organizations guides leaders through the processes of using data to identify improvement opportunities, collective or shared ownership, and areas to recognize and reward success (Studer & Pilcher, 2015). Leadership practices that incorporate data analysis to inform improvement processes are more equipped to address barriers (Langley et al., 1996) efficiently. The collection of data is an insufficient organizational improvement strategy (Bryk et al., 2015). Collaborative discussion of data, understanding root cause problems, and developing collective solution-oriented actions. A critical aspect of a structured

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process helps leaders identify the best steps to impact positive organizational outcomes

(Bryk et al., 2015; Senge, 2012). The complexity of issues educational leaders face requires applying the most appropriate strategy to the situation (Fullan, 2001).

Conducting short cycles of improvement provides data-based direction for leaders and builds overall leadership skills in systematically addressing issues.

IS offers a way to address school reform through a "bottom-up" process (Bryk, et al., 2015). Bryk's conceptualization of improvement science as a promising framework, including a set of methods and tools, for bottom-up reform. Borrowing from the design industry, Bryk envisioned individuals at any level within a system using the tools of improvement science to tackle localized problems of practice to learn quickly on a small scale and gather evidence of success. Once a practice is evidenced to work in one context, it can be shared through collaborative learning communities to be tested in other contexts. In this way, those closest to the problem are instrumental in the problem-solving process, and reform occurs from the bottom up rather than from the top down.

New to educational contexts, Improvement Science has its roots in the healthcare industry, where it has been used to significant effect to reduce variability in care and improve outcomes for patients (Hannan, Russell, Takahashi & Park, 2015). Recognizing that variation in patient outcomes is likely a manifestation of the different contexts in which care is provided, Dr. Paul Batalden of the Institute for Healthcare Improvement is quoted as saying, "every system is perfectly designed to get the results it gets" (p.98). From this perspective, it can be appreciated that improvement science is used to help improvers see their system for what it is to systematically dig into the root causes of their problem and identify high-leverage areas to target for improvement. Improvements, or

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change ideas, are implemented on a localized scale using quick, iterative Plan-Do-Study Act (PDSA) cycles. Data for improvement is collected to determine whether the change idea should be abandoned, adapted, or adopted. The goal is to fail early, and therefore cheaply, to learn quickly.

IS provides educators with methods and tools to engage in inquiry around improving teaching and learning, collaborating to share promising practices, and learning from variation and scale practices that lead to improvement (Bryk et al., 2015).

Improvement science replaces top-down reform initiatives that strip educators of their professionalism with a localized strategy for improvement that situates control over the educator's practice. By focusing on the local context where teaching and learning occur and attending to variation through collaborative networks, improvement science provides a powerful tool for teachers to explore and adapt existing craft knowledge and research, and adjust those pieces that are contextually useful into a useable, evidence-based set of pedagogical tools to aid their profession and consequently improve student achievement.

IS seeks to answer the question, "What works, for whom, and under what conditions?" This question necessitates that educators adopt an improvement mindset and engage in inquiries related to their classrooms and schools. Six principles have been identified that are helpful to guide improvement science work in education (Bryk, et al., 2015). These are: (1) make the work problem-specific and user-centered, (2) focus on variation in performance, (3) see the system that produces the current outcomes, (4) you cannot improve at scale what you cannot measure, (5) use disciplined inquiry to drive improvement, and (6) accelerate learning through networked communities.

Employee Engagement

Improvement Science: Improving Employee Engagement

Engagement can best be defined as individuals giving all of themselves to their work (Kahn, 1990). Alfie Kahn (1990) proposed that engagement is "the harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances" (p.694). The emergence of organizations' intense focus on employee engagement is not unfounded; there are numerous

Organizational benefits associated with employee engagement and recent research suggest there is a considerable cost associated with unengaged employees. For example, the Gallup Organization (2012) estimated that nearly seventy-one percent of the working population is unengaged and that the prevalence of unengaged workers comes at quite a cost for organizations. Associated with high-profit margins, productivity, customer satisfaction, and safety (Nowacki, 2015), employee engagement has also been associated with essential work attitudes and performance behaviors, such as organizational commitment (Saks, 2006), organizational citizenship behaviors (Saks, 2006), low turnover intentions (Saks, 2006; Schaufeli & Bakker, 2004), and job performance (Bakker & Bal, 2010).

Teacher Burnout

In 1986 Maslach and Jackson defined burnout as a three-dimensional concept: emotional exhaustion, loss of a sense of personal accomplishment, and depersonalization (Maslach & Jackson, 1986). Emotional exhaustion includes teachers' tiredness. When teachers' emotional resources are drained, fatigue develops, and depersonalization occurs. The role of a teacher is arguably amongst the most demanding. Teachers experience more

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and more the need to cope with many demands of an uncertain society and high stakes

expectations. All of these factors contribute to high levels of burnout among teachers. It seems the national focus is on everything in education that is not working (Manju, 2017). On average, one-third of teachers leave the profession within five years (Farmer, 2017). Teacher burnout is blamed for the short term tenure. When teachers are stressed, it affects their quality of life and well-being and impacts their teaching performance, which in turn, directly impacts their students' academic performance.

All too often, across the country, teachers work in isolation from one another. They view their classrooms as their domains, have little access to their colleagues' ideas or strategies, and prefer to be left alone rather than engage with their fellow teachers or administrators (DuFour, 2010). Their professional practice is shrouded in a veil of privacy and personal autonomy, and it is not subject to collective discussion or analysis (DuFour, 2010). Many schools offer little to no infrastructure to support collaboration or continuous improvement, and this very structure serves as a force for preserving the status quo. Teachers who work in isolation are subject to greater responsibility, increased workload, and lack of exposure to mentorship and collegiality (Manju, 2017). In 2014 The New Teacher Project (TNPT) reported that almost sixty-six percent of the nation's best teachers continue to leave the profession for careers elsewhere (Chartock & Weiner, 2014). Losing a high percentage of our most skilled teachers directly and negatively impacts our student achievement. Teachers can take essential steps to prevent burnout. Rick Dufour (2010) explains that time spent in collaboration with colleagues is considered essential to success in the teaching profession (DuFour, 2010). Collaborating

Improvement Science: Improving Employee Engagement with others is a condition for membership. When schools are organized to support the collaborative culture through a professional learning community, teacher teams work together to share the workload and ease the burden. They work interdependently to pursue a common purpose and goal (DuFour et al., 2016). They share their expertise and make that expertise available to all of the students served by the team rather than the classroom teacher alone.

Teacher burnout has a direct impact on student achievement. If 33 % of teachers are leaving the profession within five years, it is evident that the system that promotes isolation needs to be assessed with scrutiny. Retaining the education profession's talent could help school communities contribute mightily to closing the achievement gap in the United States (DuFour, 2010; Farmer, 2017).

Leading a school district, department, or building is a complicated, multifaceted endeavor requiring a deep understanding of research-specific content knowledge, pedagogy, and the needs of a diverse employee and student populations. Most professions that require such a breadth of knowledge and skills have a clearly defined knowledge base and internally controlled structures to monitor the profession's boundaries (Mehta, 2013). However, despite the breadth of knowledge and skills required to become an effective school administrator, educators have struggled to develop a clear set of improvement practices that work across varied levels and departments of a school district and with all types of employees and learners. As such, they have remained vulnerable to pressure from outside interests and external accountability measures.

Purpose of this Multi-Paper Dissertation

Improvement Science: Improving Employee Engagement

An Improvement Science (IS) approach to addressing employee

engagement in educational organizations offers an opportunity for lasting benefits that other change efforts cannot provide. Systematic consideration of the processes, inquiry cycles, collaboration, and professional knowledge to support improvement is necessary for the actions to be continuous (Langley et al., 1996). Implementation of IS tools provides leaders with a systematic framework and skills to utilize when employee engagement challenges and gaps arise.

This multi-paper dissertation proposal addresses the need to examine the Improvement Science processes and tools used by leaders in educational organizations to increase employee engagement. This multi-paper dissertation requires only three papers; however, I am including four papers for consideration.

The first paper, co-authored with Deborah S. Peterson entitled “Using Improvement Science in Professional Learning Communities: From Theory to Practice” discusses how the DuFour model of Professional Learning Communities leads to improved employee engagement and increased student engagement. This paper was written in 2019 and highlights the experiences of teachers and leaders using Improvement Science tools and processes in a small, rural school district in the Pacific Northwest (Carpenter & Peterson, 2019).

The second paper, co-authored with Kathy Oropallo entitled “Aligning Values, Goals, and Actions to Build Leadership Synergy to Achieve Desired Results” (Carpenter & Oropallo, 2021) discusses using Improvement Science methodology to develop a

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school culture of excellence in the Cascade School District, a small, rural district in the
Pacific Northwest.

The third paper, in which I am the sole author, was published in April, 2021, in
School Administrator (Carpenter, 2021). This paper is entitled “Building Resilience in an
Organization” and discusses using Improvement Science to lead an organization through
a crisis, in this case, leading through a global pandemic.

While the PSU multi-paper dissertation requires only three papers, I am also
submitting a fourth paper which has been accepted for publication in 2022 (Carpenter,
2022). I submit this paper as further evidence of meeting the requirements of the multi-
paper dissertation for the College of Education EdD. This paper is entitled “Engaging
Historically Underserved Students in Comprehensive Distance Learning During a
Pandemic and Wildfire.” The paper discusses the use of Improvement Science strategies
and tools in a middle school setting.

Finally, I will submit in Chapter Three a proposal for a qualitative study. While
the multi-paper dissertation does not require that the study be conducted, I submit it as
evidence of my ability to conduct such a study.

Key Terms

Collaboration represents a systemic process in which professional teams work
together interdependently to impact their practice in ways that will lead to better results
(DuFour et al., 2016).

Building shared knowledge means learning together. Members of professional
learning communities should attempt to answer critical questions by first learning
together. They engage in collective inquiry to build this shared knowledge. Dufour (2016)

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explains that this collective study of the same information increases the likelihood that members will arrive at the same conclusion. (DuFour et al., 2016). Members of a PLC, by definition, will learn and grow together.

Systems Thinking is a way of understanding reality that emphasizes the relationships among a system's parts rather than the parts themselves. It is also concerned about the interrelationships among components and their relationship to a functioning whole. The focus is on seeing the underlying patterns and deep structures to system trends and events (Senge, 2006).

Causal loops are the circular interactions among parts or components of a system. (Senge, 2006). Balancing feedback is when two subsystems interact to dampen the output of the other. Reinforcing feedback occurs when two subsystems are amplifying or magnifying each other's output (Senge, 2006).

Mental model is an explanation of someone's thought process about how something works in the real world. It is a representation of the surrounding world, the relationships between its various parts, and a person's intuitive perception about his or her own actions (Lannon, 2016).

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CHAPTER TWO

Literature Review

This multi-paper dissertation uses the tools and processes of Improvement Science (IS) to examine employee engagement in school improvement. The first section of this chapter describes the origins of IS and how the approach has been studied over time, including examples of IS across industries, particularly in the medical field. The next section of the chapter highlights the transfer of IS efforts to education. The third section includes a critique of IS, including a critique of methodological literature and overview of the papers submitted for this multi-paper dissertation proposal.

Improvement Science (IS) is a solution to this problem of practice: the current educational research infrastructure is not doing enough to improve our nation's schools (Bryk, 2009; Bryk & Gomez, 2008; Bryk, Gomez, & Grunow, 2011). Critics of current educational research argue that research is frequently disconnected from practice (Bryk et al., 2015; Jones et al., 2015) and does not scale across contexts (Bryk, 2009; Bryk et al., 2011, 2015). To enable educational research to be more relevant, some scholars argue that academic research should be conducted by teams of scholars and practitioners together and should focus on improving problems of practice (Bryk et al., 2015; Daley, 2017; Senge, 2012). This section aims to describe the history and philosophy of IS, to acknowledge criticisms of bringing IS and related ideas into education, to present some of the tools of IS, and to discuss successes of IS both inside and outside of education.

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Origins of Improvement Science

While IS is relatively new to education, IS has a rich theoretical foundation in other fields. Key researchers of organizational behavior who support concepts of IS include the learning organization (Senge, 2006), double-loop learning (Argyris, 1991), C-level learning (Englebart, 2003), Edwards Deming (1986), industrial quality and variation (Shewhart, 1925, 1926), quality management (Juran, 1956), and total quality management (T. Powell, 1995; Schmoker & Wilson, 1993b).

Morgan (2006) identified multiple metaphors that may be used to understand organizations better. Prior to recent philosophical shifts that support the use of IS to improve organizations, the dominant view of organizations throughout the 20th century was as machines to be optimized. This view was articulated and developed by Frederick the Great of Prussia in the mid-1700s and Frederick Taylor in the early 1900s (Jones et al., 2015). This perspective came to be known as scientific management and includes ideas such as (a) managers are responsible for thinking while workers are responsible for doing; (b) find the most efficient and precise way to complete a task; (c) select and train workers on the job; and then (d) monitor workers to ensure compliance (Jones et al., 2015). Scientific management has been critiqued as creating organizations that are rigid bureaucracies that develop employee apathy and encourage passivity, and as a result, other competing theories of organizations developed (Daley, 2017).

In opposition to viewing organizations as optimizable machines, a competing metaphor views organizations as brains: flexible, resilient, and innovative learning organizations (Morgan, 2006; Senge, 2006). If considered in this way, organizations may

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be understood to learn how to learn (Morgan, 2006). Argyris (1991) described learning as detecting and correcting errors. Frequently, when an error is discovered, people will attempt to make a change that does not question the "goals, values, plans and rules" of the normal operations of the organization (Mark Smith, n.d.). This type of response is called single-loop learning (Argyris, 1991).

In contrast, double-loop learning requires questioning the fundamental ways an organization operates; double-loop learning requires the organization to learn how it learns (Mirvis, 2006). Relatedly, Engelbart (2003) argued that for any organization, there are three domains of activity related to improvement. A-level activity is the core activity of the organization. In K-12 schools, one example of an A-level activity would be teaching and learning. B-level activity is the part of the organization concerned with how to get better at an A-level activity. In K-12 schools, B-level activity could be professional development for teachers, including the people, systems, and resources focused on helping teachers get better at the core A-level teaching and learning activity. Engelbart believed there is an additional level of activity possible in organizations: C-level activity. C-level activity is the next step beyond B-level activity and is focused on systematically getting better at how we improve (Englebart, 2003). In K-12 schools, C-level activity could be systematically studying and improving the effectiveness of professional development for teachers. Improvement Science is fundamentally about C-level activity, getting better at getting better (Bryk et al., 2015).

One contributor to the theory of learning organizations was the statistician and management consultant Edwards Deming, known for transforming the Japanese industry

Improvement Science: Improving Employee Engagement in the 1950s through a series of ideas opposed to scientific management (Jones et al., 2015). In contrast to scientific management principles, where the manager's job is to monitor for compliance, Deming (1986) dismissed such inspection's feasibility and wisdom. Instead, he argued that employees should be managed to monitor and inspect their own work (Schmoker & Wilson, 1993). Rather than attempting to improve the final product through inspection at the end, Deming argued for building quality control into the process itself (Holt, 1993) and argued for a process of continuous improvement: "improve constantly and forever" (Deming, 1986, p. 23). Deming believed his theories had implications for leadership. According to Deming, leadership is not about supervision; it is about finding ways to help workers do their jobs better. "The aim of leadership is not merely to find and record failures of men, but to remove the causes of failure: to help people to do a better job with less effort" (Deming, 1986, p. 90). In Deming's view, quality comes from top management, not from exhortations that workers try harder (Holt, 1993).

