

DISSERTATION

HOW CAN LEADERS DEVELOP AND MAINTAIN HIGH ACHIEVING ELEMENTARY
SCHOOLS? A SINGLE CASE STUDY EXPLORING COLLECTIVE TEACHER EFFICACY,
PRINCIPAL LEADERSHIP, AND HIGH RELIABILITY ORGANIZATION PRINCIPLES

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ABSTRACT

HOW CAN LEADERS DEVELOP AND MAINTAIN HIGH ACHIEVING ELEMENTARY SCHOOLS? A SINGLE CASE STUDY EXPLORING COLLECTIVE TEACHER EFFICACY, PRINCIPAL LEADERSHIP, AND HIGH RELIABILITY ORGANIZATION PRINCIPLES

With the issue of student achievement at the core of educational policy, it is essential to determine how to create school environments in which all students achieve. Research indicates collective teacher efficacy is a primary factor affecting student achievement, yet educational research also points to the importance of principal leadership in fostering and maintaining school cultures of success. Furthermore, it seems there are lessons to be learned from looking beyond the scope of educational literature into organizational learning as a way to engage in systematic decision making. Though collective teacher efficacy and principal leadership have been the primary focus of such research, employing high reliability organization principles is an emerging area of educational research. The included sections serve to review the literature across collective teacher efficacy, principal leadership, and high reliability organization principles within a systems thinking approach; critically analyze and employ research methods from scholars in the field of education; and link theory to practice while grappling with the issue of student achievement in a complex educational context. A QUAL+quan mixed methods approach guided the research to explore teacher and principal perceptions of collective teacher efficacy, examine leadership actions to foster collective teacher efficacy among staff, and link leadership actions to high reliability organization principles.

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LIST OF KEYWORDS

Keywords: collective teacher efficacy (CTE), principal leadership, high reliability organization principles (HRO)

DEFINITION OF TERMS

The following terms are incorporated aspects of this research. The definitions below provide an overview of the elements included in this study. Each construct is explained in depth in the review of literature and throughout the research manuscript.

Case study: “investigates a contemporary phenomenon in depth and in its real world context” (Yin, 2014, p. 237).

Collective teacher efficacy (CTE): collective teacher efficacy is rooted in social cognitive theory. CTE is an emergent group-level attribute, the product of interactive dynamics of the group members (Goddard et al., 2000, p. 482); in essence, it is the group’s shared belief of how they can achieve the task at hand. Collective efficacy was ranked by educational researcher Hattie (2011b) as the greatest factor affecting student outcomes (effect size = 1.57) and other research has indicated it to be predictive of student achievement in schools (Goddard et al., 2015).

Constructivist: “focusing on the social processes of construction, reconstruction, and elaboration, must be concerned with conflict as well as consensus” (Guba, 1990, p. 78).

Embedded unit of analysis: “a unit lesser than the main unit of analysis, from which case study data are also collected (e.g., household data within a neighborhood case, individual employee data within an organization case, or project data within a program)” (Yin, 2014, p. 237).

High reliability organizations (HROs): organizations that are understood to have five guiding principles, including a preoccupation with failure, reluctance to simplify, sensitivity to operations, commitment to resilience, and a deference to expertise (Weick & Sutcliffe, 2015).

Leadership: Northouse (2016) defined leadership as “a process whereby an individual influences a group of individuals to achieve a common goal” (p. 6).

Organizational learning theory: “the deliberate use of individual, group, and system learning to embed new thinking and practices that continuously renew and transform the organization in ways that support shared aims” (Collinson, 2007, p. 8) and “organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together” (Senge, 2006, p. 3).

Pineapple chart: The pineapple is a symbol of hospitality; therefore, “A pineapple chart is a system that allows teachers to invite one another into their classrooms for informal observation” (Gonzalez, 2016, para. 5). It is set up in a high traffic area of the school such as the teacher’s lounge or workroom. “On the chart, teachers ‘advertise’ the interesting things they are doing in their classrooms, activities they think others might want to observe” (Gonzalez, 2016, para. 5).

Self-efficacy: self-efficacy emerges from social cognitive theory and is defined as “people’s beliefs about their operative capabilities function as one set of proximal determinants of how they behave, their thought patterns and the emotional reactions they experience in taxing situations” (Bandura, 1986, p. 393).

Single case study: “a case study organized around a single case” (Yin, 2014, p. 240).

Social cognitive theory: “human functioning is explained in terms of a model of triadic reciprocity in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other” (Bandura, 1986, p. 18).

CHAPTER 1: INTRODUCTION

Teaching and learning are dynamic social practices that have changed in composition since the times of early schooling in Ancient Greece, yet the purpose of education remains the same—schools are charged with enculturating youth into social and political democracy (Goodlad et al., 2004). Since the inception of the public education system in the United States, the driving purpose has been to ensure public schools provide access to learning that will equip learners for college and to supply the workforce (Elmore, 2000).

Many of these original purposes remain at the core of educational policy today, often at the expense of marginalized student and educator populations. Schools in the United States provide opportunities for literacy attainment and social mobility; however, “opportunity leaves much to individuals; it is not a guarantee of certain success” (Ravitch, 2010, p. 6). Though the system is intended to serve a national population, local control of education has been woven into the development of the public education system in the United States as outlined in the 10th amendment of the U.S. Constitution. In the midst of localization, education has continued to develop as an isolated practice for individual teachers.

Detailed decisions about what should be taught at any given time, how it should be taught, what students should be expected to learn at any given time, and, perhaps most importantly, how their learning should be evaluated—resides in individual classrooms. (Elmore, 2000, p. 5)

Teachers are the individuals making decisions on a daily basis in their classrooms, yet they still interact with other teachers and school administration in functioning as a part of the greater school system. Though teachers are responsible for the daily classroom function, principals also hold responsibility when it comes to student achievement, which is why it is crucial for educational leaders to be involved in instructional decision making, working alongside teachers.

Even though principals should be involved, “direct involvement in instruction is among the least frequent activities performed by administrators of any kind at any level” (Elmore, 2000, p. 7). Leaders have the responsibility of understanding the classroom level and overall school functioning within the larger educational landscape. This research is tethered to the core belief that the purpose of education within the system of a democracy is to prepare the entire upcoming generation of citizens, regardless of their zip code or future aspirations.

Although there is a clear focus on quantitative academic achievement in the United States, educational researchers have uncovered practices to best support student achievement by identifying school characteristics associated with collective teacher efficacy (CTE) as they may prove to be helpful in the development of effective schools (Tschannen-Moran & Barr, 2004). Understanding the larger educational system is important to further contextualize the student achievement discussion.

Schools as Complex Systems

Goodlad et al. (2004) argued that “schools do not exist in vacuums. They are embedded in [a] vast social, political, and economic surround” (p. 33), thus calling for a greater understanding of the larger systems of the school and community. In education, the system requires interactions among individual stakeholders, including policymakers, district administration, school leadership, parents and community, teachers, and students, to maintain equilibrium and drive the system forward. Each school has unique student, teacher, and community demographics that create the context for success. Though schools are individually unique, they are nestled within complex systems of society, bound by historical and local constraints. Simultaneous interaction on national, state, district, and school levels requires a comprehensive and systematic approach to understand the current educational context. Across

organizations and the systems within, it has been asserted that “almost all successful leaders draw on the same repertoire of basic leadership practices” (Leithwood & Jantzi, 2008, p. 27), making it a promising practice to focus on research-based organizational leadership principles when considering leadership in schools. A systems thinking approach can enable schools to become learning organizations, or those in which “people continually expand their capacity to create the results they truly desire, where the new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to grow together” (Senge, 2006, p. 3). Systems thinking can also help shift the paradigm from independently operating silos to a collaborative environment with everyone working collectively to promote consistent student achievement.

Educational Leadership

School leaders are charged with upholding policies in addition to supporting students and teachers to reach academic achievement across the school. Principal leadership has been shown to influence teachers’ beliefs and abilities to affect student achievement (Tschannen-Moran & Gareis, 2017). Just as the Common Core Standards and other state standards guide teaching and learning in schools, the work of school leaders is also framed by standards. The National Policy Board for Educational Administration (NPBEA) revised and released a 2015 version of its professional standards for school leaders. In the report, the NPBEA stated, “Improving student learning takes a holistic view of leadership. In all realms of their work, educational leaders must focus on how they are promoting the learning, achievement, development, and well-being of each student” (NPBEA, 2015, p. 3). It has been further suggested the standards should be viewed as an interdependent system to propel student success (NPBEA, 2015). These standards include aspects of a school mission, ethics, cultural responsiveness, curriculum, community engagement,

professionalism of school staff, school operation management, and school improvement (NPBEA, 2015). Though not an exhaustive list, these standards indicate the responsibilities of school leadership are extensive and multi-faceted. The NPBEA standards reflect a general list, whereas the Wallace Foundation (2013) published a more concise list of leadership responsibilities with a strong focus on leading teams to deliver effective instruction. Effective leadership entails shaping a vision, creating a safe and hospitable learning environment, cultivating leadership, managing people and resources, and improving instruction (Wallace Foundation, 2013). These five responsibilities act in concert because students will not be successful “if the school climate is characterized by student disengagement, or teachers don’t know what instructional methods work best for their students, or test data are clumsily analyzed” (Wallace Foundation, 2013, p. 7); effective leadership is present when all five aspects are carried out.

Much like the role of teachers has drastically changed over time, so too has the role of school leaders. Educational leadership demands attentiveness to the instructional side of education, including knowledge of learning theory, curriculum, and effective instructional practices (McEwan, 2003). Qualitative and quantitative research based on school achievement and improvement has indicated the impact of school leadership is second only to teaching in terms of student learning outcomes (Leithwood et al., 2008). “As far as we are aware, there is not a single documented case of a school successfully turning around its pupil achievement trajectory in the absence of talented leadership” (Leithwood et al., 2008, p. 29). Strong school leadership is essential. Furthermore, instructional leadership serves as a predictor of the degree to which teachers collaborate for instructional improvement (Goddard et al., 2015). The impact of leadership is clear, yet researchers have called for further exploration of leadership practices and

their impact on student learning outcomes (Tschannen-Moran, 2017). Individual schools may function with various constraints, yet arguably their leaders can learn from organizational theory by drawing from the successes and struggles of large and small school organizations.

High Reliability Organizations

High reliability organization (HRO) principles provide a lens for exploring school performance and improvement strategies (Bellamy et al., 2005). School leaders may leverage HRO principles to guide leadership decisions and lead their schools toward consistency and reliability. As schools are organizations that operate within multiple systems simultaneously, a highly reliable school is understood to be one that “monitors the effectiveness of critical factors within the system and immediately takes action to contain the negative effects of any errors that occur” (Marzano et al., 2014, p. 1). HROs are engaged in a process of monitoring threats and taking action before they escalate (Weick & Sutcliffe, 2015) when they encounter problems. These organizations leverage five principles, including a preoccupation with failure, reluctance to simplify, sensitivity to operations, commitment to resilience, and a deference to expertise (Weick & Sutcliffe, 2015). The principles guide decision making and encourage organizational mindfulness. HRO principles also guide organizational leaders who aim to improve normal operations, detect potential problems, and recover from problems (Bellamy et al., 2005).

Principals are responsible for creating the conditions for teacher collaboration and student achievement. The “strong interrelationship between principal leadership and teacher collaboration (effect size = .70) is consistent with previous research that suggests the importance of strong instructional leadership to teachers’ collaborative work and school improvement” (Goddard et al., 2015, p. 524). Yet, principals alone cannot do this work. Goddard et al. (2004) stated schools may have a stronger sense of collective efficacy when teachers are able to

influence decisions affecting instruction. This is why understanding both principal and teacher perceptions and actions can provide insight into strengthening CTE.

Collective Teacher Efficacy

Though leaders affect entire schools through school-wide instructional decisions over time, there is no question that teachers directly influence students on a daily basis. The ways in which principals play a role in teacher development, collaboration, and support reflect how social cognitive theory comes to life through collective efficacy.

CTE is rooted in social cognitive theory and reflects that “people’s shared beliefs in their collective power to produce desired results are a key ingredient of collective agency” (Bandura, 2000, p. 75). Bandura added, “A group’s attainments are the product not only of shared knowledge and skills of its different members, but also of the interactive, coordinative, and synergistic dynamics of their transactions” (Bandura, 2000, p. 75). CTE empowers teachers to believe in their ability to make an educational difference that is greater than the impact of home life and other community factors (Donohoo, 2018). Furthermore, CTE is believed to be the greatest factor affecting student achievement (Hattie, 2018b). CTE beliefs “arise from a metacognitive process in which group members assess the relationship between their competence and the nature of the task they face in light of these sources of efficacy belief-shaping information” (Goddard et al., 2015, p. 507). This means teachers’ sense of efficacy depends on their interpretations of the task at hand.

Research on the topic of efficacy can potentially inform and accelerate student learning outcomes. Bandura (1977) shared that “efficacy expectations are a major determinant of people’s choice of activities” (p. 194) and choice directly affects teaching and learning in schools. Shared collective efficacy beliefs affect daily school functioning as the faculty and administration

determine the use of resources and the level of effort put forth as a group in addition to “their staying power when collective efforts fail to produce quick results or meet forcible opposition, and their vulnerability to the discouragement that can beset people taking on tough social problems” (Bandura, 2000, p. 76).

Social cognitive theory and organizational learning theory are closely linked and both show promise in their ability to support students’ academic achievements in the classroom in distinct ways, leading schools to sustained change. Within social cognitive theory:

Ineffective schools require major restructuring of their customary practices rather than piecemeal remedies . . . if the changes are to have much impact and durability, they must be accomplished largely through collective initiative of the various constituencies of each school. (Bandura, 1997, p. 252)

Social cognitive theory requires a concerted effort to restructure the school and work toward change on the part of stakeholders as a collective. Organizational learning theory proposes “the deliberate use of individual, group, and system learning to embed new thinking and practices that continuously renew and transform the organization in ways that support shared aims” (Collinson, 2007, p. 8). With distinct theoretical underpinnings, these theories both support the need for collective action in working toward shared goals. Together they span individual to systemic change as they more completely support comprehensive decision making, leading toward individual student achievement.

Leadership and Collective Efficacy

Research indicates there are several ways school leaders can build collective efficacy among staff, such as by building instructional knowledge, creating opportunities for teachers to collaborate, providing actionable feedback on teachers’ performance, and involving teachers in school decision making (Brinson & Steiner, 2007). The social responsibilities of school leaders are expansive, yet they ultimately lead to student achievement outcomes because “school leaders

have an impact on student achievement primarily through their influence on teachers' motivation and working conditions" (Seashore Louis et al., 2010, p. 19). Though it is clear that leadership plays an important role in developing the conditions for strong collective efficacy, teachers are the ones who harness the collective energy.

Statement of the Problem

The Every Student Succeeds Act (ESSA) is the prevailing educational act guiding schools toward success and equity for all students and, according to the U.S. Department of Education (2019), it "maintains an expectation that there will be accountability and action to effect positive change in our lowest-performing schools, where groups of students are not making progress" (para. 5). Even with such a strict mandate in effect, ESSA does not support all students. Over half of all students in the United States are not attaining proficiency, and each deserve more from their education. According to the 2019 *Nation's Report Card*, 35% of fourth graders across the nation scored at or above proficient in reading and 41% of fourth graders were at or above proficient in mathematics (National Assessment of Educational Progress [NAEP], 2019). Comparatively, 40% of fourth graders in Colorado, where the current study took place, were at or above proficient in reading, and 44% of Colorado fourth graders were at or above proficient in mathematics (NAEP, 2019). Although slightly above the national average for both measures, these figures indicate less than half of all students in Colorado fail to meet proficiency, causing reason for concern on a local level. Although a high level of educational attainment is a struggle within many schools, there are promising practices to support teachers and student achievement.

Because agency refers to the intentional pursuit of action, we see school organizations as agentive when they act purposefully in pursuit of educational goals. For example, one school may work to close achievement gaps by race while another acts to increase the

quality of teacher professional development. When such differences are purposeful, they reflect the exercise of organizational agency. (Goddard et al., 2000, p. 483)

Agency provides principals the autonomy to make purposeful decisions when leading their schools. Principals can draw from organizational learning theory to employ practices that support comprehensive decision making and sustained growth.

Purpose of the Study

This study was designed to promote student achievement regardless of demographic data through a single embedded case study focusing on how school leadership fosters collective efficacy within an HRO framework. The goal was to analyze lived experiences in relation to teacher efficacy while attending to factors affecting student achievement. Findings from this study may be used to inform leadership decision making to ultimately affect student growth.

Because school leaders are charged with ensuring high levels of learning for all students resulting in adequate yearly progress (AYP) and meeting grade-level demands, it was worth studying the context of exemplary schools that have been successful in making student progress a reality (Bellamy et al., 2005). Each school operates within a unique context shaped by student demographics, teacher and staff beliefs and experience, and skillful leadership. What remains unknown is how leaders encourage and support student achievement. One explanation is through strong CTE, which can be supported and developed by school leadership.

Methodology

This single embedded, mixed methods case study included one high achieving, low socioeconomic elementary school in an urban school district. The qualitative data collected were supported by quantitative data to more closely link theory and praxis. Initial data collection through the use of surveys yielded information about teacher perceptions of CTE. Focus groups with teachers provided deeper insight into teachers' perceptions of actions taken by principals to

develop and foster collective efficacy within the school. Finally, interviews with the elementary school principal and assistant principals further linked the research to the organizational and leadership demands informing leadership practice. Each of these elements came together to construct an understanding of CTE and school leadership.

Research Questions

This study was designed to explore the relationships among several processes affecting student achievement, including how leaders develop and maintain CTE in an elementary school within the context of an HRO framework.

1. How do elementary teachers perceive collective efficacy in their individual school?
2. How do elementary principals perceive collective efficacy in their individual school?
3. How do HRO principles affect principal decision making in elementary schools?

Significance of the Study

This study was designed to provide deeper insight into CTE by examining one school site in depth and incorporating aspects of organizational learning, social cognitive theory, and HRO principles. Both teacher and principal perceptions and other aspects of student achievement were considered. These questions ultimately supported the use of case study research to better understand a real-world case bound by contextual conditions (Yin, 2014). This study is significant in attending to student achievement, which is cause for concern both nationally and locally (Yin, 2014). Furthermore, results are shared by using clear, straightforward language to make them accessible and practitioner friendly (Creswell, 2014).

Assumptions

Although leadership can take many forms and responsibilities, principal leadership was the main element considered as one construct, principals' actions were studied through

qualitative data analysis. Furthermore, this study did not contain a focus on the differences in the impact of transformational or instructional leadership, but on leadership as a whole and leadership actions affecting CTE. Measures often associated with school achievement were the quantitative numbers used to provide a point-in-time assessment of student academic outcomes. As these measures were one indicator of school performance, further data were obtained through interviews and focus groups to gain a more robust understanding of the school climate.