Another key idea in IS is to understand variation (Shewhart, 1925, 1926). In any system, there will naturally be variation both in processes and outcomes. Some variation is due to random chance, which Shewhart referred to as common cause variation. Another variation is so significant as to be due to something other than random chance, which Shewhart referred to as unique cause variation (Perla, Provost, & Parry, 2013).

Understanding whether the variation is due to a common or special cause is important because improvement teams could leap to make changes due to variation that is merely due to random chance. A concrete life example would be for a dieter to step on the scale,

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observe a gain of one pound, and abandon a current weight loss plan rather than

recognize that small weight fluctuations are to be expected. Shewhart's control charts

help practitioners of improvement science understand the variation in data they observe

(Shewhart, 1926).

Although Deming reportedly disliked the term and did not agree with all aspects of the concept, total quality management (TQM) is a set of ideas and practices built upon Deming's work that came into prominence in business management in the second half of the 20th century (Peck & Reitzug, 2012; T. Powell, 1995). Key ideas from TQM include focusing on the customer, continuous improvement, and systems thinking (Peck & Reitzug, 2012), as well as teamwork and the idea that employees should gather data which is used to guide decision making (Schmoker & Wilson, 1993). While TQM advocates for the rigorous use of data, it is noteworthy that data are used to improve the overall system, not to blame individuals (Schmoker & Wilson, 1993c).

Improvement Science is based on systems thinking: understanding how a particular intervention fits within a larger system of actors, pressures, and structures (Senge, 2006). Additionally, in contrast to scientific management that presumes that workers will not be motivated to do good work without inspection by their manager, Deming and Improvement Science enthusiasts believe that individuals will naturally try to do high quality work; the challenge is changing the system they work within (Bryk et al., 2015).

TQM advocates for a focus on the customer (Peck & Reitzug, 2012, p. 372).

Similarly, Improvement Science advocates for user-centered design, including scholars

Improvement Science: Improving Employee Engagement focusing on the problems that practitioners have and building partnerships between scholars and practitioners to solve common practice problems (Bryk, 2014). Bryk et al. (2015) argue that it will be possible to create solutions more likely to be successfully implemented by more closely connecting scholarship and practice. Similarly, Juran (1956) is credited with bringing a human dimension to the quality management process. In contrast with scientific management, Juran (1956) argued for more human-centered management, such as the importance of including people closest to the work in the decision-making process and understanding other people's perspectives when introducing change to an organization. This principle is seen today in Improvement Science with the mantra to be user-centered, including educators in the design of potential solutions and listening well to educators' actual problems before rushing in with solutions (Bryk et al., 2015).

Scholars and practitioners have had success using improvement science methods to solve significant problems of practice across different disciplines. U.S. domestic airlines dramatically reduced fatalities in airline takeoffs (Jones et al., 2015). Toyota famously achieved high reliability in auto manufacturing with the Toyota Production System using these methods (Rother, 2010). Hospitals across the state of Michigan reduced catheter-related infections by 66% by increasing the frequency of desirable clinician behaviors, e.g., hand washing (Pronovost et al., 2006). Researchers in the U.K. reduced errors by 42% during the transfer of pediatric heart surgery patients to the intensive care unit by improving the process using a handover protocol modeled after a Formula-1 pit-stop team (Catchpole et al., 2007).

Improvement Science: Improving Employee Engagement **Transfer of Improvement Science Efforts to Education**

While Improvement Science has achieved dramatic results in industry and healthcare, there are now efforts underway to improve educational outcomes using improvement science methodology. The Carnegie Foundation for the Advancement of Teaching began a project known as Pathways to improve developmental math classes beginning in fall 2011 (Van Campen, Sowers, & Strother, 2013). According to baseline data, at the community colleges participating in this project, only 15% of developmental math students had received credit for college-level mathematics within two years. Within the intervention group, this number rose to 52% in one year. In other words, over three times as many students earned college mathematics credit in half the time (Van Campen et al., 2013). There are other efforts in K12 education underway as well. These projects include improving the frequency and quality of feedback and mentoring for new teachers (Hannan, Russell, Takahashi, & Park, 2015; Park, 2014), helping students to persist through challenging learning opportunities (Bryk et al., 2013), and increasing the quality of secondary mathematics teacher preparation (Martin & Gobstein, 2015). Key practices within improvement science include tools for understanding the problem a team is trying to solve, tools for taking action, and tools for understanding if actions taken, lead to improvement towards desired aims.

Improvement Science as a field has a number of practices that are typically utilized in the course of an improvement project (Bryk et al., 2015; Langley et al., 2009). There are two broad methodological activities within improvement science: understanding the problem and taking action. Understanding the problem is an important

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step because it is easy to jump directly to solutions without fully understanding the problem you are actually trying to solve or what Bryk et al. (2015) refer to as solutionitis.

Understanding the Problem

Understanding the problem is a key aspect of IS. Root-Cause analysis is an effort to dig deeper into a problem to better understand the first layer of understanding a problem and get down into deeper causes of the problem. Part of understanding the problem includes using data analysis to see the system better (Bryk et al., 2015). Examples of tools for understanding the problem include the fishbone or Ishikawa diagram (Langley et al., 2009), the 90-day cycle report (Park & Takahashi, 2013), empathy interviews ("Method: Interview for empathy," n.d.) with people closest to the issue (e.g., content or grade level PLC teams), and "expert convenings." At the same time, understanding the problem exists in tension with taking action. One can imagine a group spinning its wheels on root cause analysis and not getting going with solving the problem. Tools for taking action include the Plan-DoStudy-Act (PDSA) cycle, change ideas, and improvement reviews (Reinertsen, Pugh, & Nolan, 2003). The driver diagram (Langley et al., 2009) is a theory of action that sits at the intersection of understanding the problem and taking action. Underlying all of the work is a system of practical measures (Yeager, Bryk, Muchick, Hausman, & Morales, 2014).

The fishbone or Ishikawa diagram (Langley et al., 2009) is an organizing tool that helps people explore the root causes of problems. Fishbone diagrams are divergent tools (Kaner, 2014) that enable teams to brainstorm all the possible causes of the problem they are aiming to improve, and then to group those different causes into common "bones" of

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the diagram to represent the significant causes of the problem. Such root cause analysis is important to ensure that teams do not rush to action without fully understanding the problem (Bryk et al., 2015). The 90-day cycle report (Park & Takahashi, 2013) is a structured and systematic method to rapidly gather information about a topic and produce a product that is intended to be useful to an improvement team. Steps in creating a 90-day cycle report include consulting relevant academic literature and interviewing experts (broadly defined) and prototyping tools such as driver diagrams, measurement tools, or processes. Empathy interviews, popularized by (among others) the school at Stanford University ("Method: Interview for empathy," n.d.) are a method for learning more about a system from the point of view of participants in the system (e.g. students, parents, teachers). As noted by Bryk et al. (2015), it is important to frame the problem from the point of view of the user so that the work is addressing a felt need. A related concept is the expert convening, which is similar to empathy interviews but includes participants from within the system as well as people from outside the system who have particular expertise in the subject of interest, whether as someone who has had success in improving that outcome in another context or someone who has developed scholarly knowledge (Grunow, 2015).

Taking Action

One aspect of improvement science is identifying high leverage processes that currently have high variability in execution and outcome that are likely to benefit from creating standard work processes (Bryk, 2014). Standard work processes are a way to create routines that people can rely upon that reduce complexity and improve quality

Improvement Science: Improving Employee Engagement (Bryk, 2014). In healthcare, hospital systems have used standard work processes, such as checklists, to dramatically improve patient outcomes while maintaining the creative aspects of being a doctor (Gawande, 2010).

Improvement science scholars argue that improving at scale requires measurement. When a change has been introduced into the system, it is essential to get objective confirmation of whether the change has had the intended effect (Bryk, 2014). Improvement scholars argue for a range of data, including both outcome and process data. Outcome data includes outcomes such as student outcomes on an assessment, while process data is data that tells improvement science practitioners how a process is being implemented. For example, the number of students who did not demonstrate proficiency on an assessment is a measure of the school's strategy in supporting more students to become proficient in the essential learning standard.

Balancing measures (Bryk, 2014) help ensure that the change being implemented is not creating other problems throughout the system. For example, a survey of student engagement might be a balancing measure to ensure that the curriculum is not narrowed due to a focus on test scores.

The *Plan-Do-Study-Act* cycle is a method for implementing the improvement model (Langley et al., 2009). In the PDSA cycle, teams create a plan, which includes making specific predictions about what will happen as a result of a change; (b) do the change (a "change idea") in a small-scale manner; (c) study the results of the change, including seeing whether the predictions came true or not; and (d) act to make the change permanent or to try a different change (Bryk et al., 2015; Jones et al., 2015). According to

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Perla et al. (2013), PDSA cycles are consistent with seeing improvement science as part of the scientific method because the steps include predictions, data gathering, and data analysis, leading to another cycle of inquiry.

In the improvement review (Reinertsen et al., 2003), an improvement team shares their aim statement, driver diagram, and measures (aka goal, theory, and data). Other people in the organization not on that team ask questions about the work and then discuss the work while the presenters only listen. Then the presenters come back into the conversation to share what they've learned from the conversation. The improvement review is roughly that of the consultancy protocol (McDonald, Mohr, Dichter, & McDonald, 2007). The improvement review may be an effective way to build a culture of improvement within an organization or improvement community. The study encourages the presenting team to get organized, to complete some partially finished work, and to push the work forward. For others, the review appears to get everyone up to speed on work happening in the organization, builds a deeper understanding of the improvement process, and develops an enthusiasm for the work.

Sitting at the intersection of understanding the problem and taking action is the driver diagram (see Figure 1). The driver diagram (Bryk et al., 2015) is a tool for developing and articulating a theory of action. On the left of the diagram is the aim or the goal. Immediately to the right of the aim are the primary drivers. Next are the secondary drivers where there is an opportunity to impact the primary driver in the system.

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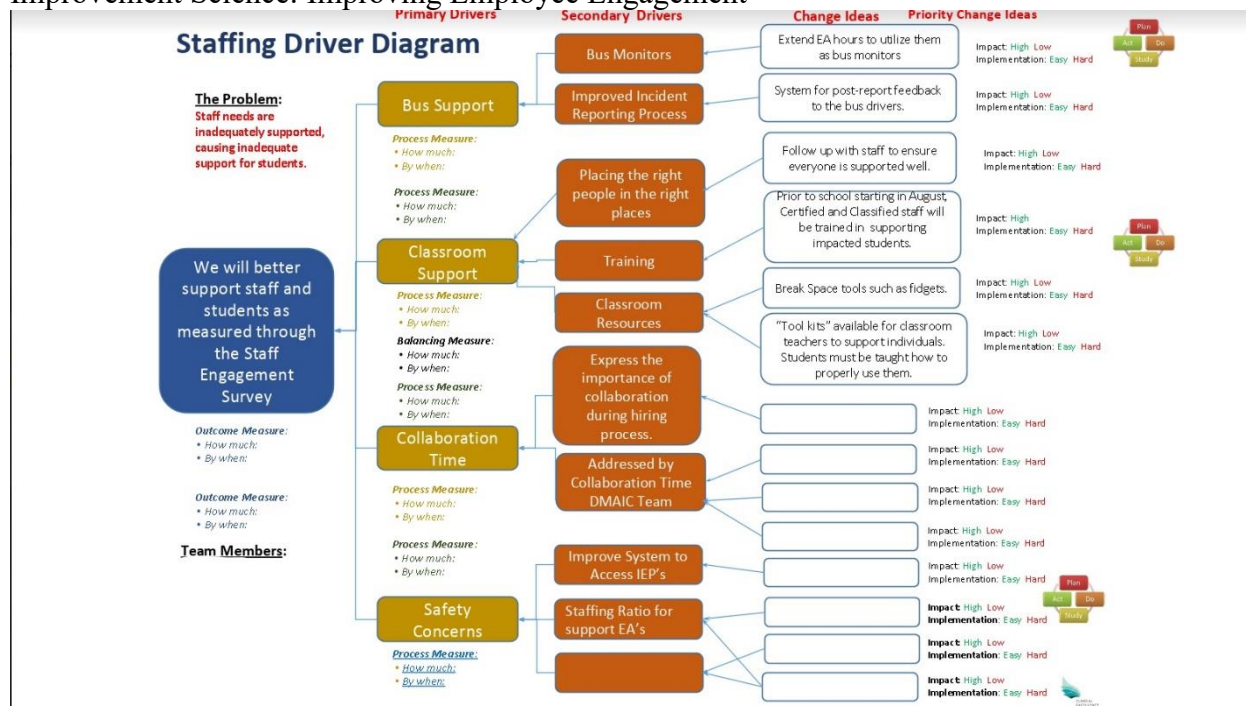


Figure 1: Idealized example of a driver diagram

In conducting an IS project, the team must define a common aim, and this aim must be measurable (Bryk et al., 2011). Yeager et al. (2014) describe two traditional educational measurement needs for accountability and theory development. Measuring for accountability is about knowing how individual actors (e.g. students, teachers, schools, states) are doing. Measuring for theory development is about helping to determine what is happening conceptually. Yeager et al. (2014) argue that a different type of measurement is needed for practitioners on the ground, which they define as "practical measurement." Practitioners engaged in improvement science require measures that directly measure the target, are contextualized to the appropriate audience, and are designed to work within day-to-day practice constraints (Daley, 2017). For example, a

Improvement Science: Improving Employee Engagement survey might need to be answerable in only three minutes. As such, it must have carefully selected questions that eliminate redundancy and precisely give practitioners of improvement science information about their targeted goal (Yeager et al., 2014).

To summarize, key practices within improvement science include tools for understanding the problem a team is trying to solve, tools for taking action, and tools for understanding if actions taken, lead to improvement towards desired aims. Having described these tools, I now turn my attention to the results of improvement science in a range of industries and nascent efforts to bring improvement science into education.

Criticisms of Improvement Science

Some scholars raise questions about the wisdom of importing TQM and, thus, IS principles into schools. In a survey of 30 CEOs of for-profit companies, Powell (1995) found that higher performance was not explainable due to TQM tools' presence. Instead, higher performance was linked to TQM's underlying principles, such as open culture and employee empowerment, suggesting that imposing TQM tools (and perhaps by extension improvement science tools) on organizations not built upon these basic principles will have limited impact. In another study, Peck and Reitzug (2012), through close textual analysis of business management and educational leadership textbooks, charted the trend of how business management ideas, including TQM, become popular, lose popularity, and then excitedly become popular trends in educational leadership despite already having faded in the business world. More global concerns about importing TQM and Deming's ideas into schools comes from Alfie Kohn (1993). In addition to arguing that many advocates of bringing Deming and TQM into schools fail to interpret these ideas

Improvement Science: Improving Employee Engagement correctly, Kohn (1993) goes further to argue that importing business ideas, even adequately understood, into education is inappropriate in the first place. For example, Kohn (1993) argues that focusing on data will almost certainly result in schools reducing the curriculum to a focus on standardized test scores.

These critiques of TQM and Deming in education certainly give pause and should be taken seriously. However, although it is important not to become uncritically enthusiastic about business ideas, particularly those that have fallen out of fashion, the underlying principles behind these ideas may still have merit, even if the brand is no longer trendy. Schmoker and Wilson (1993a) respond to Kohn's critique by arguing that TQM principles should be adapted for education, not wholesale uncritically adopted.

Implementing the Improvement Science Theoretical Framework to Address the Problem of Employee Engagement

In schools, “organizational capacity” refers to the entire faculty's collective competence to strengthen student performance in every classroom (Kaplan & Owings, 2017). Teaching quality and teacher competence are enacted individually and as organized collective inquiries. In 2013, a Gallup organization report found that 70% of American workers were not expanding their knowledge and skills to reach their full potential (Gallup, 2013). But when employees feel that their employer cares about them and encourages them to make the most of their talents, employees are more likely to respond with increased discretionary effort, a stronger work ethic, and more enthusiasm and commitment (Kaplan & Owings, 2017). This desire from today's employees fits the organizational frameworks of the likes of Lewin and Senge.