Organization of Study

This section contained an introduction to the main concepts in the study to contextualize the problem of interest. Elements of systems thinking, organizational learning theory, social cognitive theory, HRO principles, CTE, and school leadership are further outlined and defined in the review of literature in Chapter 2. A description of the research methodology and methods in Chapter 3 provides a foundation for the research analysis in Chapter 4 and discussion of findings with links to literature and implications for practice in Chapter 5.

CHAPTER 2: REVIEW OF LITERATURE

Education as a whole is constantly changing, whether via newly implemented policies and learning theories or curricular materials and student demographics. Leaders of individual schools must be equipped to face these changes and make decisions to support sustained growth. Together, school leaders (Goddard et al., 2017; Leithwood & Jantzi, 2008; Tschannen-Moran & Barr, 2004) and teachers (Goddard et al., 2004; Tschannen-Moran & Gareis, 2004) play an integral role in ensuring school success through promoting CTE. Though there is a robust body of research relating to CTE, further research is needed to determine more about how principal leadership fosters CTE and affects overall school performance. This case study research was designed to explore and describe how principals foster CTE in an elementary school as well as whether HRO principles paired with CTE contribute to high achievement within a low socioeconomic elementary school setting. The chapter spans large-scale organizational elements including systems thinking and organizational learning theory and then delves into individual aspects including social cognitive theory, school leadership, and measures of efficacy while considering HRO principles as a lens through which to explore to school achievement.

Systems Thinking

In an increasingly complex and dynamic educational landscape, the nation's education systems are in a constant state of transformation that requires a comprehensive and systematic approach to problem solving. How school leaders consider their decisions and how their teams respond to the changes resulting from those decisions not only highlight strong CTE, they are also the mark of a true systems thinker. Systems thinking is a management discipline that observes both discrete functions and large-scale interactions between components. Systems thinking is defined as a “discipline for seeing wholes. It is a framework for seeing

interrelationships rather than things, for seeing patterns of change rather than static ‘snapshots’” (Senge, 2006, p. 68) and can therefore be a beneficial lens to adopt in educational research. Through systems thinking, “people learn to better understand interdependency and change and thereby deal more effectively with the forces that shape the consequences of their actions” (Senge et al., 2012, p. 8). In schools, systems of note for this study included the interactions among teachers, learners, and principals. School leaders of today often strive for improvement, which is where systems thinking becomes essential in the decision-making process. “Any system which is going to survive long enough to be an important part of our environment has to have the ability to cope with that kind of change and survive it” (Kauffman, 1980, p. 6). School leaders must be able to notice patterns of change as applied to individual student behavior or across school-wide academic achievement to endure in a dynamic environment. Systems thinking helps contextualize the larger scope of educational decision making and leadership. It can be leveraged to see patterns and to promote effective changes (Senge, 2006). It served as a foundational underpinning to the current research because without it, decisions would potentially be made in isolation rather than considering multiple perspectives across the organization.

Many schools and districts have successful structures in place whereas others are striving to promote student success by looking toward exemplars and seeking new perspectives, requiring a comprehensive understanding of the greater school system. Systems thinking enables school principals to see the larger scope of issues affecting their schools as they “think less linearly and more strategically, less concretely and more holistically, less specifically and more synergistically - basically, they need to see wholes” (Shaked & Schechter, 2013, p. 786), which is arguably essential in making informed decisions. Using systems thinking as an overarching framework alongside organizational learning and HRO principles will enable school leadership

to better respond to potential challenges. Systems thinking demands attention at a school and district level because “it is this systemness of purposeful and ongoing interaction that produces gains in student learning” (Westover, 2020, p. 2). In the current context of education, “The stakes for failure have been raised so high- for both schools and for students- that high reliability has become an important aspect of school success” (Bellamy et al., 2005, p. 384), which truly served as an impetus for this research. The school system has individual stakeholders, including teachers and school leaders, whose decision making and agency affect the functioning of individual school organizations.

Organizational Learning

Systems thinking serves as a catalyst to organizational learning as it informs decisions affecting student achievement. Organizational learning can be used to continuously renew school organizations (Collinson, 2007). In other words:

Just as teachers refer to lifelong learning as a goal for themselves and their students, so organizational learning for renewal is a constant goal for an organization. Learning ensures the survival and continuation of organizations by helping them transform themselves from within and respond responsibly to external challenges as they exploit what they have learned in the past while exploring or innovating to deal with the present and future. (Collinson, 2007, p. 9)

Different than the learning occurring in classrooms, organizational learning is a transformational process that meets the needs of novel problems within the school and can help guide schools toward continuous improvement and school reliability (Collinson, 2007). Organizational learning is defined as “the deliberate use of individual, group, and system learning to embed new thinking and practices that continuously renew and transform the organization in ways that support shared aims” (Collinson, 2007, p. 8). Another definition positions learning organizations as “organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is

set free, and where people are continually learning how to learn together” (Senge, 2006, p. 3).

Both definitions indicate the need for systems thinking and shared understandings as essential components of leadership teams that are poised for organizational learning, therefore serving as a focal point for school leaders.

Organizational learning can be applied beyond the classroom, because on a larger scale, schools can be designed to be learning organizations (Senge et al., 2012). It is essential given the current context of education, as “the costs of failure- both for the individual and the society- have become too great for unreliability to continue” (Stringfield & Schaffer, 2011, p. 21). Students deserve consistently strong educational experiences year to year and across schools. Stringfield and Schaffer (2011) added that “the country’s fundamental choice is not whether to become more reliable, but whether to stumble forward, feeling our way and making many, many mistakes; or whether to understand and control a more efficient process of increasing educational reliability” (p. 21). Schools are no exception to the belief that the public expects high performance and successful organizations can prevent failure by continuously adjusting operations (Bellamy et al., 2005). Therefore, understanding more about the operations of highly reliable schools and organizations may further inform educational decision making and leadership practices.

High Reliability Organizations

Many researchers have worked to get at the core of what works best in education in order to support school leaders in their quest to attain consistent educational achievement. Leading researchers have defined high reliability in schools as having “high levels of student performance, achieved as a result of high quality instruction, delivered through superior execution of effective research-based practices, with low variability in the quality of instruction

within and between schools” (Eck, 2011, p. 3). As such, consistent performance calls for “mindful organizing,” or a “focus on a set of capabilities that will make surprises more salient, earlier” (Weick & Sutcliffe, 2015, p. 16). High reliability organizing, or mindful organizing, relies on sensemaking, continuous organizing, and adaptive management, much like an organizational learning environment (Weick & Sutcliffe, 2015). Teachers are very much a part of the organizational performance within schools. Goddard et al. (2004) stated collective organizational agency is present when teachers can influence instructional decisions. It seems organizational learning is fundamental to building CTE, as both aspects “influence student achievement because strong collective efficacy not only increases individual teacher performance but also affects the pattern of shared beliefs held by teachers” (Hoy, 2003, p. 104).

HROs are linked by five principles that showcase the human side of what works in organizations: (a) preoccupation with failure, (b) resistance to simplify, (c) sensitivity to operations, (d) commitment to resilience, and (e) deference to expertise (Weick & Sutcliffe, 2015). High reliability organizing is not a cure-all for educational woes; however, it can serve as a lens to view school functioning (Bellamy et al., 2005). Viewing each HRO principle in relation to school functioning helps connect organizational learning directly to the educational system.

High Reliability Principle 1: Preoccupation With Failure

Preoccupation with failure calls for “continuous attention to anomalies that could be symptoms of larger problems in the system” (Weick & Sutcliffe, 2015, p. 46) that manifests in three ways: detecting small errors, anticipating mistakes to avoid, and acknowledging an incomplete understanding. A nationally identified function of schools is to ensure the success of all students, often by providing additional supports for students who struggle. One such support used in Colorado is Multi-Tiered Systems of Support (MTSS), or a prevention-based framework

of team-driven data-based problem solving for improving the outcomes of every student through family, school, and community partnering and a layered continuum of evidence-based practices applied at the classroom, school, district, and regional levels (Colorado Department of Education, 2020). The Colorado Department of Education (2020) asserted the underlying goal of MTSS is to improve student outcomes through the use of data, evidence-based practices, and systems to support efforts, truly making it a comprehensive collaborative effort to improve achievement. Observing trends in data might also yield curricular concerns and large-scale opportunities for growth, because even though “normal operations may depend on confidence in the school’s programs, detecting problems early may well depend on a more skeptical stance” (Bellamy et al., 2005, p. 400). In fact, “a preoccupation with failure may increase the school’s capacity to notice and respond to learning difficulties, just as a preoccupation with successful learning can stimulate creativity in normal classroom instruction” (Bellamy et al., 2005, p. 401). MTSS programs enable school leaders to respond to individual student learning difficulties by providing supportive interventions.

High Reliability Principle 2: Reluctance to Simplify

Reluctance to simplify means considering the factors affecting decision making in isolation may lack what in concert the factors achieve together. The need to consider multiple stakeholder perspectives and needs is clear in school-level shared decision-making models because “no one truly acts independently; one’s actions and behaviors affect- and are affected by- the actions and behaviors of other members in the organization” (Marzano et al., 2016, p. 4). When more voices and perspectives are included in decision making and general discussions, an organization is better situated to be reluctant to simplification (Weick & Sutcliffe, 2015). This echoes Goddard et al’s (2004) assertion that teachers exercise organizational agency when they

have the opportunity to affect decisions within the school. Reluctance to simplify implores leaders to view schools as learning organizations and remain “dedicated to the idea that all those involved with it, individually and together, will be continually enhancing and expanding their awareness and capabilities” (Senge et al., 2012, p. 7). When we simplify the process of educational growth, we tend to lose sight of elements deserving of our attention—the various and unique needs of all stakeholders.

High Reliability Principle 3: Sensitivity to Operations

Sensitivity to operations is “about the work itself, about seeing what we are actually doing regardless of intentions, designs, and plans” (Weick & Sutcliffe, 2015, p. 10). Leadership is a process requiring much reflection and finesse, as well as a balance of knowing what to do, when and how to do it, and ultimately why to do it (Waters et al., 2004). Principals are charged with developing and executing improvement plans stemming from root causes in order to shift school functioning toward improved conditions. Much like student data require close and constant attention, improvement plans must also be closely monitored to ensure goal progress is on track or to identify areas that need adjusting. The problem is that “average leaders often lose sight of their actual goal and thus fail at their main task; namely, that of challenging and encouraging people to the greatest possible extent in their development, in their thinking and in their actions” (Hattie, 2018a, p. xi).

School leaders must leverage the expertise of all stakeholders as they identify reasons for success and recognize potential threats while building CTE to face the challenges ahead (Brinson & Steiner, 2007). Professional learning communities (PLCs), or a school-wide system of collaborative teacher teams aimed at improving instruction, can fit within this principle because teachers are making instructional decisions on a daily basis (Marzano et al., 2016). When it

comes to PLCs, “it is not what or how teachers teach, but how much students learn” (Marzano et al., 2016, p. 6). Much like classroom instruction necessitates constant reflection and adjustment, so too does harnessing a sensitivity to operations. Just as a teacher may reteach after a particularly challenging lesson, the sensitivity applies at a school level requiring collective reflection while attending to a constantly evolving reality because, “when interruptions occur there is a chance to update your sense of what is actually happening since interruptions turn routines inside out” (Weick & Sutcliffe, 2015, p. 90). With a sensitivity to operations, principals must reflect upon and understand instructional practices and continually reflect upon data to guide decision making.

High Reliability Organization Principle 4: Commitment to Resilience

According to the National Center for Education Statistics (NCES, 2018), in 2017, 3.6 million teachers woke up each morning to embrace the challenges of teaching unaware of what the day might bring, whether it would be supporting a student who did not have breakfast, a local tragedy to debrief, culling through student testing data looking for patterns, an angry parent with whom to converse, a playground fight to de-escalate, an act of violence within the school, or navigating a global pandemic. Any of the above could be reason enough to stay home, yet day after day teachers walk into schools ready to do their best to educate their students, which is where commitment to resilience comes into play.

The essence of resilience is therefore the intrinsic ability of an organization (system) to maintain or regain a dynamic stable state, which allows it to continue operations after a major mishap and/or in the presence of a continuous stress. HROs develop capabilities to detect, contain, and bounce back from those inevitable errors that are part of an intermediate world. The hallmark of an HRO is not that it is error-free but that errors don’t disable it. (Weick & Sutcliffe, 2015, p. 12)

A commitment to resilience manifests through MTSS procedures. Resilience also emerges when comparing student demographics and CTE. Multiple studies have indicated the

positive impact of CTE on student academic performance outweighs the negative effects of low socioeconomic status (Bandura, 1993; Brinson & Steiner, 2007; Goddard et al., 2000). School leaders are charged with building resilience in schools in meaningful ways for students and staff.

High Reliability Organization Principle 5: Deference to Expertise

There is a need for “a mechanism and process that allows people to talk, across grade levels, departments and schools within a system, about how they want kids to develop and what supports they need” (Senge et al., 2012, p. 404). PLCs serve this purpose, as they are a group of educators engaged in ongoing collaboration to work toward improved student results (DuFour et al., 2008). PLCs benefit school leaders by increasing their ability to support teacher development (Marzano et al., 2016) through providing a clear and consistent focus on student learning, shared values, visible teaching practices, reflective dialogue, and collaboration (Schaap & Bruijn, 2018). Furthermore, PLCs support teachers through more effective professional development (PD) because they foster a culture of teacher empowerment (Marzano et al., 2016). When it comes to HROs, “decisions are made on the front line, and authority migrates to the people with the most expertise, regardless of their rank” (Weick & Sutcliffe, 2015, p. 14). Just as collaborating in teacher teams can showcase individual and collective teacher expertise, there is also a core understanding that solutions are within the system, and therefore any problems that arise can be addressed (Weick & Sutcliffe, 2015). Because expertise is complex, it should be approached with caution when considering how individuals respond to their own expertise or that of others. Individual and collective operating and decision making occur as part of a larger process that can be explained through high-performing schools.

High-Performing Schools

School leaders cannot afford to ignore student achievement in the current educational climate. The inception of the No Child Left Behind (NCLB) Act in 2001 mandated “the expectation for highly reliable results- each and every child making adequate yearly progress and achieving at grade level- is reshaping the context of school work” (Bellamy et al., 2005, p. 384), thus shifting the primary focus to student achievement. Attaining such academic outcomes requires an orchestration of many components that are unique to each educational context. Following NCLB was the ESSA in 2015, which provides states with more autonomy, yet still places emphasis on student achievement and equity. These measures shape the climate of education and place high expectations for student performance at the core of educational policy. In response to educational achievement imperatives, Bellamy et al. (2005) outlined nine characteristics of high-performing schools not as a panacea to educational woes, but rather as a guide to improve in these areas. Echoing the imperative nature for a school leader to ensure a shared vision, high-performing schools must also have a clear and shared focus (Bellamy et al., 2005). High-performing schools must hold high standards and expectations for all students while providing a supportive learning environment (Bellamy et al., 2005). High-performing schools also require a strong focus on curriculum, instruction, and assessments that are aligned with state standards in addition to the frequent monitoring of learning and teaching (Bellamy et al., 2005). Effective school leadership, high levels of collaboration and communication, focused PD, and high levels of family and community involvement are the other identified characteristics of high-performing schools (Bellamy et al., 2005). It makes sense that many benchmarks of a high-performing schools mirror aspects that are essential to educational leaders, which is why it is also important to consider the role of educational leaders. For a school to be consistently high

performing year after year, the public must come to rely on it as a highly reliable school. Highly reliable schools “monitor the effectiveness of critical factors within the system and immediately take action to contain the negative effects of any errors that occur” (Marzano et al., 2014, p. 1). This is not to say highly reliable schools do not make mistakes, but rather they can adapt and overcome when they do occur. The functioning of highly reliable schools is determined, in part, by the agency of individuals and the organization as a whole. This is best explained through social cognitive theory.

Social Cognitive Theory

Social cognitive theory provides an understanding that “human functioning is explained in terms of a model of triadic reciprocity in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other” (Bandura, 1986, p. 18), meaning decision making never occurs in isolation but rather as part of a larger functioning system. Social cognitive theory relies on the assumption that individuals and collective groups exercise agency to make choices (Goddard, 2001). Not only do people respond to their environment, they simultaneously shape their environment. Because “the core features of agency enable people to play a part in their self-development, adaptation, and self-renewal with changing times” (Bandura, 2001, p. 2), both individual and group perceptions affect school functioning.

Social cognitive theory encompasses self-efficacy and CTE. A synthesis of existing research highlights the strong link between CTE and student achievement while supporting the need for further research on CTE, which serves as a call to action to further drive research in this field (Donohoo, 2018; Ramos et al., 2014). The existing literature supports that high levels of CTE positively affect school achievement outcomes, deeming CTE worthy of further research.

Though the connection between CTE and student achievement has been made, the implications of leadership are not always explicitly shared in relation to the constructs above and must be extended through future research. Because social cognitive theory includes self-efficacy and collective efficacy perceptions, it makes sense to first understand self-efficacy and then extend that understanding to a collective.

Self-Efficacy

A teacher's perceived self-efficacy, or belief in their own ability to successfully affect student learning, can influence that teacher's confidence. Self-efficacy emerges from social cognitive theory and is defined as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). Four sources inform self-efficacy, including vicarious experiences and observation, verbal persuasion and social influences, physiological awareness, and the most influential source being authentic mastery experiences (Bandura, 1986). Despite potential teaching setbacks, "those who perceived themselves as highly efficacious are inclined to attribute their failures to insufficient effort, whereas those of comparable skills but lower perceived self-efficacy ascribe their failures to deficient ability" (Bandura, 1986, p. 394), implying highly efficacious teachers believe they have what it takes to help students achieve.

School leaders must understand the efficacy of teachers individually and as a collective because these judgments affect student learning outcomes in varied ways. Self-efficacy is not the only teacher efficacy factor affecting educational outcomes, as research has shown CTE to be a group-level attribute also affects achievement. Furthermore, CTE refers to perceptions of group membership compared to teacher self-efficacy, which is an individual teacher's ability perceptions (Ross et al., 2004). Conceptually distinct, both forms of efficacy affect teaching and

learning outcomes (Skaalvik & Skaalvik, 2007). The concept of reciprocal causality has been supported by many researchers when studying the relationship between teacher self-efficacy and CTE although it is still unclear from these studies which causes the other (Cansoy & Parlar, 2018; Ninkovic & Knežević Floric, 2018). Teacher self-efficacy was not a measured construct of study in this research; however, understanding the nature of self-efficacy provides insight into the functioning of CTE.