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Thus, Improvement Science tools, processes, and concepts incorporate Improvement Strategies successful in non-educational fields and build upon research on employee engagement. This multi-paper dissertation presents four papers that examine the use of improvement strategies to impact student engagement.

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CHAPTER THREE

Using Improvement Science in PLCs: From Theory to Practice

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Using Improvement Science in PLCs: From Theory to Practice

Improving student outcomes in schools has proven elusive in too many schools and districts in our nation, continually leaving behind the most vulnerable students and families in our communities. This chapter provides an overview of Improvement Science efforts in one district, how the district uses Professional Learning Communities to use the tools and process of Improvement Science, and how the superintendent is examining the impact of this strategy on student achievement.

Improvement Science has garnered successful outcomes in other fields such as health care, and while the research on the impact of using Improvement Science in schools is developing, evidence from schools in our state piloting Improvement Science

Improvement Science: Improving Employee Engagement indicates it has promise as we work to reduce educational disparities in our state and nation. As Carlile and Peterson (2018) share in chapter 12 of this book, these disparities are pervasive and have created an educational system in which the race and ethnicity of our nation's students predict the student's educational attainment. This injustice cannot continue in public schools in our country. Thus, the Cascade Falls School District (CSD), where Superintendent Rao is now in his 2nd year as superintendent, has used Professional Learning Communities (PLCs) for the past year and is now using PLCs as a strategy for implementing IS.

The Improvement Science Model (Bryk et al., 2015) employed by Superintendent Rao in this case study includes Plan-Do-Study-Act (PDSA) cycles to examine an organization's or team's work and processes. PDSA cycles require the team to examine how the context (Lewis, 2015) creates variability that results in inconsistent outcomes. IS asks these questions:

1. What specifically are we trying to accomplish?
2. What change might we introduce and why?
3. How will we know that a change is actually an improvement?

Given that PLCs and IS complement one another, Superintendent Rao is using PLCs to implement IS.

Background

This case study describes the work in the Cascade Falls School District, a public school in a rural district in the Northwest United States. Cascade Falls School District (CFSD) serves students in grades K through 12 with two k-5 elementary schools, one 6-8

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middle school, and one 9-12 high school. The student population consists of more than 1500 students and is 80% White, 17% Hispanic/Latino, 1% African American, 1% Asian and 1% American Indian. Fifty percent of students qualify for free and reduced lunch, 10% were classified as English language learners, while 16% receive special education services.

The district's 300 staff members consist of 8 administrators, 100 teachers, and almost 200 support staff. Superintendent Rao is a new leader in the district, and under his first year of leadership, CFSD embarked in a transformational leadership effort focused on a system-wide implementation of a DuFour Model Professional Learning Communities (PLC) for all grade and content level teaching teams in the district. The collaborative culture being installed in the CFSD is a new practice. Teachers in the past have primarily worked in isolation and have seldom shared student outcomes and teaching strategies with their peers.

Several school structures exist to encourage and support teachers in their development of curriculum and project design, including eight days of professional development training, two hours every Wednesday to practice the DuFour PLC framework. One third of the teaching staff attended a national PLC summit sponsored by Solution Tree. And a nationally recognized speaker visited the CFSD to work with individual teacher teams. The majority of the teachers appreciate the autonomy, but also acknowledge that it often takes more time than allotted and significant effort to develop meaningful and rigorous curriculum for all their students.

Improvement Science: Improving Employee Engagement **Need for Improvement**

The educational field is riddled with top-down reform initiatives that have failed to address inequitable student learning outcomes for students from low socioeconomic backgrounds and students of color (Lee & Reeves, 2012; Mathis, 2010; NAEP, 2015). Over the past century, there has been a steady consolidation of decision-making power at the district, state, and federal levels, far removed from the classroom and the context in which teaching and learning occurs (Berube, 1994; Bryk, et al., 2015; Darling-Hammond, 1994; DuFour & Marzano, 2011). These remote education reform decisions are often constructed as a “one size fits all” solution and fail to take into account the significant variability in what counts as effective teaching and learning strategies from class to class and school to school (Bryk et al.). Consequently, many reforms fall short in fulfilling their promise to improve student achievement and high school graduation rates for underserved students. Teachers, who are often the target of such reforms experience what some call “initiative fatigue.”

Many educators acknowledge that our deepest insights come from action, followed by reflection, and a search for improvement. Every person who enters the field of education should have both an opportunity and an obligation to be a leader (DuFour & Marzano, 2011). Rick DuFour has committed over 36 years to improving student achievement through teacher team collaboration in PLCs. DuFour argues that a PLC is an ongoing process in which educators work collaboratively in recurring cycles of collective inquiry and action research to achieve better results for the students they serve (DuFour, DuFour, Eaker, Many & Mattos, 2016).

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Despite the popularity of PLCs in today's educational initiatives, the practice of a PLC continues to represent a road less traveled in public education. Many teachers and administrators prefer the familiarity of their current path, even when it is evident that it will not lead them to their desired destination (DuFour, 2010).

Masalach and Jackson (1986) define burnout as a three dimensional concept: emotional exhaustion, loss of a sense of personal accomplishment, and depersonalization. Emotional exhaustion includes teachers' tiredness. When teachers' emotional resources are drained, tiredness develops, and depersonalization occurs. The role of teacher is arguably among the most demanding while also having the highest impact on student outcomes. Teachers cope with the numerous demands of an uncertain society and high stakes expectations, contributing to high levels of burnout among teachers, with one-third leaving the profession within five years of starting (Farmer, 2017). It seems the national focus is on everything in education that is not working (Manju, 2017). When teachers are stressed, it not only effects their quality of life and well-being, it also impacts their teaching performance, which in turn, directly impacts their students' academic performance.

DuFour and Eaker (1998) identified a number of reasons past efforts to improve schools have failed. They included "the complexity of the task, misplaced focus and ineffective strategies, lack of clarity on intended results, failure to persist, and lack of understanding of the change process" (p. 17). PLCs are different from the failed efforts of the past because they address these issues so the improvement efforts can be sustained. As DuFour (2007) noted,

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“Researchers who have studied schools where educators actually engage in PLC practices consistently cited those practices as our best hope for sustained, substantive school improvement” (p. 6). Teachers are a critical component in PLCs: “Teachers contribute to sustaining learning communities when they shape practices and experiences around shared values and beliefs” (Jenlink & Jenlink, 2008, p. 315). These shared values and beliefs create a culture focused on the learner and make the PLC essential to ongoing student success.

Hattie (2009) concluded the best way to improve schools was to organize teachers into collaborative teams. Despite the fact that teacher teams are conducting this work together, student achievement across the United States continues to stagnate, thus, many educational experts have analyzed new ways for teachers to ensure students of all backgrounds achieve educational success. The DuFour model PLC is a proven system, in which teacher teams share the workload, discuss effective instructional techniques, and provide intervention and enrichment opportunities for the students who need extra supports (Hattie, 2009). However, through this system of teacher development, new problems of practice have emerged. The data from local formative assessments indicate that classroom teachers are deficient in the skills necessary to create common assessments that possess the rigor and depth to appropriately assess each essential learning standard at grade level.

While teacher burnout and lack of involvement in change efforts are one indication of the need for improvement, another indicator is student outcomes. Nationally, student performance data is not improving quickly enough, nor among the populations who have not historically underserved w by our schools: students of color,

Improvement Science: Improving Employee Engagement students living in poverty, and students with disabilities. Despite the fact that teacher teams are conducting PLC work together, student achievement across the United States continues to stagnate. The 2009 PISA scores showed that 18 percent of fifteen-year-olds in the United States do not reach the PISA baseline of a level 2 in reading proficiency (Organization for Economic Co-operation and Development, 2011). To put this into perspective, the National Center for Education Statistics (NCES) estimates that of the 4.1 million fifteen-year-olds currently enrolled in the U.S. public schools (Hussar & Bailey, 2013), if 18 percent of these students fail to meet the baseline PISA level two for reading, it means nearly 738,000 students every year are considered incapable of “participating effectively

and productively in life” (Organization for Economic Co-operation and Development, 2011).

Testing the Change

Research on the impact of using Improvement Science in schools is developing and our case study contributes to the research on Improvement Science by examining the use PLCs as a strategy for implementing IS. For example, in Rao’s District, PLCs examine student content standards, rewrite expectations in their own words, create common assessment rubrics, and then utilize the rubrics to determine if their teaching strategy was effective (DuFour, Eaker & Many, 2006). The inquiry cycle might be a month, a term, or a full year or more. Teachers ask the following questions:

1. What do we want students to learn?
2. How do we know if they learned it?

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3. What do we do for those that did not learn it?
4. What do we do for those that did learn it?

Unless teachers can answer each of these questions with credible evidence, they will not be able to accurately direct their improvement efforts (DuFour, 2010). Without a sufficient number of skilled people to enact these cultural, structural, and pedagogical changes, capacity building could not occur. In addition, to providing PLCs to help expand teachers' instructional skills, school leaders provide an array of opportunities for teachers to extend their leadership expertise in conversations, coaching, mentoring, networking, and new teacher instruction (Kaplan & Owings, 2017).

In order to build the organizational capacity to effectively run a PLC, the leadership needs to develop the conditions in which to develop a collaborative environment. Principals cannot simply direct teachers to set up and join a PLC. For teachers' capacity to grow and positively impact students, the principal needs to ensure that certain basic structures are in their place (Kaplan & Owings, 2017). First, the principal must create and sustain the school culture and conditions to support teacher and student learning. Second, the principal must develop a shared unity of purpose about the important problems the school faces. Third, the principal needs to hire educators who have (or can develop) the deep expertise in approaches to improving teaching, learning, and leading (Williams, 2009).

Determining a school's primary focus requires collecting and analyzing data that regularly highlights progress toward the goals of improving teaching and learning and linking these with ongoing professional discussions about that progress. In these ways, teachers and leaders come to agree on their priorities, share norms about best practice,

Improvement Science: Improving Employee Engagement and hold each other accountable for the results (DuFour et al., 2016). Actively participating in this process develops a sense of ownership and commitment about the goals they want to reach, making follow through more likely.

The Improvement Science Model (Bryk et al., 2015) includes Plan-Do-Study-Act

(PDSA) cycles to examine an organization's or team's work and processes. PDSA cycles require the team to examine how the context (Lewis, 2015) creates variability that results in inconsistent outcomes. IS asks these questions:

1. What specifically are we trying to accomplish?
2. What change might we introduce and why?
3. How will we know that a change is actually an improvement?

While the structures listed above are key takeaways for educators interested in developing an improvement culture at their school site, teachers will experience challenges with using the tools and methods of improvement science without a solid foundation of a collaborative culture. Using DuFour's PLC framework allows teacher teams to maintain an intentional focus on student learning while using improvement science techniques to

collaboratively address problems of practice that increase teacher agency and capacity.

A concept that may increase teacher agency and capacity while also allowing for variation of context is to address challenges through what is known as "standard work"

Improvement Science: Improving Employee Engagement (Sharrock, 2018). In many professions, portions of the work are standardized to reduce variation. Doctors have checklists for routine procedures to ensure that a high level standard of care is met.

A set routine in a teacher's classroom that supports an already identified student behavior may be a more accessible target for iteration compared to testing out a new teaching practice. The desired student behavior provides an easily identifiable measure that teachers can collect data on as they iterate on the already established routine (Sharrock, 2018).

In some cases, the nature of the problem also causes challenges to collecting useful data. Developing student literacy, mathematical agency, or vocabulary acquisition are all complex processes with a myriad of interconnected variables (Evangelista, 2017). Recognizing the significant cognitive load that a full day of teaching already demands, where does the cognitive work of data analysis fit in? What data do teachers find useful? And what data collection methods build on teachers' already powerful classroom observational skills? And most importantly, what contributes to a teacher's sense of efficacy and fulfillment, conditions that harness their passion and cause them to thrive in their roles as teachers (Marshall, 2009; Peterson, 2014).

Implementation

Given that PLCs and IS have such high potential to create conditions for teacher success in each classroom and due to what Superintendent Rao views as complementary concepts, he is using PLCs to implement IS. For example, in the CFSD District, PLCs examine student content standards, rewrite expectations in their own words, create

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common assessment rubrics, and then utilize the rubrics to determine if their teaching

strategy was effective. The inquiry cycle in PLCs might be a month, a term, or a full year

or more. Teachers ask the following questions:

1. What do we want students to learn?
2. How do we know if they learned it?
3. What do we do for those that did not learn it?
4. What do we do for those that did learn it?

For the “Plan” stage of the PDSA cycle, each individual teacher team identifies a student learning objective to focus on. The team focuses on the PLC Question: What do

we want students to learn? During the “Do” stage of the PDSA cycle, the teachers collect

student work samples. Next, teachers enter the “Study” phase of the cycle. Teachers use

the common assessment rubric to evaluate student learning and analyze the outcomes.

The team focuses on the PLC Question: How do we know if they learned what the

standard requires? The last stage of the PDSA cycle, teachers use the analysis to inform

their teaching. Teachers ask the question:

What do we do for those who did not learn? What do we do for those who did learn?

For the “Plan” stage of the PDSA cycle, each individual teacher team identifies a

student learning objective to focus on. The team focuses on the PLC Question: What do

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The team focuses on the PLC Question: How do we know if they learned what the standard requires? The last stage of the PDSA cycle, teachers use the analysis to inform their teaching. Teachers ask the question:

What do we do for those who did not learn? What do we do for those who did learn? The Cascade Falls School District has experienced early success, within one year of implementation of PLCs. Significant growth in student outcomes were reported in the elementary and high school levels. Furthermore, students identified for special education services also experienced substantial gains under this model.

Cascade Falls School District 2017-2018 Student Growth in State Assessment

In order to maintain decision-making over how students are taught and assessed on their learning, teachers need to have a shared knowledge base. A shared understanding of how learning occurs and its dependence on the individual, the collective group, and the learning environment, is an important framework for developing solid pedagogical practices and classroom structures that promote student achievement and equity. Challenges to developing a shared knowledge base include teachers' past experiences and current beliefs about the purpose of schooling, and the isolated nature of teaching. Each educator brings a unique perspective and set of goals to their practice. At times, those goals are at odds with the broader institutional and cultural conversations around the purpose of education. Since shared knowledge is coconstructed, creating a unified goal

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such as equitable student outcomes require ongoing dialog and collective consideration
(Biesta, Priestly, & Robinson, 2015).

One of the hopes for Improvement Science is that the tools and methods can be used by teachers to engage in inquiry to achieve more equitable outcomes for all their students. In order to achieve this goal, teachers need to first recognize that the tools are useful to their practice.

Using the fishbone diagram, interrelationship digraph, and driver diagram tools in the initial professional development workshops provided teachers with a shared experience in which they deepened their own understanding of their identified problems of practice.

Discussion

Generating a shared knowledge base and common vision of teaching and learning while assuming responsibility for student outcomes is crucial if we are to end the educational disparities children of color, children with disabilities, and students living in poverty. Teachers who feel that they are an integral part of an improvement community and that they can meet the learning needs of all their students are more likely to iterate on new and existing teaching strategies and be willing to collaborate and learn together (Marzano, 2017), thus benefitting our students.

The challenges teacher teams experience in generating a shared knowledge base included limited generation of sharable evidence of change ideas working and the continued silo nature of classrooms. These challenges underscore the complexity involved in developing a shared knowledge base for teaching and learning. In order to

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develop common practices, a shared vision for what good teaching and learning looks like must first be developed. This requires teachers to discuss common problems of teaching, their possible root causes, and what student learning looks and sounds like within a given context. Improvement science tools and methods can help facilitate this process and may be enhanced if paired with other structures that support additional shared experiences within the PLC structure.

While we do not yet have outcome data in this case, we plan to use IS strategies and tools to measure the implementation of the DuFour model PLC with IS. This use of PLCs to implement IS ensures that those closest to the problem of increasing student achievement, our teachers, are those who identify the change, measure the impact of the change, and adjust – quickly- to ensure the change benefits their particular students. For us, one of the most powerful parts of IS is that these teachers, they who have the deepest and richest expertise in teaching, and who have made teaching their life's calling (Marshall, 2009) are respected and valued (Peterson, 2014) in an improvement effort that is more likely to succeed with their leadership and their expertise.

Questions

3-4 Open-ended Questions that could be used in a class or workshop setting -
Deborah

1. Consider an unsuccessful change process in your setting.
 - a. To what do you attribute the failure?
 - b. What data indicated it was failure.
 - c. Were there any positive and unintended outcomes?

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2. What would you strongly encourage Superintendent Rao to consider regarding his context as he implements Improvement Science through PLCs?
3. What information do you still need about the context of the CSD to ensure the successful implementation of IS through PLCs?

Class Activity

1. Examine one change effort that you engaged in within the past 5 years that was successful.
 - a. To what do you attribute the success of the change process?
 - b. What data did you use to indicate it was a success?
 - c. Were there any positive and unanticipated outcomes of the change process?
Any negative and unanticipated outcomes of the change process?

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Chapter 4

Aligning Values, Goals, and Processes to Achieve Results

This work was previously published:

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Introduction

This case study describes work in the Cascades School District, a rural district in the northwest United States, serving students grades PreK-12 with: two PreK-five elementary schools, one 6-8 middle school and one 9-12 high school. The student population consists of more than 1,800 students and is 80% white, 17% Hispanic/Latinx, 1% African American, 1% Asian and 1% American Indian. Fifty percent of the students qualify for free and reduced lunch, while 10% are classified as English Language Learners and 18% receive special education services. The district's 300 staff members consist of 12 administrators, 140 teachers and almost 160 support staff.

This body of work draws upon research and frameworks from two main continuous improvement organizations: Studer Education, and the Carnegie Foundation. It also cites work from researchers in the fields of improvement science methodology,

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quality improvement, change management and organizational leadership. The collective body of research and the frameworks deepened CSD's learning and processes that led to early results. In addition, research on systems alignment and employee engagement were utilized to generate assertions as CSD moved through the improvement process (Harter, 2020; Senge, 2012; Studer, 2004; Studer & Pilcher, 2015).

Superintendent Day has served as the district's improvement leader for three years and has been deeply committed to aligning the mission, vision, goals, and values of the organization. Prior to being hired as CSD's chief leader, the district had never developed a strategic plan to drive core decisions within the organizational structure. Departmental and building leaders operated in silos making good faith decisions that benefited their individual schools, with little awareness of the unintended consequences caused by cumulative misalignment within the organization. Different schools had different priorities and the district was constantly chasing the next "new" framework and model with limited strategies to successfully implement and/or sustain these new change initiatives. A consequence of system leaders being siloed, was a deeply engrained culture of "We/They;" a process by which individuals transfer accountability and responsibility to others (Studer & Pilcher, 2015). Anytime the district developed an initiative or established a set of decisions to be communicated to all employee stakeholders, leaders would transmit these communications, first by stating that this decision came from the district office, then, abdicating all collective ownership of the message and its intentions, creating mistrust and confusion. Over time, these actions developed into a clear division

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between district administration and building leaders. The organization had arrows pointing in all different directions.

As Superintendent Day, began auditing the organization, he quickly realized that there were some extremely talented leaders within the district doing exceptional work; however, working in isolation would not make the system reliable. He also noticed a desire from district and building leaders to work closer together as a team. This compelled him to eliminate old definitions of what district support meant. He sought new ways to improve the system's communication and standards of practice, knowing the old way had prevented the district from leveraging the experiences and expertise of these talented leaders. Soon after he began to probe these same district leaders, they began to collectively recognize that the district had not established any core values and was drifting without any aligned strategic processes. Every building and district level leader believed passionately in different paradigms and strategies, and they needed to find a way to collaboratively begin to drive a new vision for their district.

During the second year of the Superintendent Day's leadership, he gathered the executive board of directors and the district leadership team to engage school and community stakeholders in developing a five-year strategic plan. The leadership team, together with the community, formed a strategic planning committee that collaboratively designed a strategic plan and identified five core values and five key areas of focus for Cascades School District. These five pillars focused priorities on:

- Student Success
- People

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- Quality Service
- Finance and Operations
- Growth and Innovation

Upon completion of CSD's strategic plan, Superintendent Day, along with the leadership team, determined that the next challenge would be to operationalize their plan. In order to develop the organizational efficacy needed to successfully implement their plan, the Cascades School District partnered with Studer Education, a national company, who's proven framework, *Evidence Based Leadership*SM drives successful improvement efforts that leads to sustainable results (Studer Education). The remainder of this chapter shares the Cascades School District's journey towards aligning the whole organization using this model of continuous improvement and how it began to transform district culture and achieve desired results.

Defining Improvement

“The biggest and most profound challenge we’ve had to deal with—and the one’s that’s requiring the greatest adjustments inside organizations—is the education sector’s move from episodic change to continuous change.” (Studer & Pilcher, 2015, p.87)

One of the most challenging questions that educators have grappled with is why organizations achieve and sustain improvement while others fail. *What makes one organization more successful at driving improvement and achieving results than another? How do organizations create systems around improvement that not only sustains change, but creates an ongoing process that make them resilient and more agile to solve new problems that emerge?* A problem is defined as the gap between where an organization is

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and where they want to be. The work of improvement is to eliminate the barriers that

create the gap, design processes to prioritize and test change ideas that tackle these gaps.

(Ahlstrom, 2014). According to improvement expert Ahlstrom, there are three things that

define improvement: eliminate barriers or hassles, solve problems, and improve outcomes

(Ahlstrom, 2014). District's engaged in continuous improvement strive to answer three

key questions (Bryk et al., 2015):

1. What are we trying to accomplish?
2. How will we know the change is an improvement?
3. What change will we make that is an improvement?

Change begins when organizations align priorities, define success, take actions,

and use iterative cycles like the PDSA to solve problems that eliminate barriers to

success. (Bryk et al., 2015; Carpenter & Peterson, 2019); however, cycles of

improvement alone do not change a system. Developing leaders and a culture that

engages employees, are critical differentiators from other improvement methodologies

that are only tools and tactic driven (Greco, 2019; Studer & Pilcher, 2015).

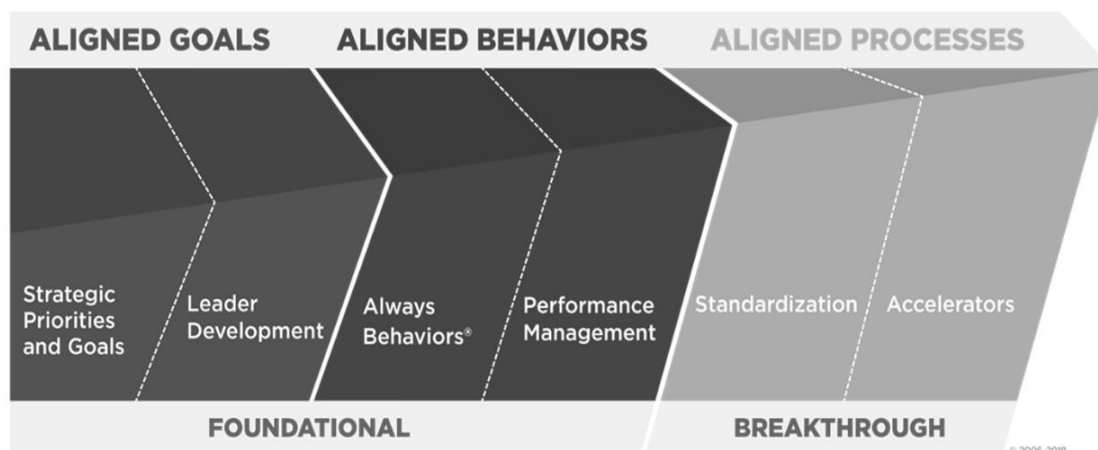
Superintendent Day chose *Evidence Based Leadership*SM because he knew he wanted an

improvement process that put *people first* and would also align his system. The *EBL*SM

Framework drives improvement by aligning goals, behaviors, and processes-while

building a culture around systems of improvement to solve problems, learn and develop

leaders. (Studer & Pilcher, 2015). (See figure 1.)



(Figure 2: *Evidence-Based Leadership*SM Framework; Studer Education)

Begin with People First: Developing and Engaging People

In order to fully realize the kind of improvement that leads to sustainable results, an organization must build its systems and processes around *people first* by hardwiring actions that create a readiness for continuous improvement (Studer, 2009). When organizations hardwire behavior, they practice and standardize behaviors until their employees are engaging in them 99% of the time (Studer & Pilcher, 2015). In the text, *The Improvement Guide*, the authors describe this as “creating continuity” throughout the system (Langley et al., 1996). Alignment and consistency of behavior allows an organization to scale the desired improvement throughout the system.

Superintendent Day’s earliest step in aligning district actions began when he invested in their leadership development. This commitment came as an effort to live their

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newly defined core values and mission. He arranged for leaders to come together to learn about the principles, processes, and behaviors of Continuous Improvement and Evidenced Based LeadershipSM (EBL). An early priority was engaging employees in small behavioral changes that created cultural shifts necessary to sustain continuous improvement. The *Evidence Based LeadershipSM Framework* drove the critical behavioral shifts and provided strategies and tools to combat behaviors that can undermine a system's effort to achieve desired results. CSD focused on three critical elements of the *EBLSM Framework* that included:

1. Developing and engaging people first around the Nine Principles[®] Approach for Organizational ExcellenceSM,
2. Building a culture of service to engage employees and build collective efficacy,
3. Using Always Actions, along with the tools, tactics and strategies to ensures alignment of the system

One of these initial steps in engaging leaders was to begin to hardwire the behaviors outlined in the Nine Principles[®] Approach for Organizational Excellence (Studer & Pilcher, 2015). (See Figure 2).

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- Principle 1: Commit to Excellence**
Set high expectations to achieve results while living out mission and values.
- Principle 2: Measure the Important Things**
Continuously track progress to achieve results with an improvement mindset.
- Principle 3: Build a Culture Around Service**
Serve others with great care and concern.
- Principle 4: Develop Leaders to Develop People**
Coach people to be their best at work.
- Principle 5: Focus on Employee Engagement**
Attend to aspirations and desires in the workplace.
- Principle 6: Be Accountable**
Commit individual accountability to achieve organizational goals.
- Principle 7: Align Behaviors with Goals and Values**
Apply consistent practices to move the organization in a positive direction.
- Principle 8: Communicate at All Levels**
Build connections so that people know why what they do matters.
- Principle 9: Recognize and Reward Success**
Value and appreciate people working together to get results.

(Figure 3: The Nine Principles® Approach; Studer Education, 2020)

The Nine Principles® Approach provided a roadmap of the guiding concepts and processes that are fundamental to Evidence-Based LeadershipSM and known to achieve systemic results (Studer & Pilcher, 2015) Superintendent Day embedded these principles in every engagement and used them to standardize his leadership development, and set expectations for improvement. His leadership and commitment to modeling the Nine Principles himself, while engaging his executive level leadership in understanding each principle, accelerated the necessary cultural shifts and demonstrated key performance expectations. These principles were instrumental in helping his leaders make the shift towards continuous improvement. By example, Superintendent Day provided an early understanding of “what right looks like.” One way he did this was by intentionally developing focused meeting agendas around the Nine Principles® and then tracking how these principles were being demonstrated across the system. As he recognized changes in

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CSD's processes, he called them out and managed up his executive leadership team. As a result of these actions, CSD began to immediately experience behavioral and process alignment shifts that unified leaders as they began to live these principles.

Leader Huddles: Creating Routines to Learn and Improve

At CSD, one of the earliest processes Superintendent Day committed to was to develop all district and school leaders. He hosted routine conversations the district called Leader Huddles that provided time to introduce key leadership expectations, actions and processes that aligned with CSD's core values. Together, he and his leaders focused on solving real problems, eliminating barriers, and making adjustments, while using tools that kept them aligned (Bryk et al., 2015; Deming, 2013; Studer & Pilcher, 2015).

Leaders set forth data driven actions, used a scorecard and simple dashboards to measure and monitor their progress. These short cycles of improvement (PDSA cycles) produced evidence to determine if a change was an improvement, whether they needed to make any necessary adjustments, and helped them to harvest evidence-based successes that served to boost morale throughout the district. CSD utilized these routinely scheduled Leader Huddles to drive small incremental improvements. District leaders, guided by Superintendent Day, met every 30, 60 and 90 days, learning and adjusting as they monitored evidence of their actions and slowly began to improve their processes.

Overseeing their improvement in this way helped CSD learn and make progress toward their annual goals. Superintendent Day and his leader's commitment to routine and deliberate monitoring of their actions helped each leader become accountable to the district's overall progress and move closer toward results. From these activities learning

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increased among the district and building leaders, and critical systemic processes overall began to improve. The scorecard and dashboard built individual leadership accountability around shared goals and actions using a simple *stoplight method*. The *stoplight process* used three colors to indicate the status of their action: green for action completed, yellow for action in progress, and red for no action at all. During each Huddle, leaders were accountable to the group to indicate whether they had been able to “do what they said they were going to do” and provide evidence from leading measures to explain their results. Two key questions drove individual leadership accountability as each leader took their turn answering these questions:

- Did you do what you said you were going to do?
- What did you learn?

Close examination of their progress revealed insights about what they were learning from each action and determined if an improvement had occurred. As leaders gained the fundamentals of improvement, they quickly began to harvest successes. For example, the Director of district operations and his maintenance team developed key systems for improving the safety and cleanliness of the school. They created a benchmark checklist and 5- point scale that aligned to safety requirements and implemented a daily rating protocol and recording results on a dashboard to determine if these checks would improve quality. They improved their rating from a 2.75 baseline to a 3.76 in 6 months. By creating a practical leading measure and holding themselves accountable to the leadership team during Leader Huddles, they were able to improve their processes, create efficiencies that would later prove to be crucial when Covid-19 occurred. These

Improvement Science: Improving Employee Engagement efficiencies also resulted in cost savings that were cycled back into other student programs and initiatives to improve student success. Small incremental changes like this example helped cascade communication and processes across the system and provided the Superintendent and his leaders with important learning about their improvement process (Sternke, 2019). In another instance, district and building leaders utilized data from Leader Rounding. Leader Rounding is a process for simple check-ins with employees and staff that create feedback loops that help to identify key themes around successes, identifying barriers and solving problems from employees and staff. These themes are shared during the 30-60-90 day Leader Huddles. As the curriculum department and building leaders rounded with teachers, one barrier brought to the Leader Huddle from rounding was a lack of teacher understanding of a new K-5 English Language Arts curriculum tool. This lack of understanding was impeding the implementation of ELA standards instruction and stalling improvement efforts for students. Early identification of this barrier allowed the district to adjust and work with instructional coaches to scaffold teacher's understanding and accelerate the use of the ELA tool.