Collective Teacher Efficacy

CTE is rooted in social cognitive theory and related to self-efficacy. Much like self-efficacy, there are four main sources of collective efficacy formation, including mastery experience, vicarious experience, social persuasion, and affective states, with mastery experience being the most powerful (Bandura, 1997; Goddard et al., 2000; Goddard et al., 2004). Collective efficacy is “an emergent group-level attribute, the product of the interactive dynamics of the group members” (Goddard et al., 2000, p. 482). It is the group’s shared belief of how they can achieve the task at hand rather than the combination of individual beliefs (Goddard et al., 2000). In essence, it is a response to the question, “Are we capable of accomplishing the task at hand?” Several studies have shown there is a strong link between perceived collective efficacy and student achievement gains (Bandura, 1993; Eells, 2011; Goddard, 2001; Goddard et al., 2000). A scale to measure perceived CTE showed positive associations between CTE and differences in student achievement for both mathematics and reading achievement (Goddard et al., 2000). Hattie (2018b) asserted that when a school staff believes they can collectively accomplish the task at hand and make a positive difference, they most often will. Hoy et al. (2002) identified the relationship between CTE and school achievement as reciprocal (i.e., influencing each other), as “collective efficacy promotes higher school achievement, but higher school achievement also

produces greater collective efficacy” (p. 90). In highly efficacious schools there are challenging goals set for students, mastery instruction, and the belief that students can achieve high academic attainment, which shapes the school culture (Tschannen-Moran & Barr, 2004).

The impact of CTE spans decades of educational research. Bandura employed multiple regression path analysis and determined a regression coefficient for the relationship between CTE and student achievement of .34 to ultimately conclude CTE affects student achievement (Bandura, 1993, p. 143). Since Bandura’s initial assertions, CTE has been an ongoing research focus and understandings of the construct are more robust. Goddard et al. (2000) conducted a study in an elementary school setting and determined collective efficacy is linked to student achievement variation among schools by highlighting increases in both math (8.62 average gain) and reading (8.49 average point gain), determining a “one unit increase in collective efficacy to support an increase of more than 40% of a standard deviation in student achievement” (p. 501), indicating teacher perceptions of collective efficacy are in fact predictive of student achievement. Hoy et al.’s (2002) research at the high school level indicated the greater the collective efficacy, the greater students’ mathematical achievement. Hoy et al. reported a significant and positive relationship between school mathematics achievement and CTE ($r = .65, p < .01$) and a substantial relationship when controlling for socioeconomic status as well ($r = .61, p < .01$; Hoy et al., 2002, p. 87), indicating collective efficacy was “more important in explaining school achievement than SES” (Hoy et al., 2002, p. 89). Other research corroborates this assertion; according to a continuously updated educational meta-analysis conducted by educational researcher John Hattie, which synthesized over 80,000 studies involving over 300 million students, CTE has an effect size of 1.57 (Cohen’s d), making it the number one factor affecting student achievement outcomes (Hattie, 2018b). When conducting a meta-analysis, there can

often be issues with generalization because there is not an agreed upon effect size when looking at single studies and the combination of various effect sizes may ultimately change the data (Gliner et al., 2017). Although some may argue about the statistical methods employed as well as the inclusion of studies with varying size and quality within the meta-analysis in Hattie's research, collective efficacy still deserves attention within the realm of educational research as it has been studied across organizational contexts with similar impact.

Though Hattie's research spanned countless factors affecting educational achievement, Eells (2011) conducted a meta-analysis as part of a doctoral dissertation focused solely on collective efficacy and student achievement and found, even when including outliers, an effect size (r -mean) of .598 to assert CTE and student achievement are strongly related (p. 125). Eells's research strengthened Hattie's initial assertions, further highlighting the importance of CTE as a component of student achievement and substantiating the inclusion of CTE in the current research. Strong CTE is linked to improved student performance, ameliorates the negative effects of low socioeconomic status (SES), enhances parent-teacher relationships, and creates a work environment that builds teacher commitment to the school, which is why CTE deserves attention in educational research (Brinson & Steiner, 2007). Connecting CTE to leadership, Eells called for future research on the construct, stating the "examination of schools that work could provide a template of success and bolster feelings of perceived control" (Eells, 2011, p. 127). CTE places emphasis on teachers when looking toward educational attainments; however, teachers do not work in isolation, but in collaboration with colleagues and administration.

Internationally, CTE is gaining traction in research, further supporting the importance of understanding this construct in a variety of school contexts. Cansoy and Parlar (2018) conducted a study in Turkey spanning elementary to high school levels using teacher efficacy scales (self

and collective) and an effective school leadership scale. A positive significant relationship between effective school leadership and collective efficacy ($r = .42, p < .05$) reinforced the ability of school leadership to positively and significantly predict CTE (Cansoy & Parlar, 2018, p. 562). The researchers offered more empirical evidence to support the need for principals to support and bolster teachers while urging for future research to be conducted to determine what aspects of leadership support CTE (Cansoy & Parlar, 2018). Mastery experiences are the strongest predictor of CTE, which is why school leaders promote such experiences for teachers (Hoy et al., 2002). Research has shown that “as teachers experience success and observe the accomplishments of their colleagues as well as success stories of other schools, they develop beliefs in their own capabilities to succeed” (Hoy et al., 2002, p. 91), in turn affecting their instruction and ultimately leading to student achievement. While attending to the myriad responsibilities of school leaders, it is clear they play a strong role in building teacher efficacy perceptions as well.

Leadership

Northouse (2016) defined leadership as “a process whereby an individual influences a group of individuals to achieve a common goal” (p. 6). As a part of the process, leaders work to “continually reexamine the norm to determine if what the organization is doing is what it should be doing” (Ubben, 2001, p. 13) in addition to leading the organization through a dynamic process of problem-finding and problem solving. It is also challenging to define the role of a formally positioned educational leader. Educational leaders are charged with the complex task of balancing technical, human, educational, symbolic, and cultural leadership skills (Sergiovanni, 1984). They also uphold standards of practice and have many responsibilities previously referenced.

Before examining the selected job description of a school leader, it is important to consider the claim that successful leaders generally use the same core leadership skills (Leithwood & Jantzi, 2008) while acknowledging it is how leaders respond to their school context that shapes their work and sets effective leaders apart. This supports a need for leaders to be mindful of the context in which they operate. Bearing in mind that context dictates leadership practices, various types of leaders emerge in schools both in informal and formally appointed positions. The Wallace Foundation (2013) concisely captured the essence of leadership and outlined five key responsibilities of school principals; it is from these standards that the complex and dynamic role of school leaders emerges with a consistent focus on student learning. The standards include “shaping a vision of academic success for all students, one based on high standards,” “creating a climate hospitable to education in order that safety, a cooperative spirit and other foundations of fruitful interaction prevail,” “cultivating leadership in others so that teachers and other adults assume their parts in realizing the school vision,” “improving instruction to enable teachers to teach at their best and students to learn to their utmost,” and “managing people, data and processes to foster school improvement” (p. 6). These standards link to elements of high reliability organizing, organizational learning, and social cognitive theory, thereby informing the current research. For example, MTSS requires the orchestration of many elements on the part of the leader, including managing data, people, and processes to foster school improvement. For the current research, the terms school leader, educational leader, and principal are used interchangeably to represent a formally appointed leadership position with a full understanding that leadership can also manifest in people who are not in formal positions of leadership. School leadership is represented in various ways throughout the literature, both in the

United States and internationally, examining aspects of instructional leadership, CTE, and student outcomes.

Much like teachers have been linked to student outcomes, leadership and student achievement are inextricably linked. Meta-analysis research spanning 69 studies and over one million students indicated effective leadership affects student achievement, highlighting a .25 correlation between the two constructs (Waters et al., 2004). Upon a review of both qualitative and quantitative studies, Leithwood and colleagues asserted, “As far as we are aware there is not a single documented case of a school successfully turning around its pupil achievement trajectory in the absence of talented leadership” (Leithwood & Jantzi, 2008, p. 28). Several studies have linked school leadership to student achievement by breaking down individual factors for close scrutiny including instructional leadership. Instructional leadership has been identified as an antecedent to collective efficacy and as having a positive and significant effect on teachers’ self-efficacy (Calik et al., 2012). A common definition of instructional leadership calls for “leadership that guides for establishing a shared leadership effort in which the principal serves as the facilitator of the process” (Ubben, 2001, p. 35) while simultaneously tempering community expectations with the values and previous experiences of the principal, which is a complex process. Consider the following statement regarding instructional leaders:

Instructional leaders must be knowledgeable about learning theory, effective instruction, and curriculum- the power within the educational force. In addition instructional leaders must be able to communicate and represent to students, teachers and parents what is of import and value in the school. They must become a symbolic force. Finally, instructional leaders must be skilled in the actual construction of a culture that specifically defines what a given school is all about. The educational, symbolic, and cultural dimensions are critical to leadership in a school setting. (McEwan, 2003, p. 6)

Robinson et al. (2008) sifted through the impacts of transformational leadership and instructional leadership on student achievement and found that when a school leader places emphasis on teaching and learning practices, student outcomes are positively affected, yet this

does not simplify the task of leading a school to only focusing on instructional practices because school leadership is a more robust role. In addition to cultivating job satisfaction and a positive school culture to support CTE (Edinger & Edinger, 2018), school leadership can indirectly influence staff motivation, commitment, and working conditions, which will also affect student learning outcomes (Leithwood & Jantzi, 2008). “Effective leaders know that people are not their best asset; they are their only asset, so the need to nurture, develop, and strengthen relationships is at the very core of what good leaders do” (Leithwood, 2010, p. 243), and how this manifests can affect achievement.

Because CTE often accompanies school achievement, it warrants attention from school leaders. In a synthesis of research, Leithwood and Jantzi (2008) asserted “school leadership is second only to classroom teaching as an influence on pupil learning” (p. 28) and further suggested leadership can unlock existing capabilities within the organization. It is clear school leadership matters; therefore, “if efficacy is going to be fostered in schools as a means of increasing student outcomes, insights into what is known about the relationship between CTE and leadership styles and practices is needed” (Donohoo, 2018, p. 341). Once again acknowledging the interconnections among people and their environment, Bandura shared “the relationship between individual and organizational effectiveness assumes special significance when individuals have to work interdependently to produce results” (Bandura, 1997, p. 472). This idea helps bridge organizational learning and social cognitive theory, which is a potential way to get at the core of the increased student achievement present in high-performing schools.

Relying on social cognitive theory, researchers used translated efficacy scales to examine the relationships among teacher self-efficacy, CTE, and leadership, which links to constructs of the current research (Calik et al., 2012). From these scales, the researchers employed statistical

analysis to determine that instructional leadership does, in fact, have a positive and strong effect on CTE ($b = .34, p < .01$; Calik et al., 2012, p. 2500). Calik et al. (2012) also suggested leadership directly relates to teacher self-efficacy and indirectly affects CTE and suggested instructional leadership is an antecedent to CTE. Calik et al.'s associational research highlighted the relationships between leadership and teacher efficacy, getting to the core of student achievement. Though the results of their study support the ability to draw connections among constructs, they do not shed light into exactly how principal leadership works to build CTE.

Conclusion

The connections among school leadership and CTE can be found across the literature. However, the current study was designed to expand upon more recent lines of inquiry to incorporate HRO principles as a means of understanding how principals can foster and maintain CTE to ultimately support high levels of student achievement for all. When principals foster CTE among staff, they work toward a highly reliable school with high levels of student achievement. Both HRO principles and the Wallace Foundation's leadership practices can serve as a lens through which to explore overall achievement in education. School leaders can leverage these aspects to ensure academic achievement for all students regardless of their SES or other demographics, and to provide equitable educational experiences each and every day for every student.

CHAPTER 3: METHODOLOGY

Research plans emerge from quantitative, qualitative, or mixed methods, representing different ends on a continuum (Creswell, 2014). On one end, qualitative research is an “approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem” (Creswell, 2014, p. 4), ultimately aiming to find meaning within complex situations. On the other end, quantitative research is used to test theories and examine relationships among variables, whereas mixed methods incorporates elements of both (Creswell, 2014). Moreover, it has been argued that “mixing” data “provides a stronger understanding of the problem or question than either by itself” (Creswell, 2014, p. 215). Elements of philosophical perspective, research methods, and design must all be thoroughly considered and laid out prior to conducting research. Creswell (2014) shared that an approach must be selected that brings together epistemology, research design, and methods for conducting research.

The philosophical perspective framing this research was interpretivism, which is a paradigm, or framework, leading researchers toward the goal of understanding human actions and interactions within specific contexts (Glesne, 2016). Another label for this philosophical perspective is constructivism, which is a subjective form of research focused on specific contexts and participant interactions to inform understanding. The researcher seeks participant perceptions in the process of constructing patterns of meaning. Constructivism is often linked to qualitative research methods. For example, one aspect of qualitative research is the use of open-ended questions to allow participants’ views to be shared openly, which underscores the value of participant interactions in constructivist research (Crotty, 1998). The use of open-ended questions in both teacher focus groups and principal interviews allowed for participant perceptions and experiences to be shared. Case studies are an example of qualitative research

allowing researchers to collect various types of data through the research study (Creswell, 2014). These introduced elements are outlined and further explained in detail throughout the rest of the methodology chapter.

Epistemology

It is important to acknowledge that “theory plays important roles in guiding empirical research in the social sciences and education by providing guidance about the questions to ask, the key constructs to measure, and the hypothesized relationships among these constructs” (Murnane & Willett, 2011, p. 15); therefore, it is essential to have a strong understanding of the theoretical underpinnings within any field of study. In this study, social cognitive theory (Bandura, 1993) and organizational learning theory (Collinson, 2007; Senge, 2006) both offer an explanation for behavior and serve as a lens that “shapes the types of questions asked, informs how data are collected and analyzed and provides a call for action or change” (Creswell, 2014, p. 64). Aspects of ontology, what makes for reality, and epistemology, what makes for knowledge of that reality, are important considerations when examining research. Ontologically speaking, studies with human action can generally be understood as relative, meaning there is no absolute truth. Guba (1990) asserted “realities exist in the form of multiple mental constructions, socially and experientially based, local and specific, dependent for their form and content of the persons who hold them” (p. 27).

Schools represent a multitude of such realities, each as unique as the students, teachers, and principals that make them. Therefore, it makes sense for research in schools to include insight into the realities of individual school contexts to learn about the greater collective because the perspectives of individuals can uncover group culture and patterns (Glesne, 2016). Employing mixed methods research provided the opportunity to examine multiple perspectives

of an individual school while incorporating various types of data. Understanding a specific school site can be accomplished through the use of instruments such as the Collective Teacher Efficacy Scale (CTES; Filpula, 2016; Goddard, 2001; Goddard et al., 2015; Goddard et al., 2000; Tschannen-Moran & Barr, 2004; Versland & Erickson, 2017), focus groups (Filpula, 2016; Versland & Erickson, 2017), principal interviews (Filpula, 2016), and document review (Filpula, 2016; Versland & Erickson, 2017) in ways similar to studies represented throughout the literature.

In a constructivist paradigm, the researcher is a part of the research process and must be accounted for throughout the research design (Guba, 1990). Research is therefore subjectivist in nature, meaning the “inquirer and inquired are fused into a single monistic entity” and “findings are literally the process of interaction between the two” (Guba, 1990, p. 27). Through dialogue, co-constructed understandings emerge from “the interactivity between researcher and researched being recognized and utilized in the teaching and learning process between the two” (Guba, 1990, p. 78). To that end, “Focusing on the social process of construction, reconstruction, and elaboration must be concerned with conflict as well as consensus” (Guba, 1990, p. 78), further informing the research design. Previous research examining CTE and leadership demonstrated similar epistemological understanding through the use of focus groups and interviews as well as member checking and the triangulation of data (Versland & Erickson, 2017). Constructivist methodology supports research in natural settings, in this case, a school.

Research Approach

A primarily qualitative single embedded mixed methods case study was employed in the current study to answer the research questions. The research questions were designed to examine

how leaders develop and maintain CTE in an elementary school within the context of an HRO framework:

1. How do elementary teachers perceive collective efficacy in their individual school?
2. How do elementary principals perceive collective efficacy in their individual school?
3. How do HRO principles affect principal decision making in elementary schools?

Case studies are defined as “an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident” (Yin, 2014, p. 16). Research within a school can easily fit into this method because each school encompasses unique demographics within contemporary society. Furthermore, case studies enable researchers to manage situations in which many variables exist, and multiple sources of information triangulate as they come together, previous theoretical understandings also guide the case study research design and analysis (Yin, 2014). Because case studies are primarily poised to answer how and why questions, they are suitable as a framework for researching educational achievement questions. Both Filpula (2016) and Versland and Erickson (2017) relied on case study approaches to answer questions relating to CTE and those studies were used as foundational models for this research.

Case study research is appropriate when three conditions are met: (a) the research focuses on how and why questions, (b) the researcher is not controlling events, and (c) the topic is a contemporary phenomenon (Yin, 2014). This case study can be classified as explanatory because the “purpose is to explain how or why some condition came to be” (Yin, 2014, p. 238); in this case, how or why CTE affects both teachers and administrators. This case is considered critical because it was based on a clear set of propositions believed to be true, including how high levels of CTE influence student achievement. Therefore, the “single case can be used to determine

whether the propositions are correct or whether some alternative set of explanations might be more relevant” (Yin, 2014, p. 51). Furthermore, the case is common, looking to gain understanding about social processes and innovative processes within a school setting (Yin, 2014).

Within single case design, there are holistic and embedded approaches. Embedded case design has multiple subunits that, when designed correctly, focus back to the larger and overall case unit of analysis (Creswell, 2014; Yin, 2014). Embedded design is more complex, and the inclusion of subunits provides the opportunity for researchers to extensively analyze and deeper insight into the single case (Yin, 2014). Subunits for this research included teacher perceptions of collective efficacy, principal perceptions of CTE, and HRO principles in addition to the composition of the school. This research was built upon the understanding that embedded case studies often “rely on holistic data collection strategies for studying the main case and then call upon surveys or other quantitative techniques” (Yin, 2014, p. 66) to supplement collected data.

Yin (2014) shared that within mixed methods case studies, quantitative data collection can support individual subunits within the case. Understanding that both “qualitative and quantitative data provide different types of information- often detailed views of participants qualitatively and scores on instruments quantitatively- and together they yield results that should be the same” (Creswell, 2014, p. 219) leads to the convergent design selected. Convergent data collection occurs simultaneously and is often selected for studies involving research in schools (Creswell, 2014).