Utilizing Always Actions to Improve Employee Engagement and Build Trust

How people feel about where they work influences productivity (Gallup, 2020). People want to feel proud of where they work. Superintendent Day's goal in aligning behaviors and beginning to form standards of practice required faculty and staff input. Their involvement in defining the way people engage in the workplace environment was

Improvement Science: Improving Employee Engagement essential to creating a positive, satisfying and productive work culture (Harter et al., 2002; Studer & Pilcher, 2015). A Gallup (2020) poll revealed that engaged employees are more likely to stay in their jobs, know their purpose and feel like their making a difference; key factors for achieving organizational results (Gallup 2020). While engaging their people, CSD also built routines and habits that helped them align their key priorities. *The EBLSM Framework* refers to these behavioral habits as *Always Actions*, and they help drive important cultural shifts that establish a key behavioral improvement fundamentals for the organization to deepen their improvement efforts (Studer & Pilcher, 2015)

CSD began to hardwire two employee engagement behaviors: *recognition* and *gratitude*. According to Pilcher & Studer (2015), recognizing and rewarding success is essential to the improvement process. These behaviors had an almost immediate effect *eradicating the we/they culture* that had been a major contributor to the misalignment of district behaviors and communication (Studer, 2009). By recognizing positive behaviors, the district reinforced a clear expectation of “what right looked like.” Superintendent Day embedded both *recognition and gratitude* in routine processes by starting all meetings asking leaders to practice recognition and gratitude at the start of the session. Each meeting agenda began by asking people to recognize others who had contributed positively to ongoing work or who had helped others. Then, attendees were asked to spend two minutes generating handwritten thank yous for individuals to whom they felt grateful. In the first six months, they had sent more than 3000 thank yous and had cascaded gratitude as a routine practice throughout the school system.

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The CSD needed baseline data to obtain critical feedback and gather evidence from key stakeholders to validate whether, or not they had made an impact on employee engagement through their actions. In the fall of the 2019 school year, the district implemented an Employee Engagement Survey administered by Studer Education. The Employee Engagement Survey was administered to all employees to assess three areas:

- 1) Perceptions about immediate supervisors supporting a best place to work environment;
- 2) Perceptions of executive leadership supporting a best place to work environment; and
- 3) Perceptions about communication practices (Studer Education, 2020). During this process, all employees within the organization had the opportunity to respond. The Employee Engagement survey revealed perceptions of employees and their direct report supervisors. The survey was administered twice during the academic year so CSD could formatively measure progress and improvement. The survey helped the school district know if there was an impact on engagement and if the two *Always Actions, recognition and gratitude had made an impact*. Since faculty and staff engagement was critical to creating systems around improvement, the district also set annual Employee Engagement goals on their scorecard to measure long term improvement.

The Cascades School District's baseline data revealed an *overall mean score of 4.21* on a 5-point scale. At face value this was a great win to celebrate with district and building leaders. In general, the employees of the district were engaged. However, as the team disaggregated the data, there were many individual areas that needed improvement. One specific leadership team understanding about using measures that matter was the analysis of the district's Top Box Percentage. The "Top Box Percentage" is the

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percentage of employees who select the highest possible score option indicating that they “Strongly Agree,” *the most positive result*. Research suggests a difference in the loyalty of the people who indicate that they are extremely satisfied (i.e., “Strongly Agree”) compared to those who are just satisfied (i.e., “Agree”) when rating their experience or engagement. When leaders examined the employee engagement measure focusing on Top Box results, it provided a more strategic approach to evaluate the degree by which employees perceived their own engagement within the organization. The more positive these results in Top Box the more likely employees would be loyal to the organization and remain in the district (Gallop, 2020). By monitoring this metric, these results made it possible for the district determine if they were at risk for employee turnover.

CSD’s fall survey indicated that 44% of all employees rated the organization a five, which meant that only 4 in 10 employees *strongly agreed* their district and school leaders created a work environment that supports their ability to perform at the highest level. These results indicated that if the district were to engage employees, and provide an environment that leads to high performance, they needed to look closely at the item analysis and determine specifically how to improve in these areas. Superintendent Day then applied Top Box to each item as they examined the overall survey closely. Using Top Box as a strategy to monitor employee engagement the Superintendent was able to target particular survey items that had a weak Top Box and work with leaders during the rollout to find solutions. They also defined what success would look like if they were “best in class” with each of these highest and lowest rated areas. This gave each leader

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 specific strategies for improvement that helped them meet the success criteria generated
 by employees and staff.

**Table 1. Employee Engagement Survey Participation, Overall Mean, and Top Box
 by Survey Administration**

Employee Engagement Survey	Fall 2019
Participation	185
Overall Mean	4.21
Top Box Percentage	44.06%

The survey results also helped by identifying practices that district leadership was doing well and reminded them to continue to do them. In Table 2, the CSD had the opportunity to recognize and celebrate the five highest scoring categories ranked by employees in the organization. When leaders and individuals are celebrated, not solely based on the numbers from the survey, but on their actions and behaviors, it creates a new momentum toward improvement (Pilcher and Studer, 2015). One great win for Superintendent Day and his leadership team was the achievement of establishing a “clear understanding of the mission and goals of the school district.” This validated the intentional efforts of the CSD’s leadership as they strived to align their system. In the fall survey, it had already become evident that the district’s mission, vision, and values were taking hold throughout

Improvement Science: Improving Employee Engagement the system. Areas that they had worked on, recognition and gratitude and system alignment appeared in the top five highest rated items on the survey.

Table 2: Employee Engagement Areas Working Well: Five Highest Mean Items Fall 2019 Results

Item	Mean	Top Box
5: Concern for my welfare	4.46	61.75%
4: Recognition of good performance	4.38	56.83%
1. Provides good resources helpful for my job.	4.38	53.80%
3. Effective staff meetings	4.36	51.65%
C4: Clear mission and goals of district	4.31	39.78%

Leader Led Results Rollout

Another important *Always Action* that CSD implemented was a leader led *results rollout* of their employee engagement survey. To dig deeper and get specific feedback and clarity from employees, each district leader across all levels of leadership met with their direct reports to get more feedback by having them elaborate and on their results. The leader led *results rollout* impacted the continuous improvement cycle by providing critical and actionable feedback for improving staff engagement. By inviting stakeholders to participate in a transparent discussion of the results and actively listen to understand what needs to take place to improve each area, increased employee's ownership of the

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process. This also validated each district leader's successes in an important way. The rollout process included hearing positive feedback from their own faculty and staff on what was already working. This commitment to timely, regularly scheduled transparent rollout of the data results demonstrated the value of data to all stakeholders engaged in the process.

The Cascades School District asked its leaders to roll out the top three and bottom three scoring items from the survey to all direct reports. There were two main purposes for sharing the top three results: 1) to celebrate the wins and successes that were going well, and 2) to gain clarity and specific feedback about leader behaviors and actions that yielded these results. This information served as a way of showing leaders the employee's perceptions about "what right looked like," and how to create leader actions that would lead to improvements based upon this feedback.

There is vulnerability in the results rollout process as leaders place themselves in a stance to listen and receive feedback. Each administrator's ability to listen to employee voices and learn how to improve helped them build authentic relationships with staff and conveyed a message that employees voices and perceptions were valued. Consequently, when leaders committed to one or two strategic actions for improving those scores and followed through with them, they began to build credibility through reliability, a behavior essential to executing improvement and building trust (Pilcher and Studer, 2015).

Establishing this shared problem solving and learning with departmental and school faculties and staff hardwired each level of the organization with a common strategy.

These actions also began to break down silos when leaders and staff reached consensus.

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This consensus also created a common understanding of what improvement priorities mattered to employees and how to identify specific actions to respond.

The lowest three scores for the CSD are represented in Table 3. Because “leaders go first” (Pilcher and Studer, 2015), Superintendent Day rolled out the district results to his direct reports and other district leaders. His action plans were developed based on the feedback he received from these stakeholders and modeled for other leaders how to participate in the transparent sharing of data. He then set an expectation for his executive leaders to do the same and roll the results out to their staff.

Table 3: Employee Engagement Survey Areas for Improvement: Three Lowest Mean Items Fall 2019

Employee Engagement Survey Item	Mean	Top Box
C1. Honest two-way communication	3.94	29.83%
13. Decision making in the best interest of the district.	3.91	30%
11. Finance management	3.85	21.47%

Using Leader Rounding to Check-In with Stakeholders

As leaders received input from the rollout of data and other key metrics on their scorecard, they needed to continue to check-in with faculty and staff. They needed to be sure improvements and communication were cascading throughout the system. They began to hardwire a process called Leader Rounding. Inspired by the healthcare profession, leader rounding is a tool that enables a leader to create an ongoing

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These are the four questions that were standardized early in the process:

- What's working well?
- Is there anything I can help you with right now?
- Do you have what you need to do your job?
- Is there anyone I should recognize for doing great work?

CSD leaders engaged in leader rounding and tracked each check-in on a district designed leader dashboard. The dashboard was used to identify key themes around successes, identifying barriers and solving problems from employees and staff. Implementing rounding and sharing themes across departments and buildings allowed CSD to monitor their execution and make needed adjustments as quickly as possible.

Results that Matter

Six months into the improvement work, CSD saw significant results. One of the earliest shifts came because of hardwiring two behaviors: results rollout and leader rounding. Results rollout provided important information for how to improve employee engagement. The leader rounding helped district and school level directors and principals' check-in and hold themselves accountable to their employees as they followed through implementing the strategic actions they had committed to during each of their

Improvement Science: Improving Employee Engagement results rollout. In the first six months, leaders had rounded with direct reports 138 times, greatly increasing communication and deepening relationships with employees. The rounding session helped identify key barriers to progress, and identifying where more direct communication was needed. Table 4 shows the significant improvement in Employee Engagement results from fall to spring.

Employee Engagement Survey Results	Fall 2019	Spring 2020	Change
Overall Mean Score	4.21	4.40	+0.19
Top Box %	44.06%	54.59%	+10.5

(Table 4. Employee Engagement Fall 2019 to Spring 2020)

Table 5 illustrates the changes in the lowest three survey items for the district. These results were attributed to the hardwiring of key *Always Actions* that aligned behaviors that became a catalyst for improvement.

Employee Engagement Survey Item	Mean Fall	Mean Spring	Change
C1. Honest two-way communication	3.94	4.19	+0.25
13. Decision making in the best interest of the district.	3.91	4.26	+0.35
11. Finance management	3.85	4.06	+0.21

(Table 5. Bottom Three Improvements from Fall19 to Spring 20 pending Huron Copyright approval)

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CSD as an organization had begun to shift from the *we/they culture* they had once been, to a culture that became an employee rated *best place to work* by focusing on people first. Although their journey is not finished by any stretch, their readiness level to face change, respond with resiliency and operate as an aligned system became a major step in sustaining improvement and achieving ongoing results. This case used several key tools from Improvement Science. PDSA cycles, Leader Rounding, and Results Rollouts were all key components used to gather data, monitoring and refine practices as they were happening.

Conclusion

Continuous improvement is more than tools and tactics, it is about creating a culture that values and engages people. To do so, the Cascades School District learned that they had to have clearly defined core values, and for each decision and change that was made, these strategies and ideas needed to align with these values. As disruptions occur like Covid-19, it was extremely important to know their identity through their values and it allowed CSD to put students, families, and employees at the forefront of those critical decisions. In addition to this, they also learned that employee engagement begins with neutralizing toxic behaviors like *we/they* and replacing these with positive behaviors like *recognition and gratitude*. This cultural shift only comes when these behaviors are hardwired and embedded in a district's system of improvement (Studer, 2004). CSD learned that to get results, engaging with employees and staff had to happen first.

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Secondly, CSD needed to have all leaders and employees participate in shared ownership of the improvement process. Critical actions such as leader led results rollout and creating forums for two-way communication gave all stakeholders a voice that would provide valuable information in prioritizing what improvements needed to take place first. CSD Superintendent modeled and encouraged others to live the phrase, “leaders go first,” and in doing so, built trust, reliability, and consistency as part of their improvement process. The cascading of communication, and the voice of the customer (students, parents, employees) helped develop district and school leaders who learned to value feedback and learned to use it to harvest and celebrate wins across the system.

To identify these wins, the CSD had to create a paradigm shift in thinking about data and measurement. They needed to understand practical measures that would inform their ability to overcome barriers and create improvements in the system. This at first presented a dramatic shift from the traditional “measurement for accountability.” Like most K-12 systems in the United States, they had spent decades grappling with this approach, but it had led to little or no results (Carnegie, 2020). To learn and practice the cycles of improvement, they had to trust practical measures would help them achieve results. The district developed a comfortable cadence “to go slow to go fast” to allow individuals to learn and digest this new shift (Carnegie, 2020). Once the emphasis focused on learning to improve versus measure for accountability, system stakeholders embraced the learning and understood a new type of accountability to mean, “you can count on me.” In an unprecedented year of disruption, this new definition of accountability was a powerful shift that led CSD to become one of the most agile and

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earliest districts in their state to respond quickly and adjust. They did so without losing sight of their values, goals, and processes. In fact, the second round of their Employee Engagement results that showed another increase in results, was administered in the middle of the Covid-19 crisis. CSD continues to improve and achieve results.

To keep their aims in sight, they used a scorecard to align goals, measures, and strategic actions, as well as designed a dashboard to monitor progress, sometimes daily. Incorporating the stoplight reporting, so they each leader could visually represent the degree of implementation and signal when an adjustment was necessary to overcome barriers getting in the way of improvement. When CSD built systems around improvement, when they valued people first, and when they made learning the outcome, they began to see improvements that led to results. An improvement journey that Cascades School District will continue.

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CHAPTER FIVE**Building Resilience in an Organization: Using daily Huddles and Rounding for Outcomes to Withstand Uncertainty During a Pandemic and a Raging Wild Fire**

This work was previously published:

Carpenter, R. (2021). Building resilience in an organization: Using daily huddles and rounding for outcomes to withstand uncertainty during a pandemic and a raging wildfire. *School Administrator*, 78(4), 31–34

Last September, one of the largest wildfires in central Oregon’s history scorched and ravaged 138,000 acres and came within a mile of our schools and downtown Estacada. The catastrophe wreaked havoc across most of the school district’s 750-square mile footprint.

District employees and all 1,800 students’ families were displaced from their homes due to evacuation and, in some cases, houses and businesses were destroyed by the flames. Simultaneously, families and educators were mitigating the coronavirus pandemic through stringent state guidelines and safety requirements, which already were stressing the school system.

One threat was clearly visible. The other, being invisible, was just as threatening.

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Despite the complexity of these challenges, what prevented a breakdown of Estacada's school system were the robust processes and routines we had previously developed that strengthened our organizational resilience.

We recognized from our training that resilient organizations lead with empathy, align their focus and reliably execute toward an outcome. Facing both the COVID-19 threat and what was labelled the Riverside Fire, the organization had to make quick decisions, become agile, make bold adjustments, monitor actions, and follow a process to cascade clear communication throughout the system.

One critical challenge Estacada faced was shifting guidance that was the result of states and agencies facing the unknowns of the pandemic. To stabilize our system and minimize any anxiety and confusion, Estacada made two-way communication a priority. By utilizing two key leader practices, daily leader huddles and leader rounding, we were able to stay focused on our priorities for safety and high quality learning.

Daily Huddles

One of the most consistent and reliable practices I used as superintendent in our district of 1800 students, was the Daily Leader Huddle. When we were forced to operate remotely, I needed to find a way to maintain a connection, due to anxiety caused by uncertainty and the rapidly changing conditions. We needed a forum for decision making and sharing information.

I adopted a highly structured agenda that divided time into important categories across 30-minute connections. The huddle involved 19 senior administrators in the

Improvement Science: Improving Employee Engagement district and was not designed to solve the emerging challenges, but was intended to make short, daily connections, celebrate quick wins, and identify where people felt stuck. Each huddle closed by focusing on one or two things people could do during the next 24 hours.