The desire for stronger understanding of this case led to the use of additional data, further defining the research approach as mixed methods. Mixed methods research is defined as “an approach to inquiry that combines both qualitative and quantitative forms of research;”

furthermore, “it involves philosophical assumptions, the use of qualitative and quantitative approaches, and the mixing or integrating of both approaches in a study” (Creswell, 2014, p. 244). Morse and Niehaus (2009) described the “anatomy” of a mixed methods study consisting of a core component, “the primary, main, or foundational study in your project” (p. 23) and a supplemental component that is “conducted alongside the core method, is relatively independent but joins the main project at the *point of interface*” (p. 24). This point of interface “is the position in which the core and supplement component meet during the conduct of the research” (p. 25) and both qualitative and quantitative research analysis are addressed in the data analysis portion. It is imperative that both core and supplemental components are researched according to existing methodology (Morse & Niehaus, 2009). Following Morse and Niehaus’s (2009) anatomical notation, this research was QUAL+quan because it included a “qualitatively-driven core component, a quantitative supplementary component, and the core and supplemental components are conducted *simultaneously*” (p. 28). For this study, therefore, I collected primary quantitative data via the CTES while also considering school demographic information and achievement data. These are reported as descriptive statistics, or averages and percentages that summarize the sample participant data, but not extending inferences to the larger population (Gliner et al., 2017).

Case Study Research

Yin (2014) outlined five essential components for case study design, including case questions, propositions, units of analysis, logic linking data to propositions, and criteria for interpreting findings. For this study, the questions were poised to answer how questions in relation to CTE while considering multiple stakeholder perspectives and lenses for reflection. Two of the research questions were designed to understand how both teachers and principals

perceive CTE. The third question was designed to understand how HRO principles affect principal decision making. A proposition statement reflects a theoretical issue and guides the researcher toward where to look for information (Yin, 2014). The proposition of this study was that principals foster and develop CTE within HROs. How this comes to life within a particular school setting was the focus for this research. Although this research involved a single case of one elementary school, there were multiple subunits of analysis embedded to fully understand the phenomenon.

There are several ways to link data to propositions, yet pattern matching best addressed the constraints of the current study. Pattern matching “compares an empirically based pattern- that is one based on the findings from your case study- with a predicted one made before you collected data” (Yin, 2014, p. 143). For this research, the assumption was that principals affect CTE within a high achieving school, but determining how, by comparing previously identified aspects of CTE and HRO principles may make the pattern clearer. Finally, based on the qualitative nature of this study, it is important to address and reject rival explanations to strengthen the findings.

Researchers have developed tests to ensure both logical research design and the presentation of information. These tests include trustworthiness, credibility, confirmability, and dependability, which are important elements of case study design and implementation (Yin, 2014).

Trustworthiness

Construct validity refers to “identifying correct operational measures for the concepts being studied” (Yin, 2014, p. 46) and also requires “investigators [to] use adequate definitions and measures of variables” (Creswell, 2014, p. 243), which is not a simple task in either research

design or implementation. However, there are elements to increase construct validity, including the identification of potential threats and how to address them (Creswell, 2014), employing multiple sources of evidence, establishing a chain of evidence, and allowing for review by participants (Yin, 2014). This research included multiple points of data to deepen the understanding of CTE. Data points included the CTES, teacher focus groups, and principal interviews to gain a deeper understanding of perceptions. I used member checking to ensure participants' experiences were represented accurately and served to "reconstruct the 'world' at the only point at which it exists: in the minds of constructors" (Guba, 1990, p. 27), staying true to participants' perceptions. The participants were able to review the presentation of the findings before final publication.

Credibility

Internal validity is typically a focus in explanatory case studies as the researcher aims to "establish a causal relationship, whereby certain conditions are believed to lead to other conditions, as distinguished from spurious relationships" (Yin, 2014, p. 46). Creswell (2014) added internal validity threats include "experimental procedures, treatments or experiences of the participants that threaten the researcher's ability to draw correct inferences from the data about the population in an experiment" (p. 244). In case study research, the use of inferences can become an issue of internal validity. Internal validity threats can be addressed during analysis through pattern matching and addressing rival explanations (Yin, 2014). The empirical patterns from this research suggested high levels of perceived collective teacher efficacy, which were further supported through examples of strategic leadership decisions. The predicted patterns matched the empirical and uncovered other aspects of leadership that potentially influence staff

collective efficacy. As Yin (2014) stated, “If the empirical and predicted patterns appear to be similar, the results can help a case study to strengthen its internal validity” (p. 143).

Confirmability

External validity is achieved by “defining the domain to which a study’s findings can be generalized” (Yin, 2014, p. 46). Creswell (2014) shared that external validity threats “arise when experimenters draw incorrect inferences from the sample data to other persons, other settings, and past or future situations” (p. 243). Research design is the primary phase in which the researcher is responsible for taking measures to address issues of generalizability by incorporating theory in single case studies. Theory can be used for analytic generalization and may be used to reject or accept existing concepts or new ideas emerging from the case (Yin, 2014). This is further addressed in the analysis portion of the dissertation.

Dependability

Reliability means “demonstrating that the operations of a study- such as the data collection procedures- can be repeated, with the same results” (Yin, 2014, p. 46). In a qualitative manner, it is important to note that “most samples of qualitative data have multiple stories to tell, and each person coming to the data brings with them their own purposes, perspectives, experiences and knowledge” (Bazeley, 2013, p. 150). Bearing in mind the subjective nature of qualitative analysis, it is important for a single coder to remain consistent throughout the research as opposed to multiple reviewers reaching the same conclusions. Despite multiple constructions of data, it is common practice to have others review or check qualitative findings. External review by editors and participant review were two ways of checking findings in this research. Another important distinction is that reliability is aimed at conducting the same study with the same results, rather than study replication (Yin, 2014). The study was not replicated

within this research; however, Yin (2014) recommended adhering to case study protocol, developing and maintaining a database for all case information, and operationalizing research steps to encourage a repeat study with the same results. These tests support logical research design and presentation of findings, yet case study design requires much more.

Considerations for Case Selection

Another aspect of case study research design is case selection, as this serves as the “centerpiece of your case study” (Yin, 2014, p. 95). Case selection considerations should be made carefully and based on current research and data. The Learning Policy Institute stated the national average principal tenure is 4 years (Levin & Bradley, 2019). Filpula (2016) also used principal longevity of 4 years as the criterion in case selection. In the absence of updated averages, it makes sense that future research adhere to the same indicator of principal tenure of at least 4 years for case selection. Student achievement is a primary indicator of school success today. At the high school level, achievement is understood through graduation rates and ACT scores; however, in order to understand CTE in elementary settings, these measures of student achievement are not appropriate. Therefore, the appropriate measures of student achievement in elementary schools include standardized testing measures; in Colorado the test is called Colorado Measures of Academic Success (CMAS). Although standardized testing measures reflect a one-time assessment of student performance, school leaders track this performance over time to monitor growth. Definitions for achievement and growth were taken from *Education Week*, which stated “achievement is a point-in-time measure that evaluates how well students perform against a standard. In contrast, progress is measured by how much ‘growth’ students make over time, typically from one year to the next” (Douglas, 2013, para. 2); the author went on to suggest there can be greater insight when both measures are used together. Along with other

demographic factors, I used achievement and growth together for consideration of case selection for the current research. Bearing in mind the expectation for all students to be successful, achievement was measured by annual state test data for grade level and the overall school, and growth included grade level and school progress over time.

According to the U.S. Department of Education:

Schools in which children from low-income families make up at least 40 percent of enrollment are eligible to use Title I funds to operate schoolwide programs that serve all children in the school in order to raise the achievement of the lowest-achieving students. (para. 4)

Therefore, it makes sense that researchers consider a population of students eligible for free and reduced lunch of 40% or greater when determining a low socioeconomic case selection. Closely tied to socioeconomic disparities, equity is an important consideration in research design.

Goddard et al. (2017) determined collective efficacy promotes achievement for all students while also mitigating the achievement gap, promoting achievement for Black and Latino students. Because collective efficacy has been shown to mitigate the achievement gap among various groups of student populations, it warrants further research, especially in schools composed of diverse student populations. Research indicates “collective teacher efficacy was found to be significantly and positively related to student achievement” (Tschannen-Moran & Barr, 2004, p. 204), which is why uncovering aspects associated with collective efficacy may promote more effective schools (Tschannen-Moran & Barr, 2004).

Exploring individual schools may not dictate wide-scale reform efforts, yet providing additional insights can inform educational improvement efforts. The role of teachers is paramount both in the educational system and the current research. The use of the CTES (Goddard et al., 2000) and teacher focus groups provided a deeper look into both the level of CTE and the perceptions of teachers in relation to the fostering and development of CTE. Placing

responsibility on leaders to facilitate growth while inviting teachers into the understanding of school improvement is why I included both perspectives in this research.

School Demographics of Case Site

Identifying a school that met the required case considerations required a thorough analysis at the state level. School demographics and school achievement can be determined through several sources in Colorado. The Colorado Department of Education provides extensive school data that can be viewed by the public through “School View” on its website. Other tools such as “School Digger” and “Great Schools” can serve as more informal means of obtaining school data. Complying with the outlined case considerations described above, and including principal tenure, school achievement, and student population demographics, only a handful of schools met all criteria. In Colorado, at least 400 elementary schools out of over 1,000 schools have 40% free and reduced lunch student populations, reflecting a large potential research population. However, not all of these schools met state levels of proficiency on standardized testing. Continuing to sift through school achievement data and demographics, a handful of schools appeared to be achieving above state averages with around double (80%) the free and reduced lunch populations required to receive federal Title I funds. Several elementary schools in a southern urban district met the research criteria. The selected school was contacted and the principal agreed to research on CTE within the school. Qualitative research relies on purposeful sampling in order to select a site that can provide a deeper understanding into the phenomenon of interest (Creswell, 2015). Case selection in this study was purposeful because the site was selected to learn more about high achievement in low socioeconomic school settings.

The selected school is situated in an urban district in Southern Colorado, serving 571 K-7 students, and will be K-8 by the 2022 school year. The school is an International Baccalaureate

School with nearly 80% free and reduced lunch student population. The reported ethnic and racial demographics include roughly 58% Hispanic students, nearly 20% White students, about 12% Black students, almost 8% of students identify as two or more races, about 2% of students identify as Asian, and less than 1% of students identify as either American Indian/Alaskan or Native Hawaiian/Pacific Islander. In addition to ethnicity, students are identified in the following group memberships. Approximately 20% of students are identified as English language learners (ELLs), about 14% of students qualify for special education services, and 3% of students have been identified as gifted and talented. Furthermore, the principal has been leading the school for 8 years and currently has the support of two assistant principals. The school has also been recognized by the state for 2016 to 2018 as a school that demonstrates high longitudinal growth with over 75% of students identified as at risk. I used School Digger (2020) to examine 2019 school CMAS data for combined grades (i.e., Grades 3–5) and found the school ranked considerably higher in science (45.2%) than the state average (30.7%). Though the school language arts CMAS data (43.8%) were slightly behind the state average (45.8%), the fifth grade data (55.6%) stood out as considerably higher than the state average (48.4%) for language arts. This data trend continued for math as well, with a school average (40.8%) exceeding the state average (34.7%) and an even larger spread for fifth grade at the school (52.9%) compared to the state (35.7%). Aside from strong achievement scores, the school also demonstrates strong growth data according to the Colorado Department of Education Preliminary 2019 School Performance Framework (SPF). The overall 84.5% on the most recent SPF is the highest SPF for schools in the state with at-risk populations. Furthermore, the 74% median growth performance (MGP) in ELA and 84% (MGP) in math both exceed state expectations. The school has strong achievement data (meets state expectations) paired with even stronger measures of growth

(exceeds state expectations). There are no updated data to determine whether the trend continues; however, this school shows promise as a school with high needs population and demonstrated high achievement.

Participants

Participation in this research was completely optional. The CTES was optional for certified and classified staff members to complete. Teacher focus groups were optional for staff members and were organized by the principal. I collected consent forms prior to conducting the teacher focus groups. The K-8 school has 83 staff members, including administration, certified teachers, and support staff.

Survey Data Group Participants

Of the 83 staff members, 48 opted to complete the CTES. The school administration was not asked to take the survey, bringing the response rate to 48 of 73 potential respondents, or a 66% response rate. Of the 48 staff members who completed the CTES, 37 were certified staff members and 11 were classified staff members. A total of 28 staff members had been at the school 0–5 years and 20 had been at the school for 6–20+ years.

Focus Group Participants

I conducted two teacher focus groups with a variety of certified staff members. One was conducted remotely via Zoom for participant comfort and safety given the COVID-19 global health crisis. The virtual focus group included seven staff members, including instructional coaches, special education teachers, and primary classroom teachers. The second focus group was conducted in person with six staff participants, including elementary and middle school homeroom teachers, coordinators, and culturally and linguistically diverse educators. Both focus

groups lasted approximately an hour. I took notes during the focus groups and both were audio-recorded for data transcription.

Interview Participants

I conducted three separate principal interviews with the principal and two assistant principals. The principal has been in the position for 8 years and the assistant principals range in their years of service. Although one assistant principal was new, they had experience teaching at the case site school, so this interview provided a unique perspective as both a teacher and leader. Principal interviews ranged from 45 minutes to over an hour for the conversations. To ensure as much anonymity among leadership as possible, names and other identifiers were removed when appropriate. Principal comments were combined across the analysis, although I transcribed each interview separately. Since the completion of the interviews, the school leadership has shifted. The principal accepted a new position at the district level and the assistant principal with more tenure stepped into an interim principal role and was recently selected to continue as principal at the school. The other assistant principal remains in the same position at this time. Prior to this shift, the leadership in this school had remained consistent, only adding positions as the school expanded to K-8. With a clear understanding of the selected case and participants, focus can shift to data collection.

Data Collection

Existing literature and studies involving various instruments and research approaches inform future research in order to more fully explain and understand the role of principals in fostering CTE. The CTES is an instrument employed across the field of research to measure staff perceptions of collective efficacy (Goddard et al., 2000). More recent studies included qualitative approaches to data collection such as focus groups and interviews in order to gain a more robust

understanding of the complexities of school leadership and CTE (Filpula, 2016; Versland & Erickson, 2017).

Case study research outlines six sources of evidence and four principles of data collection to incorporate into quality research (Yin, 2014). The sources of evidence are documentation, archival records, interviews, direct observations, participant observation, and physical artifacts. Yin (2014) noted that no source of evidence has a clear advantage over another and they are better suited to complement each other, suggesting researchers incorporate as many sources of evidence as possible. The sources of evidence are contextualized for this research in Table 1.

Table 1

Sources of Evidence

Source of evidence	Examples from the current case study
Documentation	Administrative documents including data progress reports and internal records; formal studies related to school; district and school website data and newspaper reports.
Archival records	Colorado Department of Education data; maps and geographical characteristics of the school; survey data produced by others, including the Teaching and Learning Conditions Survey (TLCC) issued through the Colorado Department of Education.
Interviews	Interviews with principal and assistant principal; teacher interviews and focus groups (including semi-structured interview questions that were transcribed and analyzed).
Direct observations	Involvement in school happenings including classroom interactions, faculty meetings, and other casual activities.
Participant-observer	This was not addressed because I am not a staff member. I participated in the research but do not inform school decisions.
Physical artifacts	Collective Teacher Efficacy Survey (CTES; Goddard et al., 2000) administered to teaching staff (descriptive analysis based on Goddard's recommendations and other statistical considerations).

Yin (2014) suggested multiple sources of evidence provide strength to case study research, which leads to triangulation of data. Creswell (2014) described data triangulation as examining different sources of data, and “if themes are established based on converging several sources of data or perspectives from participants, then this process can be claimed as adding to the validity of the study” (p. 201). Triangulation of data occurred through an examination of teacher efficacy surveys, teacher focus groups, and principal interviews in addition to other documents and data collected. The other principles of data collection include creating and maintaining a database, creating a chain of evidence to enhance reliability, and using caution when interpreting electronic data sources (Yin, 2014).

I analyzed aspects of organizational learning theory, social cognitive theory, and HRO principles to explore their potential impact on school decision making and the creation of high-performing schools. Subunits of principal leadership, CTE, and HRO principles were incorporated into the research design. Principal leadership was explored through teacher focus groups and interviews with school leadership. CTE was considered in the teacher efficacy survey, teacher focus groups, and principal interviews. HRO principles were examined through the analysis of principal interviews. To provide a more complete view of the school as a system, I included quantitative data elements such as student demographics, achievement, and data in order to further contextualize the case site in the initial description of the case selection.

Measuring Collective Teacher Efficacy

Rigorous data collection requires an assurance of the reliability and validity of the instruments used in research. The CTES was modeled from an original teacher efficacy scale (Gibson & Dembo, 1984) created through a series of reviews, field testing, and a pilot study, which supported both reliability and validity of the instrument (Goddard et al., 2000). After

removing redundancies and retesting, the scale showed high internal validity ($\alpha = .96$; Goddard et al., 2000). The revised Likert-type scale was used in a study in elementary schools and results showed CTE positively affects student achievement and offsets the negative association between SES and student achievement (Goddard et al., 2000), which supports previous assertions of the importance of CTE in student achievement outcomes. This scale also supports the understanding that:

When teachers believe they are members of a faculty that is both competent and able to overcome the detrimental effects of the environment, the students in their building have higher achievement scores than students in buildings with lower levels of collective efficacy. (Goddard et al., 2000, p. 503)

In order to interpret instrument results, researchers must reverse score several items, add scores for individual items, and average individual teacher scores to find the collective efficacy score of the school. Although this scale measures levels of perceived collective efficacy, the CTES alone cannot answer how these perceptions are fostered by school leaders. Therefore, this already validated tool provided descriptive data when gaining insight into the sample population and initial perceptions of CTE. Additionally, teacher and leader perceptions get at the core of how these levels of CTE are developed, supporting case research.

Interviews and Focus Groups

Interviews and focus groups serve as a qualitative research strategy that enables participants to express their own experiences in response to open-ended questions (Creswell, 2015). Conducting interviews requires thoughtful consideration of the selection and consent of interview participants, preparing for a semi-structured and flexible interview format, recording responses through audio recording and written notes, and monitoring the overall demeanor of the researcher during the interview (Creswell, 2015). Creswell (2014) suggested the need to create an interview protocol to outline questions and record answers in addition to recording interviews

for transcription. Member checking with participants to ensure the accuracy of findings and themes can further ensure research validity before the final results are shared (Bazeley, 2013; Creswell, 2014). Analysis of interviews includes memo writing, aggregating data into themes, and analyzing data through computer assistance or by hand (Creswell, 2014). Because “focus groups are used as a source of data where the interaction between participants is expected to generate additional or different information from that obtained when someone is interviewed alone” (Bazeley, 2013, p. 198), focus group data analysis requires attention to group interactions in addition to what was said by participants. To build upon the CTE scale data and maintain focus on CTE in a robust manner, the interviews and focus groups ultimately related back to CTE. Teacher focus group questions extended the CTES by eliciting specific examples and reflections of teacher perceptions of Bandura’s (1997) sources of efficacy, Brinson and Steiner’s (2007) suggested efficacy building actions, and Donohoo’s (2018) assertion about job satisfaction. Sources of efficacy questions that were asked of teachers were as follows:

- How has your school experienced success? Describe a time when your school has experienced success. How has this shaped the work you do in your classroom?
- How have you seen other teachers and other schools be successful? Describe a time when a colleague was successful teaching. How did this affect your teaching?
- How would you describe the relationship and interactions of your school staff?
- How does your staff handle tough situations?
- Can you tell me about a time you have felt valued as a teacher?
- Can you describe an experience that has really motivated you as a teacher to improve your practice?

- Can you describe how your perceptions of your teaching skills have changed since you started at this school? What events/experiences have affected these perceptions?
- What ways do teachers help students master content?
- How do teachers in your school promote critical thinking among students?

Efficacy building action questions that were asked of teachers were as follows:

- How does your school build teacher instructional knowledge?
- How do teachers collaborate in your school?
- What type of feedback do teachers get at your school?
- How are teachers involved in decision making in your school?
- How satisfied are teachers at your school?

The principal interview questions were designed to understand perceptions of CTE, the role of the principal, and the potential interaction of HRO principles as they relate to principal decision making. Sources of efficacy questions that were asked of principals were as follows:

- How has your school experienced success? Describe a time when your school has experienced success. How has this shaped the work you do in your school?
- How have you seen other leaders and other schools be successful? Describe a time when a colleague was successful leading their school. How did this affect your leadership?
- How would you describe the relationship and interactions of your school staff?
- How does your staff handle tough situations?

Efficacy building action questions that were asked of principals were as follows:

- How does your school build teacher instructional knowledge?
- How do teachers collaborate in your school?

- What type of feedback do teachers get at your school?
- How are teachers involved in decision making in your school?
- How satisfied are teachers at your school?

HRO questions that were asked of principals were as follows:

- How does your school pay continuous attention to anomalies that could be symptoms of larger problems?
- How do all school stakeholder actions affect the school functioning?
- How do you plan and monitor school operations?
- How do you respond to errors as they arise?
- How is collaboration supported in this school?

Data Analysis

The included elements of research design establish an understanding of this research, which leads to research analysis procedures. Creswell and Yin are often consulted to guide research design and analysis and their work serves as the foundation for this research design and analysis. When designing case study research, it is essential to ensure the case relates to the questions guiding the research (Yin, 2014). I was interested in understanding perceptions of CTE and how HRO principles might guide school leadership decision making, which made a school an appropriate case site. When deeply exploring a case site, it is important to note the inclusion of subunits promotes an embedded design (Yin, 2014). Though the subunits provide greater insight into the case, it is important to temper focus to ensure commitment to the case as a whole (Yin, 2014). In the current research, I employed single, embedded case study research design drawing from existing theory and research. Creswell (2014, 2015) broke down the analysis of qualitative data into six steps, including organizing and preparing transcribed data, reading and

exploring data, coding data to generate descriptions or themes, using codes to generate description, representing themes through narrative, and interpreting data findings. Working through these phases leads a researcher to specifically validate findings and ensure reliability (Creswell, 2014). These phases are iterative in nature, yet ultimately enable a researcher to employ an inductive, “bottom-up” analysis approach, translating specific information to overall thematic understanding (Creswell, 2015). This supported a methodological aspect of the guiding theoretical framework described by Guba (1990) as “the constructivist proceeds in ways to identify the variety of constructions that exist and bring them into as much consensus as possible” (p. 26). Yin (2014) recommended four strategies specific to case study analysis. Relying on theoretical propositions, working data from the ground up, developing a case description, and examining plausible rival explanations can be used independently or in concert to analyze data (Yin, 2014). These four strategies weave into Creswell’s suggested phases and are thus included throughout the phases. These steps are addressed in the data analysis section, honoring specific qualities of QUAL+quan data analysis and analytic techniques that are unique to case study research. A description of how these analysis procedures match the current research is outlined below.

Creswell’s (2015) six-step qualitative data analysis supports starting with data organization. For this research, data organization included a matrix (see Table 2) of all data gathered in this research, including interviews, documents, and other materials. Data transcription, or the transfer of audio recordings into text format, occurs during this data organization phase as well (Creswell, 2015). After recording focus group and interview conversations, I transcribed the data to gain a deeper familiarity with the content. Once the interviews are transcribed, computer analysis of transcripts can benefit the organization of a large

database and closer analysis of individual words to gain meaning (Creswell, 2015). NVivo is a qualitative data management and analysis program I employed to make sense of complex data. I also analyzed the data by hand when necessary, including the use of memos to capture analytic thoughts or epiphanies (Bazeley, 2013). I also used a word cloud generator to aid in getting a general sense of the data prior to coding. Interview and focus group transcripts were put into word cloud analysis to provide greater insight into themes of the data.

Document review supported building descriptions of the specific case context. Bazeley (2013) shared that “situational information relating to specific events or experiences, including the physical settings in which particular events occur, the timing of events, or changes in circumstances will vary throughout data sources” (p. 119), which is why it is important to highlight the relationships that exist among the sources. The documents I reviewed were from district, school, and state websites; from the school administration; and from individual teachers. Documents included communication, policy, agendas, data and progress reports, and other school-related information. These were coded based on content and compiled to add greater detail to the overall case description.

Table 2

Collected Research Records

Data	Records filed
Principal interviews	Audio recording, transcribed notes, coding notes, code book, NVivo, word cloud
Teacher focus group	Audio recording, transcribed notes, coding notes, code book, NVivo, word cloud
Collective Teacher Efficacy Scale	Individual scales, statistical analysis report
Document review	Images and documents associated with school
Demographics	Recorded demographics
Test data	Test scores (achievement and growth over time)

The next phase of qualitative research involves exploring and coding the data to gain an initial sense of the data (Creswell, 2015). To begin, this requires reading the entire manuscript to understand the scope of the information. Bazeley (2013) recommended researchers review the entire transcript document to “remind yourself of the depth and breadth of its content” (p. 101). Before I coded the transcripts, I carefully reviewed the transcripts in entirety. My coding process involved breaking individual transcripts into sentences or paragraphs that related specifically to one code, also called text segments, yet not every segment was coded in order to keep the number of codes manageable (Creswell, 2015). Codes include a number of aspects such as the setting, perspectives, processes, activities, or relationships. In this research, codes were expressed using a combination of the precise language of participants, common educational terms, and researcher language. I coded passages of data in chunks or units of meaning rather than engaging in line-by-line coding. Bazeley described the purpose of coding as to “both *represent* and to *access* that passage along with other data that are the same or similar” (p. 125). Following initial coding, I organized and condensed codes, simplifying the codes to themes that encompassed participant perceptions.

Creswell (2015) suggested describing and developing themes from the data in order to gain a deep understanding of the phenomenon of interest in the study. Detailed description is necessary to bring the research context to life for the reader (Creswell, 2015). This description is built upon by including both major and minor themes from the research. Creswell also suggested including multiple perspectives from different individuals, which is why I included teacher and principal perspectives to develop central themes. Description and development of themes followed the coding process and led to reporting of the findings. I wrote a narrative description to summarize and convey the findings from the data analysis. The narrative was written as

Bazeley (2013) suggested to “construct a single coherent and complete version from all available sources” (p. 115) when drawing from multiple sources to inform a single case. I also searched for similarities or differences among interview or focus group responses during this analysis to better understand actions relating to teacher efficacy.

The following step, summarizing the data, also requires an interpretation of research findings. Creswell (2015) described this as when “the researcher steps back and forms some larger meaning about the phenomenon based on personal views, comparisons with past studies or both” (p. 256). I incorporated literature from previous research to further interpret and understand the findings. I included this literature in the review of literature and wove it into the description of findings to some degree in Chapter 4 and more extensively in Chapter 5. I used the existing literature to help frame the current research and ensure the accuracy of the findings. Aspects of data triangulation and member checking are just two ways of doing this. I provided participants the opportunity to verify findings prior to the presentation of the research.

Strategies of Case Study Analysis

Following the strategies of case analysis presented by Yin (2014) provided a starting point for data analysis. Relying on theoretical propositions, working data from the ground up, developing a case description, and examining plausible rival explanations (Yin, 2014) are the four strategies presented to aid in data analysis; the primary strategies used are described in greater detail here. I used these case study specific analysis strategies in conjunction with Creswell’s suggested data analysis procedures. The overarching guiding theoretical proposition (Yin, 2014) in this research was that principals foster CTE among staff, which helped formulate the guiding research questions and interview questions. I further explored and analyzed this theoretical proposition through data transcription, coding, and analysis while also considering

other supporting school leadership theories. Working data from the ground up is the second strategy suggested by Yin when conducting case study analysis. Yin described this ground up approach as “you may now find that some part of your data suggests a useful concept or two,” further explaining that “such an insight can become the start of an analytic path, leading you farther into your data and possibly suggesting other relationships” (p. 137).

The themes from the research emerged through an iterative coding process. Coding took place in two main phases as suggested by Bazeley (2013), including “an initial state of identification and labelling, variously referred to as first-level” and “a second state of refining or interpreting to develop more analytical categories or clusters, often referred to as focused coding” (p. 126). Initial coding provided the opportunity to explore the context of the interview and focus group data with the important acknowledgment of the unique circumstances brought about by COVID-19. Teacher development, teacher involvement, feedback, school culture, leadership, and instructional focus were the initial codes from the data. Bazeley stated a common practice for researchers is to conduct second level coding using meta codes, which are a “number of codes pulled together into a ‘higher-level’ (more abstract) conceptual category or construct” and serve to “help you see the larger picture in your data” (p. 233). This process of metacoding simultaneously narrowed the codes into themes. Bazeley defined a theme as “an integrating, relational statement derived from the data that identifies both content and meaning” (p. 190), further sharing the importance of “working out the relationships between code categories, and the significance of such relationships” (p. 191) as well. Upon further analysis and revisiting extant literature, the coded data were situated within three larger themes of communication, culture of collaboration, and situational awareness, which were adapted from the work of

Marzano et al. (2005) and supported through other scholarship as well. All three themes surfaced when looking across the collected focus group, interview, and survey data.

Ethical Considerations

Of utmost importance is that research should be ethical in nature. I ensured this study was ethical through a variety of checks and approvals at the individual, school, district, and university levels. I obtained Institutional Review Board approval through Colorado State University to protect human rights for all stakeholders. Ethical considerations are also at the forefront of analysis and dissemination of research findings in order to respect participant privacy, avoid disclosing harmful information, avoid sharing only positive results, or falsifying information (Creswell, 2014). Further ethical considerations are outlined below. As I conducted this research within a school district, school district policies for research approval were upheld prior to the start of research.

Consent

Creswell (2014) outlined aspects that should be present in obtaining participant consent. Informed consent includes identifying the researcher and sponsoring institution, identifying the purpose of the study, identifying the benefits and any risks of participation, identifying the level and type of involvement required of participants, guaranteeing confidentiality and the ability to withdraw at any time, and providing contact information if questions arise. These considerations were included in the developed consent form (see Appendix). I used a university approved format when developing my consent form and made sure it included all aspects of my specific research study. At the individual level, informed consent forms were signed and collected prior to data collection. Specifically, the informed consent forms addressed survey participation, audio recording during interviews and focus groups, and general procedures and information. As

Creswell (2014) shared, “Participation in a study should be seen as voluntary, and the researcher should explain in the instructions for consent form that participants can decide not to participate in the study” (p. 97); this also means participants may choose to back out at any time during the study for any number of reasons.

Creswell (2014) outlined other ethical considerations that are of particular importance in a school setting, including respecting the site and disrupting as little as possible, making sure all participants receive the benefits, not deceiving participants, respecting potential power imbalances, avoiding the exploitation of participants, and not collecting harmful information (p. 98). Adding further evidence to the importance of the special care required to develop ethical case research, Yin (2014) outlined obtaining informed consent, protecting participants from harm or deception, protecting privacy and confidentiality, protecting vulnerable populations, and selecting participants equitably. I considered these elements prior to starting research in the school.

As described previously, I upheld participants’ privacy and confidentiality by the use of general descriptions of the case site, not using specific or identifiable names associated with the case site or participants, and stripping data of identifiers by including anonymous completion of the efficacy scales by staff.

Equity

The term equity connotes various meanings across the field of education. As such, the following definition and connections to research serve to promote an understanding of equity within this research, specifically as it relates to CTE. A well-respected equity scholar shared that within:

An educational context, equity means developing environments and systems in ways that provide students with what they need based on careful and systematic attention to the

particulars of their situation. Equality, by contrast, entails providing them with the same, standardized set of conditions and resources regardless of circumstances. (Milner, 2018, p. 88)

Equity for students may be based on any number of identities affecting student achievement, including, but not limited to, SES, native language, race, and cognitive abilities. When it comes to the SES of students, “Teachers in schools with high collective efficacy do not accept low student achievement as an inevitable by-product of low socioeconomic status, lack of ability or family background. They roll up their sleeves and get the job done” (Tschannen-Moran & Barr, 2004, p. 192). Research has demonstrated CTE directly relates to equity as “collective efficacy appears to promote achievement for all students while simultaneously mitigating the achievement gap” (Goddard et al., 2017, p. 229). This implicitly situates CTE as a construct that supports equity in education.

Results of an equity focused mixed methods study looking at the impact of collective efficacy on the achievement gap in schools showed that Black students scored .76 standard deviations lower than peers in math; however, “a one standard deviation increase in collective efficacy was associated with a 50% reduction in the academic disadvantage experienced by black students” (Goddard et al., 2017, p. 229). This means CTE can increase student performance across the school for all students rather than single populations of students (in this case Black students), which increases equity and can simultaneously mitigate achievement gaps (Goddard et al., 2017). Goddard et al.’s (2017) research underscored the importance of CTE when looking into factors affecting student achievement. Equity is an aspect that is not a primary construct of focus, however certain narrative examples allude to it.

Researcher Positionality and Bias

As a professional educator, the topic of student achievement is one with which I have grappled both as a practitioner and in preparing future educators for the realities of the

profession. I have taught in public, private, international, and charter school settings, working with Kindergarten through fifth grade spanning up to preservice teachers at the undergraduate level. I have recently obtained principal licensure and wished to translate theory into practice through this study by constructing meaning from an elementary school with high student achievement, a diverse student body, and a low SES student population. Bazeley (2013) stated “our interpretation is colored by our previous and current personal, social, and cultural experience” (p. 4). As a researcher, it was important for me to acknowledge these biases, all the while working toward the development of my own analytic skills as I attempted to understand the complexities of human experiences unique to this context (Bazeley, 2013). Member checking and data triangulation are important to promote a valid and accurate representation of participant perceptions within research findings.

Limitations

A limitation of the research is the use of a single embedded design case approach. Although single case research can be criticized based on the uniqueness of the case setting, employing a mixed methods embedded design can “permit researchers to address more complicated research questions and collect a richer and stronger array of evidence than can be accomplished by any single method alone” (Yin, 2014, p. 66). I selected qualitative methods and supported the data with descriptive quantitative data within the embedded design to more fully understand the case site.

This research was rooted in a constructivist philosophical understanding with a methodological description based on the work of research experts Yin (2014) and Creswell (2014). I designed this research to provide practitioner friendly accounts in the hope of bringing practical applications and understandings to life through case description. Another limitation of

this study is the global health pandemic COVID-19, which has altered life around the world. Schools are no exception to a new way of life focused on promoting the health and wellness of all while lessening the spread of the deadly virus. COVID-19 and its impact on this study are explained in greater detail in Chapter 4.

CHAPTER 4: DATA ANALYSIS

Consistent with case study research, I collected a variety of data to inform the data analysis. Documentation and archival records provided by administration included district survey data and Colorado State Department of Education data. I conducted three separate interviews with the principal and each of the two assistant principals and conducted teacher focus groups with two groups of certified staff members. Walkthrough observations of classroom instruction and a tour of overall school functioning were an initial part of the research process as well. Data analysis followed the process outlined by Creswell (2015) and Yin (2014). Qualitative data analysis includes data collection, preparing data for analysis, document review, exploring and coding data, developing themes from the data, and summarizing the data and reporting findings by including narratives (Creswell, 2015). When considering the qualitative aspects of the research, the process is both inductive, working from the smaller codes to more generalized findings, and an iterative process of continually revisiting data (Creswell, 2015).

Because I chose to use the QUAL+quan approach to this research study, analysis included supplementary quantitative data as well. The CTES completed by staff members provided additional information for the case study and served to triangulate the data. The supplementary data reflected the staff perceptions of CTE, solidifying this study. Because of the nature of the quantitative survey, the point of interface was considered “results” as the “results from the supplemental strategy are incorporated into the findings of the core narrative, informing the findings of the core method” (Morse & Niehaus, 2009, p. 30) and they add to the description of the case.

The research questions each contained a focus on separate stakeholders (i.e., teachers and principals) and their perspectives. The first two questions focused specifically on perceptions of

CTE. Research Question 1 was: How do elementary teachers perceive collective efficacy in their individual school? The focus was on teacher perceptions through focus groups and the CTES survey data. Research Question 2 contained a focus on the leadership perspective: How do elementary principals perceive collective efficacy in their individual school? I investigated this question through interviews with the administration team. The third question related to HRO principles: How do HRO principles affect principal decision making in elementary schools?

COVID-19

It is important to note that throughout the course of this research, people across the globe have been affected by a global pandemic called COVID-19 that interrupted economies, travel, education, and daily life. According to WebMD (2020), coronaviruses that lead to common cold symptoms were first discovered in the 1960s. These include SARS and MERS, which have affected people in Asia and the Middle East starting in 2003 up through 2015. COVID-19 is believed to have originated in Wuhan, China, at an open-air market with the transmission occurring from an animal to a person. According to CNN Health (2021), “Authorities in 219 countries and territories have reported about 107.5 million Covid-19 cases and 2.4 million deaths since China reported its first cases to the World Health Organization (WHO) in December 2019” (para. 1). As of December of 2020, the United States had reported 19,224,769 cases since the pandemic began spreading in the country. Physical distancing, masks, hand washing, and other elements have become commonplace when coping with COVID-19. The research questions were crafted to encompass pre-pandemic perceptions and pandemic-specific perceptions because things have undoubtedly changed in schools and around the world. In the State of Colorado, much like in many states across the nation, school assessment practices were halted and altered

starting in March of 2020 and have been carried forward into the 2020–2021 school year. Aspects of COVID-19 are addressed throughout the data analysis section when pertinent.