These daily meetings helped leaders rally around a goal and validated any incremental change that led to a win, turning anxiety into positive energy that propelled the district forward despite the uncertainties. The reliability of committing to these huddles and the consistency of holding them daily, built important trust with the district leaders. The timely communication across the system created trust with the staff.

We credit these daily sessions to Estacada scoring its highest employee engagement score on the Studer Employee Engagement survey. The survey which measures employees' perceptions about the workplace. In the spring of 2020, Estacada increased their employee engagement mean by .19 points on a scale of 1-5, and improved their overall mean from 4.21 to 4.40 (See Figure 1 below).

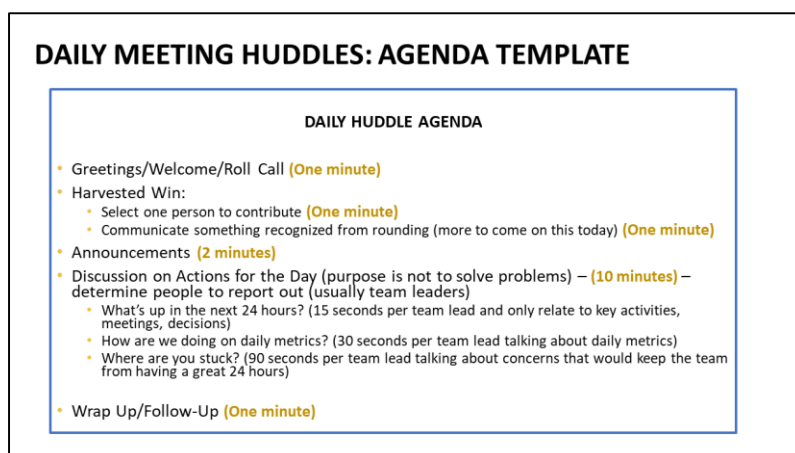


Figure 4: *Daily Leader Huddle Template*

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The rapid response from these daily huddles also made a real impact on the community. Within 10 days of the initial shutdown, Estacada was able to reach all children and families who were food insecure, using bus drivers to deliver meals across the wide district footprint. The transportation and food service collaboration was one solution that resulted from these administrative huddles. We became a model for school districts elsewhere when *Time* magazine gave us national attention for engaging our district transportation for meal delivery during the first month of pandemic-related closures.

We made the daily huddle a habit and had developed a reliable process for extending our capacity to respond to disruption. Huddles increased our agility and resiliency for tackling the Riverside Fire displacement in mid-September. The fire was officially contained in early December.

Leader Rounding

During our leadership meetings, I realized the importance of developing feedback loops. These personal connections helped us to recognize both bright spots and blind spots.

Leader rounding was another process we chose to ensure all voices were heard before decisions were determined. In Estacada, we had been routinely using leader rounding on outcomes for about six months. We had gathered feedback around improvements that were identified through our employee engagement survey. We found it validating and helpful to ensure that our strategies were achieving the desired results and that employees saw positive changes.

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Rounding on an outcome is an intentional process that asks four primary questions to gather information from stakeholders throughout the school district:

- What is working well?
- Is there anything I can do to help you perform your best?
- Do you have what you need to do your job?
- Is there anyone you would like to recognize who has been especially helpful to you?

Hardwiring rounding into leader behaviors, we now had another process for gathering feedback as shifts occurred. Capturing our employees voice and making personal connections during a time when staff felt isolated enabled us to check in during each new challenge (the coronavirus quarantine, the re-entry process and the fire evacuation).

Our district used leader rounding feedback to identify themes around areas of improvement. One evident theme was the need to improve special education students' access to the general education classroom. Rounding also confirmed that instructional assistants needed support for specific skill development as they worked collaboratively with general education teachers to meet student needs.

A staff committee representing all classifications convened to design an improvement project to better understand and eliminate the barriers around inclusive practices. A critical system improvement designed by the committee to support the instructional assistants resulted in "boot camp" training. The training provided paraeducators with toolkits and instructional practices that proved effective in supporting

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our most vulnerable student population. Estacada increased the percentage of students with an IEP in a general education classroom by 12 percent during 2019-20.

By the fall of 2020, Covid-19 fatigue, coupled with a large wildfire that left our community exhausted, a different type of challenge emerged. The conditions created shifts in Estacada's employee's workplace perceptions and our district was now facing fractures internally and externally around re-entry preferences. Our community favored phasing in our student's return to school, especially since many families had been displaced by the fire, while employees sought assurances regarding safety. With rounding, we identified stakeholder's concerns and create a targeted communication plan. I was then able to work with the board, the community, and employees to assure them that whatever re-entry approach we determined, students would receive a high-quality education and the safety of everyone would be our highest priority.

Not Losing Sight

An important facet of Estacada's organizational resiliency also came from not losing sight of the strategic priorities that had been laid out in a 2018 strategic plan, Envision 2030. Many might wonder how any district undergoing the unpredictability of the pandemic could maintain its focus on offering high-quality learning opportunities for students. By creating robust processes that placed the stress on the system, not its people, we were able to keep moving forward, achieving desired results and living out our mission.

Daily Leader Huddles and rounding enabled the district to identify wins and recognize individuals who were demonstrating the district's values in their work. Senior

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administrators were able to develop an emotional bank account of trust and become our most helpful asset as the disruption waged on with no end in sight. Ensuring that people came first and leading with their core values, the district made key decisions that prepared leaders for the emotional consequences of change.

The intentional focus to collect employee voice led to improved outcomes. The effective focus on employee engagement led to the school district's recognition as a Top Workplace 2020 from The Oregonian, Oregon's largest news media outlet. This award highlighted employee satisfaction within the school organization. Estacada was the first public K-12 school district to receive this honor in more than 13 years.

This shared ownership and collective commitment helped Estacada's leadership team feel a sweeter kind of success -- one that comes from remaining deeply committed to living out the mission, vision, values and goals of the school district, despite the disruptions we experienced.

Chapter Six

A Pandemic and a Wildfire Evacuation: Serving Historically Underserved Students During Disasters

This work was previously published:

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Like many schools nationwide, children in our district experience adverse childhood experiences (ACEs) proportional to the national averages. Nationwide, approximately 38% of our students have experienced some type of traumatic event (Mendelson et al., 2015). ACEs are proportionate across racial and geographic groups (Whiteside-Mansell et al., 2019); children living in rural areas are at greater risk for adverse experiences, and children living in poverty within rural communities face unique challenges (Whiteside-Mansell et al., 2019). Events such as the pandemic and a local wildfire compounded and increased the effects of trauma with students already struggling with ACEs. The pandemic is also creating trauma through the sustained uncertainty and ongoing risk from ambiguous loss (Woods, 2020).

When a student is triggered, their responses to trauma manifest in behaviors that adults describe as “disengaged,” “dysregulated,” and “lacking perseverance”; the

Improvement Science: Improving Employee Engagement behaviors impede student learning. Without proper training and understanding, phrases such as “this is a *will* problem and not a skill problem” can often be heard by educators engaging with students whose behaviors impede learning. Unqualified diagnoses and misinterpretations of behaviors can lead to escalated behaviors and inconsistent support for the very students who need it the most. Professional development that increases knowledge in trauma-informed and restorative practices and helps staff identify barriers to student learning while practicing additional engagement strategies enhances student outcomes and reduces already existing educational disparities.

Context of the Estacada School District

This case study describes the improvement work of the Estacada School District (ESD) as the leaders used improvement science (IS) processes to develop collective efficacy with faculty and staff during the dual crises of the pandemic and a wildfire evacuation.

ESD is a rural public school district in the Portland metropolitan area of Oregon. ESD serves students in kindergarten through Grade 12 with two K–5 elementary schools, one Grades 6–8 middle school, and one Grades 9–12 high school (Carpenter & Peterson, 2019). The student population consists of more than 1,800 students and is 80% White, 17% Hispanic/Latino, 1% African American, 1% Asian, and 1% American Indian. Fifty percent of students qualify for free and reduced-price lunch, 10% were classified as English-language learners, while 16% receive special education services.

Estacada Middle School (EMS) enrolls 420 students supported by 37 employees, 20 of whom are certified classroom teachers. At 25%, EMS has the highest percentage of

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students in any ESD school receiving special education services. Principal Benjamin

Hargrave has served as the leader of EMS for 4 years, and under his leadership, EMS

embarked on a transformational leadership effort focused on a system-wide

implementation of a DuFour model professional learning communities (PLCs) for all

grade- and content-level teaching teams in the school (DuFour et al., 2016), eventually

using the PLCs to conduct IS efforts.

Several school structures exist in the ESD to encourage and support teachers in their development of curriculum and project design, including 8 days of professional development training and 2 hours every Friday to conduct PLCs. During this time, teachers regularly collaborate on student learning data and design intervention strategies together to improve student engagement and close learning gaps. EMS also uses Plan–Do–Study–Act (PDSA) continuous improvement cycles to create systems to efficiently and effectively address root cause problems and measure improvements. For the last 2 years, the ESD has partnered with Studer Education, a national consulting firm, to develop an evidence-based leadership framework (Studer, 2003) to further support the development of organizational excellence matching the culture of the ESD.

The Problem of Practice: Addressing Equity Concerns During Rapid Change and Uncertainty

Problems of practice are directly observable, actionable, and connect to a broader strategy of improvement (Elmore et al., 2004). ESD began the 2020 school year under complex learning conditions, amid a pandemic, a local wildfire, and rapidly shifting COVID-19 guidelines from state and federal agencies. The system had responded to the pandemic by successfully shifting to distance learning in the spring, but now their

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community had also faced a wildfire that displaced 100% of families and staff living within our boundaries. Recovery efforts once again placed basic needs ahead of all else. The district remained committed to serving students, families, and employees and kept a relentless focus on continually striving to provide the highest quality of education despite these conditions.

EMS did not want to lose sight of these district priorities and its larger aim of establishing high-quality learning experiences and opportunities for students. Additional subpar external conditions were impacting the inconsistent status of students' learning conditions due to the wildfire's disruption in power, a lack of access to the internet, and the displacement of students, families, and staff affected by the fire. Early in the process, EMS needed to identify who was affected and what barriers these external conditions had created for students, many already at risk in the system. EMS began to develop collective efficacy with faculty and staff which helped to focus on two actions to address the barriers brought on by the pandemic and fire:

- targeted wellness checks system for vulnerable students and
- ensuring engaging, high levels of academic learning.

Why IS Strategies Worked During the Crises

IS seeks to answer the question, "What works, for whom, and under what conditions?" In our case, addressing this question required that we adopt an improvement mindset and engage in inquiries related to our classrooms and schools. Six principles have been identified that are helpful to guide IS work in education (Bryk et al., 2015). These are (1) make the work problem-specific and user-centered, (2) focus on variation in performance, (3) see the system that produces the current outcomes, (4) you cannot

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improve at scale what you cannot measure, (5) use disciplined inquiry to drive improvement, and (6) accelerate learning through networked communities. IS provides educators with methods and tools to engage in inquiry around improving teaching and learning, collaborating to share promising practices, and learning from variation and scale practices that lead to improvement (Bryk et al., 2015).

IS replaces top-down reform initiatives that strip educators of their professionalism with a localized strategy for improvement and situates control over the educator's practice closest to the practitioner. Barriers are identified, problems of practice are developed, and change ideas are implemented on a localized scale, using quick, iterative PDSA cycles. Data for improvement are collected to determine whether the change idea should be abandoned, adapted, or adopted. The goal is to improve but to use early failures as a way to learn quickly. Once we have evidence that a practice works in one context, it can be shared through collaborative learning communities to be tested in other contexts. In this way, those closest to the problem are instrumental in the problem-solving process, and improvement can occur rapidly, in a specific context, and then expanded at scale. In our case, our PDSA cycles had to be conducted within 24-hour cycles. We learned what was working in one school and adapted that strategy to implement in another school, *or* we abandoned a strategy and tried another strategy during our 24-hour PDSA cycles.

The Need to Promote Collaboration and Build Collective Efficacy

Change often comes from a desire to improve. Isolation has been identified as a significant barrier to the implementation of effective improvement efforts (Eisener, 1992). Donohoo et al. (2018) write, "When teams of educators believe they have the

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Our Focus on Transformative Socio-Emotional Learning (SEL), Equity, and Restorative Practices

Although much is written about SEL and about equity, a new body of research examines critical linkages through the work of transformative SEL. Transformative SEL’s aim is to establish educational equity by creating equitable learning environments that produce equitable outcomes for children and young adults (Jagers et al., 2019). Educational equity occurs when every student of every race, gender, ethnicity, language, disability, family, or income background has what they need when they need it (Council of Chief State School Officers, 2017). The transformative SEL research posits that

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collective teacher efficacy, educators' collective ability to promote student learning, and the lessons we have learned from civic efficacy are essential to inequity transformation to foster SEL growth with students in schools (Jagers et al., 2019). Transformative SEL is described thus:

Transformative SEL connotes a process whereby students and teachers build strong, respectful relationships founded on an appreciation of similarities and differences, learn to critically examine root causes of inequity, and develop collaborative solutions to community and societal problems. (Jagers et al., 2019, p. 131)

To establish equitable learning environments, practitioners must also consider examining bias, committing to eliminating past practices that produced inequities, and creating new inclusive learning environments to support each child (Smith et al., 2017). The Transformative SEL Report recommends that schools focus on the following intentions when supporting students from diverse cultural backgrounds:

- cultivating a caring and supportive environment,
- explicit instruction of SEL competencies (CASEL.org),
- multiple supports for individual students, and
- instructional strategies that use collaborative and inquiry-based learning opportunities (Jagers et al., 2019)

The Collaborative for Academic Social and Emotional Learning (CASEL) developed Equity Elaborations that align with its five competencies: self-awareness, self-management, social awareness, relationship skills, and reasonable decision-making

Improvement Science: Improving Employee Engagement (Jagers et al., 2019). The Equity Elaborations were designed to emphasize communal values, positive ethnic-racial identity, and key components of self-awareness. The addition of the Equity Elaborations to its five SEL competencies helped provide pathways for constructive, collective efficacy and buffer children and youth from the “negative impacts of internalized, interpersonal, and institutional oppression” (Jagers et al., 2019, p. 168). This is particularly relevant to schools’ focus on decreasing inequities and supporting students’ SEL development.

Creating inclusive environments also means supporting students who are currently or who have experienced trauma and ACEs. Historically underserved students who are living in poverty experience living conditions that result in toxic stress (Centers for Disease Control and Prevention, n.d.). For students who have faced ACEs, many also have a mistrust of adults (Jagers et al., 2019). As a result of this mistrust, educators need professional training with trauma-informed practices to understand student reticence and behaviors that often manifest in children with adverse childhood experiences. Trauma-informed practices involve first creating a sense of safety in the learning environment, as well as promoting trust between the student and adult.

Managing Change Through Agile Leadership

Although it would not know the later impact of its ability to lead during the wildfire and pandemic crises, the leadership development that ESD began in 2018 as a means of operationalizing its strategic plan and aligning goals, values, and processes contributed to its ability to lead through the crises. Two years prior to the crises, Superintendent Ryan Carpenter engaged senior and site-based administrators in Studer

Improvement Science: Improving Employee Engagement Education's Evidence Based LeadershipSM (EBL) framework and the Nine Principles for Organizational Excellence[®] (Studer & Pilcher, 2015), which prepared the district to face its numerous simultaneous challenges. The EBL helped ESD align its goals, behaviors, and processes that operationalized the priorities of its strategic plan. To do so, senior leaders learned critical behaviors such as leader rounding, the rollout of data results, aligned action plans, and building a culture around improvement by engaging in regular expressions of gratitude and recognition. These practices helped them implement and test change ideas through continuous improvement cycles, feedback loops driven by leader rounding and survey administration to monitor progress, and nine leadership processes that drive results (Studer & Pilcher, 2015). The early commitment to organizational excellence created critical dispositions that contributed to agility across the system and allowed them to adapt quickly through daily PDSA cycles to manage their response to the simultaneous crises of the pandemic and wildfire.

Identifying Vulnerable Students During Virtual Schooling

EMS knew it needed to identify vulnerable students and to adjust its practices to meet students' needs. The leaders determined they would begin with online attendance as a measure, believing that if students were not attending, they might be vulnerable. The school recognized that the traditional methods of attendance did not fit in a virtual learning paradigm. EMS made the decision to define attendance by two-way communication. The intent was to ensure that students responded to the teacher's cues, questions, and feedback. However, "two-way communication" turned out to be a low

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standard for identifying effective teacher instruction, student learning, and high outcomes
for student success.

Using “rounding,” a simple, yet powerful, check-in tool borrowed from the health care field that builds relationships and allows educators to monitor and validate their theories of change (Studer & Pilcher, 2015). Rounding gives improvement stakeholders a way to generate a feedback loop around the changes they seek (Studer, 2003) and provides data regarding whether the change ideas were leading to the outcomes they were trying to achieve. Rounding revealed a common theme: Staff were more concerned about student engagement than attendance, and as a result, EMS adjusted its criteria to include more indicators for identifying vulnerable students and recognized that they needed to clearly define engagement.

EMS’s improvement team developed an engagement continuum to provide more guidance to teachers and staff for identifying student engagement. The continuum measured the degree of engagement by examining *how* students participated in the learning. Using data from the continuum helped teachers redesign lessons, helped administrators provide specific feedback to families when contacting them, and allowed the administration to determine which teachers were in need of support with virtual instruction. The engagement continuum described four levels of engagement

All EMS staff were then asked to complete the engagement continuum. The engagement continuum results showed that overall student engagement was low, and many students were not attending. The results also validated earlier inquiry from the

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 student attendance reports and the feedback leaders obtained from teachers during
 rounding.

The use of the continuum to identify students and families in need of support provided EMS with the data it needed to begin to cascade the work across all faculty and staff. Grade-level teams were formed and worked together to consolidate the data from the engagement continuum survey to identify vulnerable students by grade level. Next, counselors, administrators, and teachers identified specific students to reach out to and to make personal phone calls to throughout the academic week. Staff began with a small number of students with whom to make a connection. Over the next several weeks, the grade-level team monitored the improvement, maintenance, or regression of each student's engagement. Table 4.1 illustrates EMS's improvement over 3 weeks by grade level using a simple dashboard.

Table 6: Student Engagement

	6th Grade			7th Grade			8th Grade		
Targeted engagement continuum indicators	# Students not attending	# Students Participating and not completing	# Students fully engaged	# Students not attending	# Students Participating and not completing	# Students fully engaged	# Students not attending	# Students Participating and not completing	# Students fully engaged
Week 6	20	9	N/A	13	13	N/A	20	22	N/A
Week 7	18	8	20	19	6	22	17	9	25
Week 8	14	4	28	18	11	23	12	14	34

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Note: The table shows the last three weeks of the school year after having developed the grade-level rubrics.

The trends in each column elicited reflection from the staff to determine what next steps must be taken to increase engagement in virtual learning.

Early Learning, Engagement, and Care Connections

It was important to harvest and celebrate the early success as the school demonstrated increased engagement with its vulnerable population. After additional reflection, the team learned through the phone calls and personal contacts that many families needed access to materials and resources such as personal devices and access to the internet that were necessary for the students to be successful in a virtual school environment. Learning from this first PDSA cycle prompted the grade-level team, the team leads, and counselors to implement “care and connection” visits to the home of every student who had not been attending any classes for 2 consecutive weeks. However, during the wildfire, care-and-connection visits to student homes were suspended as the entire city had been evacuated. Instead, Principal Hargrave provided each staff member a list of 10 families whom they were asked to personally call on the phone, with students and families in the moderate- to high-risk groups called first (see Table 4.2).

Table 7: Contact with Vulnerable Families During Wildfire Evacuation

Students/families in high risk	Student /families moderate risk	Total number of families reached
Includes families who lost homes, property, animals were unable to secure shelter during the evacuation	Includes families who evacuated and stayed in a camping trailer/tent sheltered at an unknown property abandoned animals no access to internet or power	120 families contacted with personalized phone messages 200 calls leading to email follow-ups or messages
		430 Families

Principal Hargrave also provided staff with specific questions and call conversation protocols to facilitate the conversation between the families and the staff. The focus of these calls was to ask households specifically about student safety and to determine what resources were needed to reengage with learning so that the school might provide these supports when evacuated students and families returned to Estacada after the wildfire. Within 2 days, EMS successfully contacted 430 families. When EMS had completed conversations with each family, staff members published notes for the counseling and administrative teams to review. These notes helped EMS determine which families were the most vulnerable and most in need and, thus, a priority to visit once the city lifted the wildfire evacuation orders.

Principal Hargrave's staff and teachers were able to make data- and trauma-informed instructional choices about pacing and rigor after having these conversations.

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Teachers and staff felt much more confident that they had developed a strategy for

outreach and could make differentiated decisions regarding instruction and emotional support for their students in the aftermath of the fire and even while the pandemic still strained the system.

The process of implementing “compassion calls” highlighted the strengths of the school’s background in trauma-informed instruction. Once students were allowed back to our virtual school, many families and students received individualized attention. The “by-student, by-need” approach led to a reduction of stress and anxiety about school. However, we also learned that some staff did not attempt to make the compassion calls because of their lack of confidence, discomfort, or lack of knowledge of how best to communicate with families, which led to some families not receiving resources or receiving inaccurate information.

PDSA Cycles to Support Teacher Instructional Decisions

As we began to address student and family support, we also had to work simultaneously on supporting our teachers and instructional staff as they navigated the virtual environment. Instructionally, many teachers struggled to settle into the virtual setting. In addition to the regular professional demands of the teaching position, all teachers were introduced to a new learning management system and a virtual platform used to virtually connect to students and provide instruction. In order to ensure that there was no learning loss and each student had access to high-quality learning opportunities, the PLCs began implementing two strategic actions: (1) Each team committed to actions that supported a culture of collective efficacy, a shared set of beliefs and values about the

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quality and conditions for optimum learning, and their role in supporting this

environment. (2) Teachers committed to shared ownership of their data used to support decisions for increasing student success. As part of each PLC improvement effort, teachers participated in PDSA cycles to test their ideas and strategic actions. In addition, teachers were asked to document their teacher action plans and identify strategic actions for engagement practices and instructional practices designed to support student success. PLCs were asked to review their shared values and student data weekly to validate, monitor, and adjust their actions.

As teachers participated in these cycles of improvement, they were able to identify what worked and make adjustments for strategies and ideas that did not. Engaging teachers in first-time PDSA cycles revealed how collective inquiry leads to collective responsibility and an alignment toward a common purpose. At first, PLC teams' strategic actions were too broad. When team members began to implement the action, they learned that their strategic action was not as specific as it should have been. They also learned that the action was not being implemented across the PLC team, therefore, not leading to the results they had intended. Teachers made growth in clearly articulating their strategic actions and their progress monitoring measures.

Despite being in a pandemic and surviving a wildfire, EMS's language arts (LA) PLC decided to focus on "writing with elaboration including citing textual evidence." Each teacher used the previous week's formative assessment to inform their virtual small-group teaching. To measure progress, each teacher was to tally the number of students attending in small-group instruction. After the first 30 days of implementing the strategic

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action, the team reviewed the data and discussed the outcomes. The team learned that they needed to be more purposeful when deciding which students to include in small-group teaching. One teacher was using small-group time to build relationships because the students had not demonstrated any output for providing textual evidence. Another teacher was using small-group time to teach conventions of quotations when citing textual evidence. And a third teacher was walking students through a reflection about their misconceptions regarding elaborating. All three teachers realized their misalignment and decided to be more specific: Small-group time will be focused on earning a measurement of 2 on the standard as students' textual evidence did not fully describe nor support the argument of the text.

The team also learned that they did not know whether their strategic action improved proficiency indicators. To resolve this issue, Principal Hargrave leveraged the district's resources and the "ELS Dashboard" to provide weekly updates about the increase or regression of student achievement. Teachers then saw in real time whether their actions led to improved outcomes for students. The ELA team, at the end of the 90-day cycle, reviewed the achievement of students within the specific writing standard. The data revealed that despite all teachers engaging in the same improvement strategy, students did not make progress. The team celebrated their collective efforts to implement a consistent plan and then abandoned the strategic action. In their particular context, the strategy proved to not work during distance learning, given the students' and teachers' strengths and weaknesses. Next, the team decided to adopt a new strategic action in order to achieve the school's goal.

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Using Improvement Cycles and Aligned Actions to Combat Chronic Absenteeism

Grade-level PLC teams decided to focus on chronic absenteeism, which had begun to increase in the second month of school, as well as on how to improve the academic outcomes of students. Through the relationships we established with families, we learned how the rigors of the virtual instructional model impacted student mental health and wellness and their engagement in the learning model. We also learned that misconceptions and misinformation were being given from students to families. The grade-level teams and the PLCs worked collaboratively to ensure that the instructional, cognitive, and workload demands being put on students were appropriate for age, development, and context. The teams also developed a communication plan, through Facebook Live events, as well as within their instructional days, to clearly communicate the expectations to families and students.

After we tried a new change idea and adjusting our instructional model, and based on what we learned from communicating with families and the collaborative approach between the grade-level teams and the PLC teams, we made adjustments to our instructional model. After this adjustment in November, we experienced a decrease in student chronic absenteeism (see Table 4.3). With increased engagement in school, there were more opportunities for our PLC teams to execute their strategic actions and improve student outcomes.

Table 8: *Percentage of Students Missing More Than 20% of the Day*

	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>
<i>Grade</i>					

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6th	19%	33%	41%	29%
7th	34%	47%	54%	36%
8th	29%	60%	67%	40%

Overcoming Sustained Uncertainty Through Connection and Care

ESD’s relentless focus on providing high-quality learning opportunities in a remote environment amid the ongoing pandemic and wildfire evacuation made it clear we needed to operate with empathy, care, and connection. Employees, students, and families were experiencing ambiguous loss during a time of lasting uncertainty. Ambiguous loss is any loss that is unclear or lacks a resolution. This loss can be physical or psychological and often is discussed around unresolved death or tragic circumstances (Jagers et al., 2019)). The wildfire further exasperated the loss, but with a natural disaster, there is some resolution that eventually occurs. One year after its onset, the COVID-19 pandemic had not yet had any resolution; with that lack of resolution comes fatigue and stress, especially in communities of color and those living in poverty (Wedell-Wedellsborg, 2020). These circumstances reminded both district and school leadership that employees, families, and students needed to feel safe and connected during the disruption.

As ESD’s leadership addressed the impact of the pandemic, they found ways to support employees as they remained committed to ensuring all students had access to high-quality learning. EMS’s staff made strategic and heroic efforts to engage students in virtual learning; they put their students in the best position to improve academic

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outcomes. Boundaries between professional and private life became hard to balance since no teacher wanted any student to feel uncertainty or be unable to access learning support. Most teachers made themselves available to support students at all hours of the day. It was not just teachers who were exhausted. Students were also stretched in new ways and needed time to react and settle into the new learning routines of virtual school, especially because the fall started with students being taught new technology skills, being asked to manage time independently (without a bell), and were, for many for the first time, the initiators and participants in their learning rather than participants in their learning. Families managed full-time work with full-time classroom management. Many parents and guardians reported emotional outbursts from their students at home. Families also expressed burnout as well as confusion: “How is my student not making gains and being marked absent? They are in the front of the computer for five hours each day.” For a school community, high-quality learning with high expectations for success also carried an unintended consequence: fatigue.

To address fatigue, EMS focused on climate, care, and connection. Structurally, EMS adjusted the virtual bell schedule to allow for a 10-minute break between academic classes. These extended separations between classes reduced the pressure students and staff reported because of the fast pace without the breaks. The time also provided an opportunity for students and staff to prepare for the upcoming class. A structural change, like the adjustment of the bell schedule, improved the overall confidence in the school and showed staff and students alike that their voices were being listened to and that action

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was being taken because of their concerns. Adjusting the bell schedule caused students to indicate this was a very positive adjustment (22%) or a positive adjustment (39%).

Additionally, the follow-through of a traditional Spirit Week served as a positive, fun break from the rigors of maneuvering distance learning. The school utilized the grade-level-team systems, when reaching out to vulnerable families, to make personalized invitations to participate in Spirit Week. More than 73% of students indicated that Spirit Week was fun and that they were likely or very likely to participate again in a Spirit Week.

Conclusion

Without a culture of EBL, critical fundamentals such as focusing on measuring what matters, hardwiring behaviors and aligning actions to ESD's core values would not have been possible this early in the improvement process. Those early fundamentals were essential when facing two high-stakes crises such as the Riverside wildfire and a global pandemic at the same time. The improvement process also brought forth trauma-informed educator development needs that were tested by these events. Leadership and staff were able to be mindful of equitable support to students and families. Through a vision of care and connection and trauma-informed teaching practices, EMS developed an emotional bank account with both the employee workforce and the school stakeholders. Principal Hargrave's frequent collection of employee voices through rounding developed the resiliency of the teachers, promoted more effective classroom practices to better meet the needs of each student, and effectively identified which students needed specific supports. EMS continues to improve its results for all

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students, as well as building an inclusive culture for children of all backgrounds, while
hardwiring IS tools to allow staff and students to thrive.

Discussion Questions

1. How might we redesign how we prepare and support school leaders so they more effectively support their communities experiencing trauma-inducing events?
2. How might the six principles of improvement science guide your work to address collective efficacy in your site during events such as a pandemic, a wildfire evacuation, or other natural disaster? (Bryk et al., 2015, note these principles: [a] make the work problem-specific and user-centered, [b] focus on variation in performance, [c] see the system that produces the current outcomes, [d] you cannot improve at scale what you cannot measure, [e] use disciplined inquiry to drive improvement, and [f] accelerate learning through networked communities.)

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Chapter Seven

Next Steps for Improvement Science in Educational Reform

Now serving in my 4th year as a superintendent of the Estacada School District, my leadership team and I have used Improvement Science and the Evidence Based Leadership (EBL)™ framework to execute all aspects of the school district's strategic plan (www.estacada.k12.or.us). The Estacada School District is a public school district in the Portland-metro area of Oregon. The Estacada School District (ESD) serves students in grades K through 12 with two K-5 elementary schools, one 6-8 middle school, and one 9-12 high school (Carpenter & Peterson. 2019). The student population consists of more than 1800 students and is 80% White, 17% Hispanic/Latino, 1% African American, 1% Asian and 1% American Indian. 51% of students qualify for free and reduced lunch, 10% were classified as English language learners, while 16% receive special education services.

Since embedding Improvement Science into the culture of the Estacada School District, the school district has received recognition at both national and state levels. In 2020, the Estacada was voted by its employees as a “Best Workplace” and featured in the largest newspaper in the state of Oregon. Estacada was the first school district to receive this honor in over 17 years. This recognition displays evidence of high employee satisfaction during the peak time of the pandemic. In 2020, the Estacada School District was also recognized by Solution Tree as a Model Professional Learning Community District; we embedded Improvement Science strategies into our PLC structure. The ESD

Improvement Science: Improving Employee Engagement is one of only 13 districts in the world to be recognized for the entire school district as modeling high levels of collaboration using the model designed by Rick DuFour (1998). The Estacada school district has also been featured nationally by Time Magazine (Bakalar & Carlisle, 2020), Studer Education (Gagliardi, 2020), and The Katie Couric Show (Bonn, 2020), and was voted by its employees as a top workplace in state of Oregon (Jeffries, 2020).