Mixed Methods Approach

Though the overall research questions supported my decision to conduct case study research, I employed a mix of qualitative and quantitative methods to ensure a rigorous research design and to increase the validity of the results. Mixed methods research involves rigorous collection and analysis of both qualitative and quantitative data in response to research questions (Creswell, 2014). More specifically, an advanced mixed methods design fit and framed this research; embedded mixed methods “nests one or more forms of data within a larger design” (Creswell, 2014, p. 228). Because I collected qualitative and quantitative data at the same time, the research can be further described as convergent. The research is labeled as QUAL+quan, as I relied primarily on qualitative data (interviews and focus groups) with supplemental quantitative data (CTES) to enhance the results (Morse & Niehaus, 2009). Both the qualitative and quantitative research analysis processes are described in detail below. Note that the quantitative analysis relates to teacher perceptions of efficacy and is therefore included with Research Question 1.

Qualitative Data Analysis

Revisiting Creswell’s (2015) six-step process for data analysis served as a starting point for data analysis. The first phase involved preparing and organizing the data for analysis (Creswell, 2015), which is when I transcribed the interview and focus group recordings. The second step involved exploring and coding the data through the process of labeling text segments (Creswell, 2015). I explored and coded the transcribed interviews and focus groups using NVivo software and also developed word clouds during the initial phases of analysis. Teacher focus

groups and principal interviews were separated to compile two word clouds that visually represented the spoken words from the conversations. Table 3 is a comparison of terms appearing over 15 times in both the teacher focus groups and the principal interviews. Word counts and weighted percentages are included for additional comparison purposes. Note that there are more terms from the principal interviews with a frequency of 15 times or more. Bolded words indicate repetition between teacher and principal conversations.

Table 3

Term Comparison Between Focus Groups and Interviews

Teacher focus groups			Principal interviews		
Word	Count	Weighted percentage	Word	Count	Weighted percentage
help	52	1.01%	staff	64	0.84%
students	47	0.91%	need	61	0.80%
questions	44	0.85%	teams	53	0.70%
teaching	42	0.81%	successful	51	0.67%
learning	41	0.80%	student	50	0.66%
teams	39	0.76%	help	45	0.59%
classroom	39	0.76%	change	43	0.57%
need	35	0.68%	question	43	0.57%
support	35	0.68%	meet	41	0.54%
trying	32	0.62%	learning	40	0.53%
share	31	0.60%	feedback	39	0.51%
change	28	0.54%	principal	37	0.49%
staff	27	0.52%	situations	37	0.49%
meeting	26	0.50%	instructional	37	0.49%
observe	26	0.50%	process	33	0.44%
group	26	0.50%	share	31	0.41%

Teacher focus groups			Principal interviews		
Word	Count	Weighted percentage	Word	Count	Weighted percentage
collaboration	25	0.48%	data	27	0.36%
feedback	25	0.48%	goal	26	0.34%
covid	24	0.47%	systems	25	0.33%
success	22	0.43%	support	24	0.32%
admin	21	0.41%	collaborative	24	0.32%
principal	20	0.39%	teaching	24	0.32%
positive	19	0.37%	covid	23	0.30%
together	19	0.37%	observation	23	0.30%
class	18	0.35%	leaders	22	0.29%
spot	18	0.35%	principal	22	0.29%
opportunities	18	0.35%	problem	20	0.26%
everybody	16	0.31%	create	20	0.26%
everyone	16	0.31%	leadership	20	0.26%
home	16	0.31%	together	19	0.25%
motivated	15	0.29%	group	19	0.25%
			admin	18	0.24%
			classrooms	18	0.24%
			practices	18	0.24%
			frustrations	18	0.24%
			information	18	0.24%
			structure	17	0.22%
			decision	17	0.22%
			trainings	17	0.22%
			parents	16	0.21%
			perspective	16	0.21%
			action	16	0.21%

Teacher focus groups			Principal interviews		
Word	Count	Weighted percentage	Word	Count	Weighted percentage
			expect	16	0.21%
			high	16	0.21%
			lead	16	0.21%
			spots	15	0.20%
			similar	15	0.20%
			example	15	0.20%
			culture	15	0.20%
			positive	15	0.20%
			around	15	0.20%
			everyone	15	0.20%
			ideas	15	0.20%
			pull	15	0.20%
			running	15	0.20%
			stress	15	0.20%
			imagineering	15	0.20%
			struggle	15	0.20%

This overview of the most frequently used terms throughout interviews and focus groups provides a snapshot of the qualitative data collected. The terms in common among the teacher focus group and principal interviews are referenced below. Terms such as “teaching,” “learning,” “students,” “classroom,” “question,” “staff,” and “meeting” should come as no surprise in an educational research study. However, terms like “positive,” “collaboration,” “feedback,” “success,” “share,” “change,” “support,” and “together” may not be mentioned uniformly across schools. Words providing extra insight from the principal interviews included “systems,” “goal,” “data,” “process,” “instructional,” “culture,” “perspective,” and “decisions,” which underscore

perceived concepts of importance for this particular leadership team. The individual terms provide another layer of information, underscoring the school-wide focus and emphasis and further corroborating the emerging themes.

After initial coding and word cloud analysis came the third phase of qualitative analysis. The third phase involved describing and developing themes from the data, which were narrowed from the initial coding efforts and led to the emerging themes outlined below. Representing findings is the fourth phase of qualitative analysis and is included below, organized by research question. This phase includes “narrative discussion,” is used to “summarize, in detail the findings from data analysis” (Creswell, 2015, p. 253). This description includes participant quotes from the interviews and focus groups to “capture feelings, emotions and ways people talk about their experiences” (Creswell, 2015, p. 256). The next phase included an interpretation of findings, where I summarize findings and connect the current research to previous studies. The final phase included a rigorous validation of the findings in which I determined their accuracy and credibility through member checking and triangulation (Creswell, 2015).

Quantitative Data Analysis

Much like qualitative data analysis requires multiple steps, so too does quantitative data analysis. Quantitative data analysis first requires the researcher to prepare and organize the data. After participants completed the CTES in SurveyMonkey I transferred the data for analysis, which Creswell (2015) explained as “inputting the data” (p. 177). After I gathered and organized the data in a spreadsheet, the Likert score data had to be scored, so I assigned a “numeric score to each response category for each question on the instrument used to collect data” (Creswell, 2015, p. 173). Here, I followed the process outlined by Goddard (Ventura, 2003) that included reverse scoring items, finding scores for each of the 21 items, and averaging the teacher scores to find

the school-wide measure of perceived CTE. This is explained in greater detail in the upcoming section focused on Research Question 1.

Emerging Themes

Through multiple iterations of coding of the teacher focus groups and interviews with the school administration, including the principal and two assistant principals, three major themes surfaced: communication, culture of collaboration, and an overall situational awareness.

Communication includes feedback to staff in a variety of ways. Communication and feedback link closely to the HRO principle of commitment to resilience. When considering CTE sources, communication relates to social persuasion. Culture of collaboration includes the opportunity for staff to participate in shared decision making across the school. Collaboration and shared leadership link closely to deference to expertise, which is another HRO principle. Culture of collaboration is aligned to vicarious experience when looking at CTE sources. Situational awareness includes aspects of school culture, leadership of school administration, and high expectations. Situational awareness links closely with the two HRO principles of sensitivity to operations and preoccupation with failure. Affective states and mastery experiences relate to situational awareness when considering the success of the school and the ability of the staff to navigate crises together. Table 4 provides definitions of communication, culture of collaboration, and situational awareness, further explaining the emerging themes.

Table 4*Themes With Definitions*

Theme	Definition
Communication	Extent to which the school leader establishes strong lines of communication between teachers and students by developing effective means for teachers to communicate with one another, being easily accessible to teachers, and maintaining open and effective lines of communication with staff (p. 47).
Culture of collaboration	The extent to which leadership fosters shared beliefs and a sense of community and cooperation among staff, which includes cohesion among staff, promoting a sense of well-being among staff, developing an understanding of purpose among staff, and developing a shared vision of what the school could be like (p. 48).
Situational awareness	Leaders' awareness of the details and under-currents regarding the functioning of the school and their use of this information to address current and potential problems by accurately predicting what could go wrong from day to day, being aware of informal groups and relationships among the staff, and being aware of issues in the school that have not surfaced but could create discord (p. 60).

Note. Definitions are from *School Leadership That Works* by Marzano et al. (2005).

Following initial coding, I grouped the smaller codes into three themes encompassing combined aspects of subunits. Table 5 provides the number of coded references across focus group and interview responses and further contextualizes each theme by sharing selected references to each theme. Each theme is explained in further detail as specific staff examples are woven into the descriptions below.

Table 5*Theme References*

Theme	Number of coded references	Sample references shared
Communication	32	Culture of feedback extends beyond evaluation (share fairs, pineapple chart, co-teaching, debrief protocol); dialogue and donuts to debrief district communications for staff; being quick to share information before misinformation “snowballs”
Culture of collaboration	30	Time to collaborate built into schedules; opportunities for everyone through rotating building leadership team representatives; “planting the seed” to build individual and collective expertise; scaffolded development opportunities to join upcoming focus committees by invitation or choice (imagineering)
Situational awareness	34	Administration schedules meetings during non-instructional time to support goal to spend 75% of day in classes; operational “front-loading” (duties/schedules); teacher retention

I organized the analysis by research question. Within each section, data are further organized by theme. Some references to the existing literature are included to support the analysis; however, more in-depth literature connections appear in Chapter 5.

Research Question 1

Research Question 1 was: How do elementary teachers perceive collective efficacy in their individual school?

As previously described, the analysis for this question involved analyzing both qualitative and quantitative data. The qualitative narratives from the focus groups provided in-depth, tangible examples of staff perceptions, whereas the quantitative CTES results succinctly showcased overall staff perceptions of CTE, which is indicative of QUAL+quan research. Four sources inform CTE and were reflected upon by the teachers throughout each focus group. Focus group data were combined from both focus groups and examples are drawn from both conversations as they pertain to the sources of efficacy. According to Goddard et al. (2000), the

four sources of CTE are mastery experiences, vicarious experience, social persuasion, and affective states. These sources of efficacy fit within the overarching themes of communication, collaboration, and situational awareness. The theme of communication closely relates to social persuasion, collaboration links to vicarious experiences, and situational awareness is connected to mastery experiences and affective states. Before examining specific examples related to the sources of efficacy, it is crucial to have an understanding of teacher efficacy perceptions within the case site.

Collective Teacher Efficacy Survey Results

Staff members were given an online version of the CTES (Goddard et al., 2000) to ensure safe and secure data collection. I recreated the survey in SurveyMonkey for easier distribution and data collection. To ensure participant privacy, the survey was anonymous. Two additional questions were added to the 21-question survey to determine staff status (certified or classified) and years of service at the elementary school (ranging from 0 to above 20 years of service). On average, staff members spent 4 minutes and 53 seconds completing the survey. The purpose of administering the survey was to determine the overall perceived level of CTE at the case site school. Survey results were combined to find an overall staff CTE scale score in addition to several smaller groups for analysis and comparison. After organizing the data, I scored the survey using the scoring instructions included with the scale (Ventura, 2003). To find the overall staff collective efficacy (CE) rating, the individual scores were added from each respondent to total 4,525. Then, the average score was calculated by dividing 4,525 by the total number of respondents ($4525/48 = 94.2708333$). That number was divided by the number of survey questions ($94.2708333/21 = 4.4890873$). Using the school's average CE score, I was able to compute the difference between the school's average CE score and the mean for the normative

sample ($4.4890873 - 4.1201 = .3689873$). This difference was multiplied by 100 [$100(4.4890873 - 4.1201)$] = 36.8987302. Next, I divided the product by the standard deviation of the normative sample ($36.8987302/.6392 = 57.7264239$). Finally, this value was added to 500, which computes a standardized score (SdS) for collective efficacy ($500 + 57.7264239 = 557.726424$). The school-wide score of 558 is above what is considered average (500), indicating higher than average CTE beliefs (Ventura, 2003). I repeated this calculation process to determine other CE beliefs by subgroups. Collective efficacy levels were above average for the entire staff and each subgroup (certified, classified, 0–5 years, 6–20+ years), indicating there are higher than average CE beliefs in the school. Table 6 includes some of the data points from the calculations to highlight the CE standardized scores by group. The subgroups with the highest standardized scores were certified staff and teachers who had been at the school for 0–5 years. Although not specifically addressed in this research, the breakdown by subgroup provides unique insights and warrants further attention in future research.

Table 6

Collective Teacher Efficacy Survey Results by Subgroup

Group	Number of respondents	Total combined CTE score	Average score (total/respondents)	Standardized CTE score
Total staff	48	4525	94.2708333	557.726424
Certified	37	3530	95.4054054	566.178746
Classified	11	995	90.4545455	529.295887
0–5 years	28	2660	95	563.158561
6–20 years	20	1865	93.25	550.121432

Individual statements were scored on a 6-point Likert scale. The average score for each statement and percentages of agreement for each statement are included in Tables 7 and 8. Several statements drew a high average score among respondents. Statement 5, “if a child doesn’t learn something the first time, teachers will try another way,” and statement 6, “teachers in this school are skilled in various methods of teaching,” both elicited a 5.3125 average. Statement 7 also drew a high average (5.25), indicating “teachers here are well-prepared to teach the subjects they are assigned to teach.” It is clear teachers feel confident in their abilities based on the previous statements and statement 9, “teachers in this school have what it takes to get the children to learn,” as the average score was 5.2291. The highest average score (5.4375) came from statement 21, “teachers in this school truly believe every child can learn.” This statement encapsulates the strong staff belief in both students and their own abilities as teachers to help students succeed. These examples showcase specific perceived areas of strength among staff.

Table 7

Collective Teacher Efficacy Survey Average Score by Statement

CTES statement	Average score
1. Teachers in the school are able to get through to the most difficult students.	4.5625
2. Teachers here are confident they will be able to motivate their students.	4.8333
3. If a child doesn’t want to learn teachers here give up.*	5.0625
4. Teachers here don’t have the skills needed to produce meaningful learning for students.*	5.1458
5. If a child doesn’t learn something the first time, teachers will try another way.	5.3125
6. Teachers in this school are skilled in various methods of teaching.	5.3125
7. Teachers here are well-prepared to teach the subjects they are assigned to teach.	5.25
8. Teachers here fail to reach some students because of poor teaching methods.*	4.4375
9. Teachers in this school have what it takes to get the children to learn.	5.2291

CTES statement	Average score
10. The lack of instructional materials and supplies makes teaching very difficult.*	4.29167
11. Teachers in this school do not have the skills to deal with student disciplinary problems.*	4.2083
12. Teachers in this school think there are some students that no one can reach.*	4.2083
13. The quality of school facilities here really facilitates the teaching and learning process.	5.0833
14. The students here come in with so many advantages they are bound to learn.	2.6875
15. These students come to school ready to learn.	4.0417
16. Drugs and alcohol abuse in the community make learning difficult for students here.*	3.4375
17. The opportunities in this community help ensure that these students will learn.	3.6458
18. Students here just aren't motivated to learn.*	4.4167
19. Learning is more difficult at this school because students are worried about their safety.*	4.2917
20. Teachers here need more training to know how to deal with these students.*	3.375
21. Teachers in this school truly believe every child can learn.	5.4375

*Indicates reverse scored item.

Exploring responses by level of agreement with each statement uncovered other data trends (see Table 8). Staff perceptions were aligned across many statements on the survey, yielding deeper insights into the strong staff perceptions of CTE beliefs. Staff shared strong beliefs on statements scored both typically and those that were reverse scored. Statement 3, which was reverse scored, was, “if a child doesn’t want to learn teachers here give up,” and 36 staff members (about 75% of respondents) either disagreed or strongly disagreed. Statement 5 builds upon statement 3 by stating, “if a child doesn’t learn something the first time, teachers will try another way,” and about 90% of respondents strongly agreed or agreed. When responding to statement 9, nearly 89% of the respondents agreed or strongly agreed that “teachers in this school have what it takes to get the children to learn.” Another indicator of strong perceptions of CTE

among staff came from statement 21, “teachers in this school truly believe every child can learn,” to which 88% of respondents either strongly agreed or agreed.

Table 8

Response Percentages for Collective Teacher Efficacy Survey Results by Statement

Statement	Strongly agree %	Agree %	Somewhat agree %	Somewhat disagree %	Disagree %	Strongly disagree %
1	10.42%	39.58%	45.83%	4.17%	0%	0%
2	14.58%	58.33%	20.83%	6.25%	0%	0%
3*	0%	2.08%	8.33%	14.58%	31.25%	43.75%
4*	0%	2.08%	4.17%	14.58%	35.42%	43.75%
5	45.83%	43.75%	6.25%	4.17%	0%	0%
6	43.75%	41.67%	12.50%	2.08%	0%	0%
7	37.50%	50.00%	12.50%	0%	0%	0%
8*	2.08%	6.25%	16.67%	16.67%	37.50%	20.83%
9	35.42%	54.17%	8.33%	2.08%	0%	0%
10*	2.13%	10.64%	14.89%	21.28%	21.28%	29.79%
11*	2.13%	10.64%	12.77%	19.15%	40.43%	14.89%
12*	0%	14.58%	18.75%	20.83%	22.92%	22.92%
13	33.33%	43.75%	20.83%	2.08%	0%	0%
14	2.08%	8.33%	10.42%	29.17%	37.50%	12.50%
15	4.17%	22.92%	47.92%	22.92%	2.08%	0%
16*	2.13%	12.77%	46.81%	14.89%	17.02%	6.38%
17	4.26%	19.15%	36.17%	27.66%	10.64%	2.13%
18*	0%	2.13%	14.89%	31.91%	31.91%	19.15%
19*	0%	6.25%	20.83%	25.00%	33.33%	14.58%
20*	6.25%	14.58%	43.75%	10.42%	20.83%	4.17%
21	62.50%	25.00%	6.25%	6.25%	0%	0%

*Indicates reverse scored item

The collected survey data shed light into staff perceptions of CTE. Goddard et al. (2004) described perceived collective efficacy as “the judgement of teachers in a school that the faculty as a whole can organize and execute the courses of action to have a positive effect on students” (p. 4). Overall, the CTES data indicate there are higher than average CTE beliefs across the school. As evidenced by the data above, these descriptive data summarized responses from members of the school population who participated in the data collection survey process, rather than inferring from a data sample (Urdan, 2017). Understanding the CTES data provides insight into Research Question 1 and ultimately highlights that staff have higher than average levels of CTE. As Morse and Niehaus (2009) shared of QUAL+quan research, “The core and supplemental components are conducted simultaneously” (p. 28), meaning quantitative and qualitative analysis were completed at the same time. The quantitative analysis was shared first in order to establish strong staff perceptions of CTE as a foundation for the following analysis.

The qualitative data relating to Research Question 1 are grouped below by the three emerging themes for further description, starting with communication.

Communication

Teacher development and involvement are elements of communication shared throughout the focus groups. Marzano et al. (2005) argued, “Good communication is a critical feature of any endeavor in which people work in close proximity for a common purpose” (p. 46). In a school, that common purpose is student success. Teachers articulated a strong culture of feedback, supportive leadership that promotes individual growth and strengths, and a sense of connection as teachers are encouraged to seek out expertise in others, all of which relate to feedback. The included narratives demonstrate the way communication is infused into daily school functioning.

Social persuasion is a source of CTE situated within the theme of communication and contextual examples drawn from the focus groups are provided below.

Social Persuasion

Social persuasion can strengthen staff beliefs in their own capabilities and is developed through PD and feedback, ultimately promoting a cohesive staff (Goddard et al., 2000). Teachers provided numerous examples relating to social persuasion highlighting areas of school culture, teacher involvement, feedback, and communication.

Many teachers reflected on the school culture when reflecting on what motivates teachers to improve their practice; one shared the impact of recognition from the principal:

The principal makes everybody feel included in the Friday Forecast, and it doesn't matter what role you play. If you're a classroom teacher or a coordinator or a paraprofessional, or you work in the kitchen. Those shout outs, key actions are . . . super powerful when it's something that you feel wasn't a big deal, but then they call it out in a big way. I think it's really powerful.

Another teacher added, "I got one [Friday Forecast shout out] and someone came up to me and asked me what I was doing because of my shout out. I felt like a super mega rock star," indicating an increased sense of worth from the recognition.

Teachers also mentioned a specific example of the staff culture by discussing the staff Facebook page as a means of promoting informal staff communication. One teacher introduced the Facebook page by sharing, "I feel like people share like the funniest memes and the most uplifting messages, just through something so simple, and it's just an informal way that we've been connected." Another added, "The Facebook page is a safe place to share frustration, or share something that might not be totally school appropriate, but it's a safe place." One teacher also reflected that the "Facebook page is super positive and I'm not sure that at my former schools, a Facebook page that we would have shared as a staff would have stayed as positive as

the one that we share here,” indicating there is a distinctly positive culture within the school, even in informal settings.

Culture was referenced by multiple teachers. When describing the relationships among staff, one teacher expressed:

The culture in our building is a reason no one wants to leave and anyone that does leave regrets it because the community doesn't compare anywhere else. We have a strong community inside the building and outside of the building, our collaboration is huge. We're very relational and we check in on everyone. Hopefully everyone feels that connection and that valued feeling in our building. And I think that's what keeps a lot of us here.

The previous statement supports that the school culture makes teachers enjoy coming to work and work closely with each other, but it also pushes them to work harder while at work. This focus on improvement and growth was described by one teacher who shared:

Knowing that the school is achieving so well, makes me individually want to become a better teacher. And, I think, pushes me on a daily basis to make sure that I have my lessons ready. I've tried different strategies. I'm trying something new each time that will hopefully help the students more than something that I've done in the past, because I look around and I see everybody else who are just incredible teachers. And I'm like, I want to be like those guys . . . and so it encourages me and pushes me to become a better teacher, because you do constantly see excellent teaching and other people improving their craft. You're going to different professional developments and bringing those back. And I want to go learn something new. So I can include that into my class. And so it's, I think inspiring, but also very challenging because it takes a lot of work to constantly be improving, but it's worth it when you see what's going on in everybody's classrooms. Whereas I could see being in other schools where it's just kind of like, I'm just going to keep chugging along with whatever I'm doing. And I think I felt that in other schools too, but I'm constantly challenged in a good way here.

This example demonstrates the level of commitment from teachers at this school, as they are willing to put in the work for the benefit of students, while simultaneously highlighting a prime example of being motivated by peers through social persuasion. Another teacher commented on the level of commitment, providing a different perspective on the hard-working culture at this school:

You have to have a certain mentality to fit in here . . . not that we're exclusive, but, some people might think it's a little intense and then if they don't have the confidence in themselves or like the belief in the students that we do, that they can achieve at really high levels, then sometimes it's just not the right fit. And they might be better suited in another district because not all people can meet those expectations and they might find them too stressful.

This statement about belief in students connects directly to CTE perceptions shared in the descriptive CTES data above, further underscoring the importance of high expectations for both staff and students at this school. These high expectations propel teachers forward in their growth as educators.

When asked how perceptions of teaching skills have changed since starting at the school, one teacher reflected on opportunities for involvement and leadership:

The school that I worked at prior, there was just one person that was a leader on your team. And it was til death do you part. And it just is what it is, what it's always been. But when you come here, it doesn't matter. There's not a set person, everyone gets a chance, with leadership roles and opportunities. And I feel like the perspective that I've changed, is that you just gain the confidence, but I have something to offer and I'm good enough to help lead something or to help train someone, or whatever. I just feel like there's so many more opportunities for everyone. It's not just, there's one team lead and they're the leader for the school.

This reflection gets at many aspects supporting teacher involvement and building capacity among staff while developing many teacher leaders across the school. Another teacher shared about the participatory leadership model within the school, stating, "I do feel like anytime there's the opportunity for staff to be involved, our administrators provide that opportunity for us." Although school leadership has to act quickly with some decisions or district initiatives, it was shared that "as much as possible, I do feel like we're involved in the decisions, and even when it comes to setting our UIP or unified improvement plan teachers are involved in that process as well." Teachers feel they have the opportunity to be a part of conversations and decision making at this school as many mentioned the building leadership team (BLT) as one of many ways to be involved. As the teacher above referred to a shared leadership model, BLT representatives

alternate every 2 years to provide more teachers the opportunity to be a part of school decision-making processes. In order to keep teachers up to date on district initiatives, school administration started a “dialogue and donuts” to help staff better understand decisions that may affect them. Although one staff member acknowledged this did not provide the venue to give input, they said, “You’re still always able to ask questions about like, well, where did that come from? or how did we get here? or why is this?” which ultimately provides “perspective on where these decisions come from and then how they’re pushed out.”

Weick and Sutcliffe (2015) cautioned that “systems with slow feedback endanger resilience” (p. 110), arguing for quick and accurate feedback to determine whether attempted changes hinder growth or need to be further altered. Feedback was evidenced in many aspects of the research data, including the previously referenced. In a district-wide survey used to gauge staff perceptions, feedback and recognition encompassed many sub questions on the staff survey, and the staff at this school rated a 77% feedback compared to a 64% district-wide feedback and recognition rating. Feedback and recognition includes satisfaction with the recognition for doing a good job (72%) perception of valued work (76%), district administrators recognizing teachers/school staff for a job well done (64%), school administrators giving useful feedback on teaching (89%), and school administrators recognizing teachers/staff (85%). NVivo analysis of the focus group data showed feedback was mentioned in 10%–14% of the conversations in the focus groups. Teacher development was mentioned in 18%–25% of the focus group conversations and was closely linked to feedback as many teachers stated PD occurs through observations and feedback from peers, administration, and coaches alike. Observations result in a debrief conversation led by teachers, and both teachers and administration referenced how administration supports teachers who want to try new strategies and improve based on

purposeful observation debrief conversations. This supports what Weick and Sutcliffe (2015) asked as a guiding question when considering commitment to resilience in an organization: Are we concerned with building competence in our teachers? Teacher reflections on feedback from focus groups further underscored the culture of feedback and growth as educators within the school.

Teachers had a lot to share when it came to the feedback they get, indicating they regularly get many types of feedback at their school. When teachers were asked how the school experiences success, feedback was one aspect that came up. For educators, feedback and evaluation often go hand in hand, though here it is clear the two are viewed separately and teachers genuinely want to grow based on formal or informal feedback. This was clear when a teacher shared the following about multiple forms of feedback:

I like that openness to being able to do things with a teammate or a partner . . . also having the ability and the openness from the administrators to say “we’re going to try this new strategy, we’d really like some feedback, but in a non evaluative way, I don’t want to be evaluated on it yet, but can you give me some feedback,” but then also you can say we planned this kick, you know what PD, can that be one of our spot observations. Like we’d really like to be evaluated on that too. So I think that just that flexibility and openness on the administrator’s part too is nice.

As much as educators may request and solicit feedback, another form of feedback is through “spot observations,” which vary in number depending on the probationary status of the teacher. These are formally linked to evaluation. After the observation, teachers meet with the administrator who observed them and use a teacher-led debrief protocol to reflect on aspects of the lesson. A teacher described the impact of the spot observation debrief process by saying, “We’re asked to come and sit with the administrator to talk about feedback that we’re given during our spots. And I think those feel very conversational and not evaluative.” They added, “It’s like you’re brainstorming with admin next steps after you’ve been observed. And so I think it’s the approach that is helpful to like just the conversational expectation of talking about it after

it's done.” They also shared appreciation for the conversation because “it’s not like you just get a report or an email about how you did, and then there’s nothing after that.” This example showcases the value teachers place on the observation debrief process, which invites teachers into a reflective conversation to improve their practice and a continued focus on growth, rather than checking boxes off a list of evaluation protocols. Another teacher compared their experiences at a previous school to the current school, sharing, “My first year teaching was not in this district, and I got observed once at the very end of the year, and that was not helpful—I really didn’t feel like I learned anything.” Contrasted to initial observation experiences, they shared that now “I wouldn’t even notice that people were coming into my classroom and observing because it was just a regular thing. I mean, I would love to get my feedback, but I wouldn’t be nervous.” This showcased the normalcy of observations and walkthroughs at this school during a typical school year.

Multiple teacher examples were provided that support the use of meaningful observation experiences that help teachers reflect and grow as educators. One teacher shared the following reflection on an observation experience:

One of my favorite instructional strategies is protocol for math and that came in a spot observation—they said hey I think you and your kids are at a place to try this, come find me. So we went through it, we did a whole PD together and he trained me on how to utilize the strategy, and so, they do a great job of offering those suggestions just through informal or formal observation. And so sometimes it will feel like they know they will roll it out to everybody, so it’s almost like some of it even happens just in those little moments that then just spread like wildfire across the school.

The example above demonstrates the thoughtful and strategic nature of the feedback given to teachers. Another teacher shared a similar observation experience that turned into a routine teaching practice after feedback and coaching. They reflected on the eagerness of administration to provide support:

I had no idea what I was doing during my whole group literacy. And during my spot observation, I thought it was like the worst lesson of my entire life. They literally coached me through what to do next time to improve it. And then was like, do you have a routine for this? Because I have a routine for this, do you want to see the routine for that? And they literally came into my classroom, fully prepared, ready to go and did a whole hour lesson for me and like rolled out this routine now that I've done for the past 3 years. So I know our admin is eager to help.

Another teacher stated their desire to improve stems from feedback through observations and compared their experience to that of a colleague in another school. This example not only contrasts a difference in quantity of observations but also the quality of actionable feedback.

Quality feedback is important, and without it teachers may struggle to improve.

My friend is also a new teacher, so we're similar career wise and they're at a school where admin are so hands off. And so they talked about "Oh, I had a spot today." I'm like, "Cool. I had my seventh one today and let's compare." Theirs was just like, yeah, he just said, "I saw you do this. I saw you do this. Okay. Great job. You're an effective teacher." . . . And for me, I feel like I have so many other steps I need to take to become an effective teacher on these standards. But for her it was a success, I wouldn't call that a success for me because not even because of the standards I want to hit . . . I feel like because her admin are so hands off like a success for her is like, everyone did this thing, which for me is like, that should have happened 2 weeks ago. And so I guess, I think it comes from their admin support, like for her to get success, it's all through her coworkers kind of similar to here, but no admin support there. So seeking it out other ways and even like talking to me, like brainstorming about what should work. So that is interesting, is she happy like this? No, It stresses her out because she doesn't get the feedback constantly. Well, and she's just like, I don't know how to get better.

One teacher spoke about collaboration and teamwork, stating teachers may choose to be formally observed and evaluated together. The teacher shared:

It's definitely a team approach, and that's highlighted in the fact that we can get observed together . . . that lends itself to that team approach and you're working together for the good of both of you to do your best.

This certainly speaks to a high level of trust and collegiality among peers to have confidence in each other for an evaluation. Communication supports the culture of collaboration in the case site.

Culture of Collaboration

Marzano et al. (2005) stated culture, or “a sense of community and cooperation among staff” (p. 48), is an important aspect of developing a shared vision of the future of a school. School culture was referenced throughout the focus groups and closely linked to a strong desire to collaborate among staff members. This culture of collaboration brings together two aspects of a school dynamic (culture and collaboration) and is further explained through the following examples that link back to vicarious experience as a source of CTE.

Vicarious Experience

Vicarious experience includes hearing about the successes of others and engaging in observation to learn from those successes (Goddard et al., 2000). Throughout the focus groups, teachers provided examples to support vicarious experience. There are formal and informal structures in place to support the development of teachers through observation. Multiple teachers shared the benefit of observing in other classrooms. One shared, “I think for me the opportunities we have to go observe other teachers within our own building, or even sometimes in the district, and see some of the ways they’re doing things often motivates me to learn more.” Another shared the principal provided support to observe effective teachers across the district to be able to bring practices back to the school and recalled, “I asked if I could observe some other really effective teachers in the district. So she [the principal] had set up observations for me to go observe a few other teachers in the district.” When reflecting on the experience, the teacher shared:

There were a couple in particular, that their instructional strategies really meshed well with mine, and they were really high performing. So I was able to take a lot from observing them and build on it in my own classroom. I also just think that our administrators have done a really good job of identifying; helping us identify strengths that we have in the classroom ourselves and then giving us opportunities to share those

with other people, which was really motivating me when someone recognizes something that I do well and then gives me the opportunity to share it.

Teachers said they benefit from observing and learning from others and sharing their own expertise, underscoring the importance of observation in building vicarious experiences in support of CTE. Classroom observations are encouraged through a “pineapple chart” where teachers can post an invitation for others to come observe a certain skill or strategy in the classroom. This chart is a tool to encourage staff observation among peers. One teacher described it like this:

We have share fairs and we’ve had pineapple charts where, basically we’re opening up our classroom for people to come in and see, and just share everything and not reinvent the wheel. And I feel like I felt the most valued when someone had come to me and said, “I hear you’re really good at ‘this,’ and I want to come and watch it.” And just for them to be specific, to have heard them doing something that’s working or that good, just makes you feel really valued, and I feel like that happens a lot . . . it doesn’t matter if you’re a first year teacher or a 16th year teacher, there’s something that you’re valued for, that people seek you out to learn from you, which is really cool.

When responding to how teachers collaborate within the school and how it affects their teaching, one teacher brought up the co-teaching model in place at the school, highlighting the benefit for both teachers involved. They shared:

I think whenever I am able to collaborate, I think specifically with co-teaching as well . . . I get to build on my strengths, but I also get to learn from other people’s strengths, and like the things that she’s really good at, we can kind of do the lesson around that and be like, okay, so why don’t you lead this part? Cause you, are you like very strong at teaching whatever it is. Whereas then we can kind of bounce back and forth and be like, Oh, well I know I can do this really well. So I’ll take over this part of the lesson, and just being able to balance our strengths, or also our weaknesses.

Co-teaching is commonplace in this school and serves as another example of teachers being able to see the strengths of others. Leadership encourages teachers to collaborate by sharing strengths of teachers with the staff and providing coverage when possible. One teacher reflected on collaboration by sharing:

There's also a value for your own unique approach to a lesson. I think that is really important too, but when we go to admin and if there is another colleague who's good at something [administration] is really good at being like, "Hey, you should go see this teacher's number talks because she's really good at that." And it kind of makes us, if we want to get better at something, collaborate with the teacher, we might not have talked to otherwise.

Collaboration and observation are both formally supported through structures such as the pineapple chart and informally encouraged through suggestion when speaking to staff strengths to observe, further driving teachers to strive for improvement in their practice. The school staff articulated strong cohesion among staff and a positive school culture throughout focus group conversations.

Situational Awareness

Those who lead with anticipatory leadership are equipped to handle potential threats and opportunities by leveraging an awareness of details related to school functioning (Marzano et al., 2005). Principals who are perceptive of staff morale and open to communication regarding decision making can influence how staff interprets challenges and positively affect overall school functioning. Teachers shared multiple examples that related to the situational awareness of school leadership.

Affective States

Another source of CTE is affective state, which is related to how those within a school organization interpret challenges. Goddard et al. (2000) stated "efficacious organizations can tolerate pressure and crises and continue to function without severe negative consequences; in fact, they learn how to adapt and to cope with disruptive forces" (p. 484). A typical school year has many disruptive forces, including the COVID-19 health crisis that has uprooted many structures and routines in schools since the Spring of 2020. Examples supporting affective states include COVID-19, but teachers also shared multiple challenges the school previously worked

through, including the transition to becoming an authorized International Baccalaureate School and school renovations. These examples showcase the ability to navigate potential crises and emerge as a cohesive school unit. Perhaps previous challenges have influenced the way leaders and teachers navigated the current school context with COVID-19.

The staff constantly grapple with and work through problems of practice in vertical teams, bringing multiple perspectives and solutions. One staff member reflected on the experience and shared sadness because it would not happen with COVID-19 restrictions in place:

We can't do it this year because of health restrictions, but in the past we always have these vertical days where a team would be released at this certain time and they'd have subs that would come in and cover their classrooms. And we would look at our problem of practice or something specific and go and observe in another grade level. While, like, the purpose was to observe mathematical practices in classrooms, teachers walked away with so many more ideas . . . just by pure observation and looking in a classroom, looking at the walls, looking at the way a teacher organizes something. So I think that piece is also really positive too. I'm kind of sad that we won't have those walks through days this year.

Aside from problem solving in teams, staff also reflected on individual support through difficult times. When asked how the staff handles tough situations, three examples showcased the support teachers felt when working through areas of difficulty. One teacher shared how a schedule change as a result of COVID-19 abruptly changed their teaching demands, and within a matter of minutes other teachers and coaches came to help develop binders and resources the teacher would need for the new role. The teacher shared, "When something like comes in quick, whether it's hard, whether it's easy, whether it's just unexpected, or overwhelming, I appreciate all the love, and they're all like, you're going to be fine." A supportive community helps teachers feel equipped to handle tough situations that may not have been expected. This was also evidenced when a teacher shared, "We rally, and back to supporting each other if we know one of our teammates is struggling or we know a teacher is struggling." This sense of support is not just among teachers, as teachers feel administration supports staff working through issues as one

teacher shared, “They do a really good job, not forcing you, but highly encouraging you to go help out a staff that you didn’t know was needing your help,” which relates back to the supportive staff culture the teachers explained.