High Stakes Change in Post-Pandemic Era

It has been 18 months since the majority of schools in the United States initially closed during the initial outbreak of COVID 19. As we move to a time when we know more about the pandemic and can safely educate our nation's children, we know that school leaders will be making continuous adjustments make to meet the educational needs of their community. We know school districts will need to re-engage the employee workforce on campus. More than ever, education organizations need to reform their systems. "One size fits all" never worked, and now we have a great opportunity to re-imagine public education. Many battles have been waged to reform funding formulas; to offer school choice for families; to argue for services that are push in, pull out; to include or exclude. Each effort had the goal of addressing systemic racism, cycles of poverty, and improving daily classroom instruction through differentiated modalities. In order for public school systems to survive the ever-changing educational landscape, including the growing competition of new school education options for families that were created during the pandemic, school district leaders will need to focus on improving systems and creating options that families want, where students are successful, and teachers thrive. I

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am proposing a different type of reform, one that engages teachers, families, and the community, that uses data, is specific to the needs of each particular school, and is successful not in another state or another country, but in each unique school. This is a type of reform that ensures high expectations, high support, quality service, and a revitalized workforce.

The Need for a Different Type of Reform

To tackle the difficult challenge of engaging employees while preventing employee and leader burnout, reform efforts must shift from top-down mandates to a model that situates the power for change with those closest to issues of inequitable student outcomes (Darling-Hammond, 1994). Top-down reform efforts often suffer from a lack of employee support or even outright revolt and fail to address the following three areas of need: (1) the need to foster inquiry using leading data; (2) the need to promote collaboration throughout the organization; and (3) the need to develop professional knowledge base for short cycles of improvement. Consequently, organizations have begun investing in the development of leaders who respect and encourage employee engagement, knowing that supervisory behavior changes will significantly engage employees (Carpenter & Peterson, 2019). Despite growing investments in supervisor development, limited research exists on the impact the employee engagement strategies have on supervisors and leaders.

The Need to Foster Inquiry Using Leading Data

In order to make progress on developing effective leadership practices, a different type of data is needed: data FOR improvement (Bryk et al., 2015), not data to

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show whether you improved last year with students you know longer have in your care.

Standardized test results, disseminated long after students have left a particular classroom, provide data for *accountability*, not data for improvement, *and* have little value for effecting change efforts needed now (Carpenter & Peterson, 2019; DuFour, 2010; L. M. Gomez et al., 2016)

Collecting and analyzing data for improvement requires that actionable data be collected and analyzed by those close to the work in order to assess the effectiveness of a particular process or intervention (Bryk et al., 2015). If we want to determine what structures work best for employees, for whom, and under what conditions, we need to enlist employees' help, i.e., those who actually *do* the work (Darling-Hammond et al., 2007; Studer, 2009). for example, if we want young learners' day to start off right from the moment they get on the school bus, we need to solicit student voice and engage in short cycle improvements to make students feel welcome, safe, and inspired on the bus. We need to collect data from leading measures and continuously adopt, adapt, and adjust strategies to make improvements (Studer, 2004; Studer & Pilcher, 2015). But how many districts today engage with their bus drivers to measure student experiences on the bus? Reform efforts that support employee inquiry, recognizing them as knowledge creators – agents that synthesize and integrate relevant information from different contexts into their own practice are needed to help employees take ownership of their own improvement process (Studer & Pilcher, 2015).

Reforms that focus on cycles of inquiry promote ownership of both the knowledge and process in which new knowledge about effective leadership strategies is gained (Senge, 2006). However, it is not enough to only focus on individual inquiry; in

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order to generate a shared knowledge base, leaders will need to share information and try out each other's practices, analyze the impact of the practice, and to determine if those practices work in their context.

The Need to Promote Collaboration Throughout the Organization

Isolation has been identified as a significant barrier to implementing effective reform efforts (Eisner, 1992). Effective practices are often developed by individual teachers but fail to scale past a few classrooms, if at all (DuFour & Eaker, 1998). Reforms that reduce isolation and build learning communities have emerged as one way to spread effective teaching practices (K. Gomez et al., 2015). Collaboration and opportunities for dialog help create ownership and aligned behaviors to the mission, vision, and values of the organization. These intentional relationships serve as a structure to promote the development, spread effective leadership actions and develop a shared understanding that allows leaders to provide feedback on reform efforts that feel inauthentic or inefficient to meet the needs of their schools and departments.

The Need to Develop a Professional Knowledge Base for Short Cycles of Improvement

The adoption of an Improvement Science (IS) approach to leading organizations and improving employee engagement has gained popularity in education. IS keeps leaders in a mindset of continuous inquiry and growth and provides the tools and processes for short cycles of improvement rather than relying on fixed and sporadic strategies. Application of IS cycles of improvement in educational organizations has been attributed to cultivating strong employee teams, creating systems of problem-solvers, and implementing efficient strategies that ultimately lead to cost-saving

Improvement Science: Improving Employee Engagement measures within school systems (Bryk et al., 2015; Senge, 2012). The development of IS orientation to problems and change is a promising way for educational leaders to tackle the shifting landscape (Darling-Hammond et al., 2007).

While IS methodologies started primarily in the medical profession and have transformed hospital leadership throughout the world measuring employee engagement, quality service to patients, and executing complex change at scale, IS is still an infant framework in educational organizations. IS guides leaders through the processes of using data to identify improvement opportunities, collective or shared ownership, and areas to recognize and reward success (Studer & Pilcher, 2015). Leadership practices that incorporate data analysis and short cycles of improvement to inform systems and processes are more equipped to address barriers efficiently and equitably (Carpenter & Peterson, 2019).

Employee Engagement: Start with People First

In order to fully realize the kind of improvement that leads to sustainable results, an organization must build its systems and processes around *people first* by hardwiring actions that create a readiness for continuous improvement (Studer, 2009). When organizations hardwire behavior, they practice and standardize behaviors until their employees are engaging in them 99% of the time (Studer & Pilcher, 2015). Alignment and consistency of behavior allows an organization to scale the desired improvement throughout the system.

Leader Huddles: Creating Routines to Learn and Improve

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One great activity to develop district and school level leaders in collaboration and connection is to host “Daily Leader Huddles.” These short-cycled meetings provided time to introduce key leadership expectations, actions and processes that aligned with the core values of the school district. Together, leaders focus on solving real problems, eliminating barriers, and making adjustments, while using improvement tools that keep leadership teams aligned (Carpenter & Oropallo, 2021). These short cycles of improvement (PDSA cycles) produce evidence to determine if a change was an improvement, determines whether the leaders need to make any necessary adjustments, and helps the school organization harvest evidence-based successes that served to boost morale throughout the district. The Estacada School District utilizes these routinely scheduled Leader Huddles to drive small incremental improvements. Typically, led by the superintendent, the entire district leadership team meets every 30, 60 and 90 days, learning and adjusting as they monitor evidence of their actions and slowly begin to improve their processes. Overseeing their improvement in this way helped the Estacada School District learn and make progress toward their annual goals. The district’s leadership team and I made the commitment to routines and the monitoring of leader actions to help each leader become accountable to the district’s overall progress and move closer toward results. From these activities learning has increased among the district and building leaders, and critical systemic processes overall have begun to improve (Carpenter & Oropallo, 2021). During each huddle, leaders in the Estacada School District are accountable to the group to indicate whether they had been able to “do what they said they were going to do” and provide evidence from leading measures to explain their results. Two key questions drove

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individual leadership accountability as each leader took their turn answering these

questions:

- Did you do what you said you were going to do?
- What did you learn?

Close examination of Estacada's leader progress revealed insights about what they were learning from each action and determined if an improvement had occurred (Studer & Pilcher, 2015). As leaders gained the fundamentals of improvement, they quickly began to harvest successes.

One example of leadership using IS in the Estacada School District. The Principal of Estacada Middle School (EMS) and his building leadership team developed key systems for improving the safety and cleanliness of the school. When students were receiving communications from the school and classroom teachers, the middle school team intentionally included pictures of clean spaces, custodians fogging desks, and other various pictures of their school building. They had already received baseline data they had collected from students the following spring. The Middle School improved their rating from a 3.28 baseline to a 4.17 (5-point scale) in 6 months. By creating a practical leading measure and holding themselves accountable to the leadership team during Leader Huddles, they were able to improve their processes, create efficiencies that would later prove to be crucial. When they later asked students what made the difference? The students overwhelmingly communicated it was the photos in the various school communications (Peterson & Carlile, 2022). Small incremental changes such as were made in EMS helped cascade communication and processes across the system and

Improvement Science: Improving Employee Engagement provided the Superintendent and his leaders with important learning about their improvement process (Carpenter & Oropallo, 2021).

Leader Rounding: Harvesting Wins and Supporting Stuck

Leader rounding for outcomes, is an essential behavior that must absolutely be hardwired into a school organization in the “new school” era. Leader rounding (Studer, 2004, 2009; Studer & Pilcher, 2015) is a tool used by leaders to frequently check in and ask the following questions:

- 1.) What is going well in your work right now?
- 2.) Who can I recognize that has been particularly helpful to you?
- 3.) Do you have the resources you need to do your job well?
- 4.) Is there anything we can do better?

Leader rounding is a tactic that, first and foremost, helps us establish positive relationships with others. By encouraging leaders to engage in this action, we retain an engaged workforce. When leaders round, it is key for them to recognize employee’s needs (Studer & Pilcher, 2015). Focusing on the positives in leader rounding is important and it will instill purpose within employees, it will make their work seem worthwhile, and will make a difference in overall engagement (Studer, 2004). It is absolutely essential for leaders to harvest wins from within the organization. Not only does this feel good, it helps tell your story to the employee workforce, the families of your school district and the community at large. The Estacada School District places “Harvesting Wins” at the top of every meeting agenda throughout the organization. This allows the leaders to

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recognize others for aligned behaviors and significant gains from the continuous improvement work.

The Estacada School District has made a commitment to celebrating harvested wins by hand writing thank you cards to employees exhibiting aligned behaviors.

For example, the human resources department conducted leader rounding for outcomes every 90 days with new hires in the district. The purpose of this rounding was to 1.) ensure new hires have the opportunity to share their early experiences in our organization; 2.) measure to ensure that they have all the resources they need to be successful, 3.) ask if there is anything we can do better, and 4.) ask who the HR department could specifically recognize for helping them acclimate in their new workplace in our school district. In just one year of a system-wide commitment to celebrating ‘what right looks like,’ the Estacada School District leadership team wrote over 3,000 thank you cards. That is 3,000 acknowledgements of aligned behavior. In addition, in just six months of rounding with the school district’s new hires, the Estacada human resources department was able to recognize 93 employees for their aligned behaviors in helping new employees feel successful in our organization.

In another instance, district and building leaders utilized data from Leader Rounding. Leader Rounding is a process for simple check-ins with employees and staff that create feedback loops that help to identify key themes around successes, identifying barriers and solving problems from employees and staff. These themes are shared during the 30-60-90 day Leader Huddles; these are improvement cycles. As the curriculum department and building leaders rounded with teachers in the 2020 school year, one barrier brought to the

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Leader Huddle from rounding was a lack of teacher understanding of a new K-5 English Language Arts (ELA) curriculum tool. This lack of understanding was impeding the implementation of ELA standards instruction and stalling improvement efforts for students. Early identification of this barrier allowed the district to adjust and work with instructional coaches to scaffold teacher's understanding and accelerate the use of the ELA tool.

Build Your New School Culture Around Quality Service

People want to work in organizations known for excellence service. We have all experienced that feel of not feeling welcomed at the lobby desk, not being supported in which direction to walk to find the office you are looking for, and the feeling of if your questions is an annoyance or burden to the person. Working in a school district that is committed to providing excellent service makes employees proud to be a part of the organization. It also makes it difficult to leave. During a pandemic when employees are leaving their jobs in record numbers (Harter, 2020), keeping employees engaged and satisfied is important. Providing excellent service to families also doesn't happen by accident. Quality service needs to be deeply rooted in the culture and values of the organization. It is no longer good enough for school districts to just open its doors and expect every child and family who moves in to choose your public school. Families and employees are going to want -and deserve- service that goes above and beyond what they have received in the past. When school districts prioritize quality service to employees, students and families as a core value, they ensure it is infused in everything they do.

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Building a culture around quality service teaches the organization how to connect its values into actions.

Communicating Key Words at Key Times

One core value established in the Estacada School District is to become more transparent in the decision-making process. In order for us to execute this value, leaders needed to become better communicators. This also meant our leaders needed to value transparency and hardwire the skillset to support decisions with evidence (Studer & Pilcher, 2015). The cabinet level leadership team also needed a specific way to communicate decisions throughout the entire school district.

As the Estacada School District strives to transparently communicate decisions effectively throughout the organization, we think about the outcome we want from the communication. Thinking ahead is so important to helping the organization and leaders intentionally choose words well. We call this action *Key Words at Key Times*. The purpose of communicating the right words to the right people at the right time builds a culture of service and organizational excellence. Employees want to know what is going on at the senior leadership levels, they want to connect the dots, and they want to know why.

For example, in the middle of the pandemic, major changes from the State of Oregon were coming fast, in fact, daily. As the superintendent, I needed to find a transparent way to communicate hot topic external factors that led to district-wide decisions that affected all employees in our organization. I created a weekly YouTube video titled *Key Words @ Key Times* that was and still is distributed every Monday via

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 email to every employee in the district. This weekly video 1.) recognizes an employee or a whole department that are exhibiting desired behaviors and actions; 2.) shares a leading measure and the current progress in a short improvement cycle aimed at an organization-wide goal and: 3.) share a hot topic issue and the *why/what/how* behind decision and its execution strategy. There is also an opportunity for employees to provide opinions, questions, and provide feedback to allow for transparent two-way communication. Since starting this communication, employees have reported significant growth gains and shared this feedback:

- My superintendent makes decisions in the best interest of the school district
- Open and honest communication is an important part of the culture of my school district
- My school district provides honest two-way communication between supervisors and employees (internal district feedback, n.d.).

Leaders can create their own key words that make sense to them and their situation. This hardwired communication tool can create a more positive relationship and reduce anxiety for the receiver of the communication (Studer, 2004). We can use key words to introduce ourselves to others, explain the purpose for meetings, procedures or next steps. Key words can also strengthen relationships with employees, families, and students. Processes such as Improvement Science *empower* employees, families, and students.

Managing Change Through Agile Leadership

During the pandemic the Estacada School District doubled down on continuous improvement and made a full commitment to leadership development as a means of operationalizing their strategic plan, as well as aligning goals, values and

Improvement Science: Improving Employee Engagement processes in order to achieve results and build organizational excellence (Carpenter & Oropallo, 2021). The district was prepared to face challenges because the whole school district, from school board member to superintendent to cabinet leader to building and department supervisors engaged in short cycles of improvement. This journey of improvement helped Estacada Schools align their goals, behaviors, and processes that operationalized the priorities of their strategic plan. To do so, senior leaders learned critical behaviors such as leader rounding, leader huddles, communicating key words at key times, and building a culture around quality service by hardwiring gratitude and recognition. These practices helped them implement and test change ideas through continuous improvement cycles, feedback loops driven by leader rounding and survey administration to monitor progress, and nine leadership processes that drive results (Studer & Pilcher, 2015). The early commitment to organizational excellence created critical fundamentals that created agility across the system and allowed them to adapt quickly and manage both the pandemic and set us up for success beyond the pandemic.

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