When reflecting on the changes the school encountered prior to COVID-19, including the International Baccalaureate authorization and school renovations, one teacher shared, “every year there’s been a pretty significant change,” but further reflected, “because of that sense of community and sense of wanting to excel in our positions, everybody just rolls up their sleeves, supporting each other, being like let’s get to work, let’s get started, it’s not going to change itself.” This statement sounds similar to the assertion from Tschannen-Moran and Barr (2004) that “teachers in schools with high collective efficacy do not accept low student achievement as an inevitable by-product of low socioeconomic status, lack of ability or family background, they roll up their sleeves and get the job done” (p. 192). This speaks to many aspects of the staff culture, first in supporting each other but more importantly in jumping in and getting to work despite challenges or setbacks.

When considering the impact of COVID-19, staff reflected openly on the challenges, but never stopped at the fact that it is hard; instead they shared what they are doing despite the setback everyone is facing no matter their profession. When COVID-19 caused teachers to be sent home to work and teach remotely, the shift happened very quickly. One teacher mentioned “COVID groups,” describing them as:

You were paired with like three or four people and that you were just supposed to check in with . . . and that helped, it was not necessarily your team who you are probably already meeting with online, but it was other people in the building that you were kind of just touching base with and making sure that whether it was school-related or personal, they were doing okay.

This example shows yet another aspect of the community focus many teachers referenced throughout the focus groups and the intentionality of this structure put in place by school

leadership. As they were working through a difficult time, teachers were able to reflect on their own teaching as well. One teacher noted:

We've had that high expectation and we have quality teachers here. With COVID, we're not willing to sacrifice quality. And I've heard in other schools, they can get a quick program or just something to satisfy the e-learners for now.

They went on to share opposition to that mentality, stating, "but we're not comfortable with that, so we come up with stuff that comes from us, knowing that the kids deserve everything that we can give and a lot of the stresses come from that." This reflection not only highlights staff dedication, it illuminates the high expectations teachers place on themselves, even amid a global pandemic. Multiple teachers expressed frustration toward teaching during COVID-19, describing it as feeling "super ineffective" and stated "we know the expectations we have for ourselves and our students, and it's super frustrating to me that I can't meet them," adding "not being able to do something really well is really stressful to a lot of people," indicating a strong level of dedication and desire to push through and keep working hard despite challenges. Working to overcome setbacks and persevere despite challenges is a hallmark of CTE.

One teacher likened the experience to another profession, indicating the challenge of meeting all needs at once in addition to balancing technology troubles as well. They shared the following reflection: "I feel like an air traffic controller, half the time we have five devices going to manage kids at home and kids in the classroom. And, I feel like a first year teacher, and I don't feel effective." In trying to further explain the feeling they added, "I know it's not because I'm not working as hard as I normally do. I'm working harder than I normally do, but I feel ineffective." Despite any feelings of ineffectiveness, many teachers are working harder than ever during the pandemic to support students who are accessing education in a variety of ways. In reflecting on the challenges, some have seen the positive changes that may come from a challenging situation to influence the education system as a whole. One teacher reflected:

I do think one thing that's changed is my perspective of students . . . over the spring, I remember hearing from a lot of teachers that some of the kids that were in class and never completing work and never participating were the few kids that were online and actually doing their work and actually producing pretty good work. And whether that was the flexibility in their schedule to, you know, wake up at 10 o'clock and do it at 4 and then play games in between—who knows what that really was. But I feel like I have heard comments like that from different teachers. And I, I do think it's just kind of interesting to think about how we do still have, so kids at home who were e-learning and wondering if maybe they did stay home because it is more of a successful environment for them...it has made me think about kind of like those restrictions that we've always had on time, and I definitely think that this is going to open up like some demand or deep learning programs that are better than some of the ones that were all there before.

Mastery Experiences

Goddard et al. (2000) shared that teachers and schools encounter failures and successes, and mastery experiences require a “resilient sense of collective efficacy” by “overcoming difficulties through persistent effort” (p. 484). Through both focus groups, teachers shared various examples that support mastery experiences during their tenure at this school. Teachers shared the opportunities to try new strategies in the classroom, PD opportunities, and opportunities for professional growth. Additionally, teachers shared about planning and teaching, promoting inquiry and critical thinking for students, student data success, and procedures in place to support all students.

One staff member discussed how celebrations of success are often shared with the whole staff, not just one person. They shared a current example to highlight this collective, school-wide approach to celebration:

A kindergarten parent emailed about how the beginning of the school year was rolling out and how impressed they were . . . and that email got forwarded to the rest of the staff just as a positive encouragement. Keep it up.

When reflecting on a time they were motivated to improve teaching practice, another teacher shared:

I had read, I don't know if it was an online magazine or a blog or something about implementing number talks and math workstations. So I learned about it on my own. And

then I approached our administrators, And I said, “you know, I want to work through these things, I want to kind of learn and figure them out.” They were totally supportive of that. And then actually, they helped me in bringing in a math instructional coach, and she came in and like modeled number talks for me and helped me kind of work through setting up math workstations and that kind of thing.

This example highlights the ability of administration to support teacher-led initiatives to grow as professionals and links to vicarious experience as well. Teacher growth was echoed by another focus group participant when they shared that administration supports teachers to grow into new positions within the school: “They work with people to like move around where your interests are, which I think is really helpful for me to keep growing as an educator.” A novice teacher shared her excitement when she was observed as a student teacher, stating, “They knew that I was teaching solo, so the fact that they knew that and they still wanted to come in and watch me, made me feel like I was like kicking butt.” Student teachers were not the only ones to feel supported to grow, as another more veteran teacher shared this reflection on her growth as an educator:

When I started here, I had only been teaching for a few years and at the school that I worked at before this one, I really didn’t like find my place, I felt really inadequate, I guess, as a teacher, because I was in a role that wasn’t necessarily set up for me to be successful in. But I took a lot of that personally because I didn’t feel like I made the difference that I wanted to make or was quite the teacher that I wanted to be. Then I think that being here, I was able to really like find my strengths and build on them and grow a lot over the 7 years I’ve been working here . . . I just grew substantially every year teaching and was able to see that in like my student results. And, I don’t know that that would have happened if I was anywhere else.

Another teacher shared their desire to switch content areas and the support received from administration to make the transition:

I think they do a really good job of trying to see what benefits the whole school, they also look at the individual too, like what’s a good fit for them, and how can that person support our whole school too?

This shows the ability of leadership to support individual teachers while keeping a more systematic, school-wide view in mind.

When reflecting on the promotion of critical thinking among students, teachers shared examples from planning and what they would expect to see in the classroom. One teacher explained it is expected to see the kids engaged in discussion in class, stating, “In the past we had a lot of trainings on student conversation and engagement” and “a big piece too, is giving the students the chance to be able to talk through their thoughts, and talk through their own comprehension of the topics that are being introduced.” This example included both high expectations and student engagement. This high expectation of students is further described here:

I promoted critical thinking, by engaging my students in real-world explorations of authentic topics that were, just kind of naturally engaging for them and really relevant and higher level . . . oftentimes I think that teachers will make the mistake of pulling a topic that’s too easy for kids. And then it ends up not being interesting or engaging to them, even the lower readers . . . if they’re always reading texts that are at a really low level, those usually aren’t the engaging texts or topics for them. And so, just planning material, that forces, all the students to push their boundaries was one way that I was able to get them to critically think. And then just really thinking about the questions that I was asking and not holding back with the way that I phrased questions. So not dumb them down, but instead like use that higher-level vocabulary and then like give them scaffolds to access it, through discussions and videos and like purposefully planned steps in my lessons.

Reflecting on examples of school success, teachers shared the excitement when the school shifted from near turnaround to student achievement of which they felt proud. Data have been a key factor supporting the school’s improvement and success. This was captured when one teacher shared the following about school success: “So yeah, we were close to being on turnaround, and then we started seeing all the growth that we saw in all of our learners, that’s wild to think.” Another teacher shared personal excitement when reflecting on student data meetings, stating, “I always looked forward to them because I love seeing how well my students were performing and just how much growth they were making . . . not to be selfish, but I found it really rewarding.” The data are not just celebrated, they are used in the decision-making and planning processes. One teacher explained:

It's kind of ingrained in us that we're fairly data driven as a school . . . we use our iReady data or whatever sort of assessment data we're using to make groupings of kids to put interventions in place, to really make sure we're measuring the kids' growth ability to not just like assuming everything's okay.

It is an ongoing process because once groups are made, a teacher shared, "We're looking for those targeted interventions for kids, because we want all of them to grow, not just our high performers." This also highlights staff awareness of vulnerability, which links back to the HRO principle of preoccupation with failure (Weick & Sutcliffe, 2015). Teacher reflections underscored the importance of mastery experiences both personally and as an entire staff. Success of others is also important in the development of CTE.

Research Question 2

Research Question 2 was: How do elementary principals perceive collective efficacy in their individual school?

Interviewing the principal and two assistant principals provided both unique perspectives and repetition of certain notable aspects in the process of working to understand Research Question 2. Similar to the teacher focus groups, the four sources of CTE (i.e., social persuasion, vicarious experience, affective states, and mastery experience; Goddard et al., 2000) were compared to school administration responses to identify patterns and themes. Narratives were organized by emerging themes, including communication, culture of collaboration, and situational awareness.

Communication

Effective communication skills are essential in school leadership much like in any leadership position. Communication is "the extent to which the school leader establishes strong lines of communication between and with teachers and students" (Marzano et al., 2005, p. 46). The examples previously provided by staff highlighted communication as a strength of the case

site, yet arguably communication is strategically supported and strengthened by administration. Much like the collective efficacy source of social persuasion, communication can support staff cohesion, development, and ability to give actionable feedback. Social persuasion is closely connected to communication and several examples are provided to help make the connection.

Social Persuasion

It is clear from the responses of leaders and teachers alike that staff satisfaction seems to be something identified by respondents across the board. One example of staff satisfaction was shared as “how much people enjoy working here and they say it all the time to one another; especially when we hire new individuals, you get quickly absorbed into this mentality of this is a great place to be.” Satisfaction goes beyond the positive attitudes and is further evidenced through this example when primary teachers could not get their students to log into their computers independently and there were emails among the staff:

It was a disaster . . . and magically middle school teachers just showed up at the door, helping students log in . . . that type of thing just happens every day without anyone ever telling them, they just kind of do it themselves.

This example demonstrates strong staff cohesion by offering to help when possible and without being asked.

Much like teachers value feedback from observations and interactions with peers, principals also desire a network with which to celebrate successes and also work through struggles. One principal reflected on the importance of having other principals to “talk to regularly and talk to honestly.” When looking for a thought partner, one principal expressed, “I think sometimes it’s nice if your sounding partner does come from a very different philosophical place, because there have been some good takeaways that we’ve been able to implement here,” reiterating the point of being a learning organization that recognizes vulnerability and can improve in areas of challenge with the support of others.

Proactive and forward thinking was another aspect brought up in the leaders' interviews relating back to staff cohesion and feedback. A few examples include the implementation of duties at the start of the year in which administration frontloads and spends the first 2 weeks establishing expectations and helping with duty so the principals are "able to check those boxes off early and then not have to worry about it again. The way we address those things is to just be really proactive." This front-loading "helps it [lunchroom functioning] run as independently as it can for the rest of the year." The proactive stance extends beyond procedures, as schedules are designed in advance to get teacher feedback and buy-in: "If someone notices an issue with the duty schedule, it's better to know that months in advance instead of like at the moment it's happening." Proactive thinking also promotes buy-in from staff when it comes to initiatives or changes being implemented in the future.

When there is something that will be a school-wide focus, an exploratory committee or interest group is created for people to join by invitation or an interest to participate. One leader shared the following example of an exploratory committee from a couple of years ago:

So with restorative practices, we met monthly for a year. We did a book study, just kind of building our knowledge in that core group of people. And then towards the end of that year, that group led some training during a staff meeting, we spent like 30 minutes as a school coming up with what are our positive beliefs about kids, then that was going to guide our restorative practices training for the next year or two . . . so just a very collaborative way where, people are knowledgeable about the change that might be coming because they know there's a committee about it and they could go talk to someone who's on that committee or they could join the committee.

Feedback is a way of promoting instructional knowledge, spreading ideas, and motivating teachers to improve their craft. Administration had lots of ideas related to sharing instructional knowledge among staff, including:

Spot observations—so that means fewer than 3 years in a row of effective or higher evaluations would receive 16 spots in a year and two formal observations . . . and that's the minimum, some receive more than that.

The district and school in particular proudly boast a “culture of feedback,” and one leader shared, “We don’t believe anyone ever masters teaching, there’s always more that you can learn and that we’re not doing our job if we’re not helping push and grow your skillset as a teacher.” That focus on growth is present in the debrief protocol shared here:

We give very detailed narrative feedback and we use a praise, polish, question format. So we’re always praising multiple things. We’re going to give one or two polish statements of ideas or strategies, things to try and then a question or two. And then that way, when we come back a week later, we can get follow-up feedback on that. Or if we’re seeing a different content area, cause we might see math one week and writing the other, when we debrief again, the first part of the protocol is how has your previous action step going? So even if we saw reading, they can talk about, well, last time, you know, you saw math and we talked about rally coach and here’s, what’s happened over the last week using rally coach. Now this observation was about reading, but reading, I’m actually giving similar things cause I’m trying to do less teacher talk and more whatever. So then it’s connecting that feedback over time, so it really is this cycle that plays out.

Teachers may come into the school with different evaluation experiences because it was shared that:

New staff members were just kind of shocked, and the expectation was maybe kind of at a new level for some people. Comments like “I’m used to scoring proficient on everything” or “I’ve always gotten feedback that I’m at the highest level possible.”

Yet, even with different notions of evaluations, over time teachers adjust to the model of observation and feedback as one administrator shared:

We have a really consistent and frequent observation feedback model, teachers have really adapted, they took great feedback or they took feedback greatly and like implemented it, they themselves have articulated the growth that they’ve undergone, we are able to like really help teachers to become more effective.

The feedback process speaks for itself with this example:

Teachers requesting “spots” is proof they find the process valuable and they want more feedback, they’re not just doing it because it’s required as part of their evaluation . . . they’ve internalized it as something that’s meaningful and helping push them.

Feedback also comes from peers in a variety of ways, as there are purposefully structured systems in place where teachers are able to see one another on a regular basis, take away

strategies, and bring them back to their own classrooms. These systems include the pineapple chart, share fairs, and even classroom coverage to observe another teacher. This concept of “planting a seed” was described in various ways, but this reflection certainly captures the spirit of this leadership approach: “Let’s say you give someone feedback on something and they take the ball, run with it, and become really good at it.” Once that teacher becomes skilled in the new concept, “It’s about getting other people interested in what that teacher’s doing and replicating it. That teacher becomes the expert and they’re the one training others.” This builds teacher capacity and expertise and allows teachers to guide their own growth. Administration reflected, “It’s more powerful when it’s teacher-driven, people get interested in what this teacher’s doing that’s new and cool. Then five people are doing it. And then 10 people.” Sharing how quickly ideas spread without formally providing staff PD, one principal stated, “Suddenly it’s just part of the fabric of the school and everybody is doing it, but the lineage of where that idea came from isn’t necessarily clear to people; it makes for a highly collaborative atmosphere.” Another reflection was, “We’re mindful of holding people to a high bar, but then also mindful of connecting people with each other when it comes to effective practices that people might like to try out.”

Listening to these descriptions of feedback and experiences shared by the principals, it might not come as a surprise that teachers want to stay at the school. When asked about the satisfaction of teachers at their school, a common response among teachers and administration was, “it feels like a family, there’s extremely positive culture . . . people love coming to work every day,” indicating the school culture is strong. Another example further highlighting positive staff morale is “the things I see people do that they don’t have to do, like people going above and beyond in a way that they truly are doing it out of the goodness of their hearts.” This is supported

with the statement of, “people just doing nice things for each other, whether it’s in school or outside of school, or dog sitting for each other, it’s clear that people feel invested beyond the minimum of what would be required of a job.” Leadership interviews highlighted another indicator of staff morale—commitment to the job, whether answering emails at all hours, helping each other out, or asking to be involved in school processes. This was a description about teacher retention that captured what multiple people shared in relation to teachers who have left the school: “So none of them were people who were leaving, there were people who were going to something, if that makes sense, like it was a pull, not a push,” meaning when given a choice most teachers stay at the school if possible. Another notable aspect relating to school culture and staff retention emerged when one administrator shared, “Compared to a lot of schools I’ve been in and I’ve always worked in a very similar demographic, the consistency and stability of the staff is like another thing that’s special and something unique here.”

Culture of Collaboration

School leadership facilitates a culture of collaboration across the school with strategic structures to support staff in the process of teaching and learning from each other. Through repetition of peer observations and hearing accounts of what colleagues across the school are doing well, it is clear leaders are supporting CTE by building vicarious experiences to support teacher development. Much like the principals support this for teacher development, they also need to be exposed to vicarious experience to grow their own skills as leaders. The upcoming examples highlight principal reflections related to vicarious experiences.

Vicarious Experience

School leadership reflected on other leaders from whom they have learned and shared some of the most impactful lessons throughout their careers. One principal reflected:

I have had the opportunity to work for a lot of really great leaders in this district. And I wouldn't say that I am like any of them. I try to pull from them what worked and what I admired in them. So I feel like each one has really impacted that. From one that was a lot around curriculum alignment and making sure you have that one vision that everybody stays focused on, but from another it's that you can have that one vision, but it's still that shared vision where everybody has a piece in it and can bring that to the table. And then from another principal, she just had great relationships with kids.

Another principal took the opportunity to observe different principals and question why they did certain things in order to create a leadership toolbox. They shared, "What I've seen as most successful is not a top-down approach, you have to give teachers some autonomy to do what works for them, as long as it's getting the results that you want for their students." Another lesson learned from successful colleagues is the act of setting and maintaining a focus on clear goals and further filtering information before passing it along to teachers by speaking to the importance of being able to say, "That's not what we're working on right now, that's not what we need right now." Setting "actionable goals for each year" and sticking to them is also important so "if other influences start to come in that don't align with their focus, they can politely push those aside, knowing there's a time and a place, but first they have to build basic systems then layer on other things." This leader went on to share observations about principals pushing out too many items to teachers, stating:

I think the pitfall that I watch a lot of people fall into . . . a lot of new building leaders, they're just pushing everything to teachers and doing too much too quickly, and none of it gets done well.

They shared the downside of pushing too much out is that:

In a normal year if that's not something you know how to do as far as protect your teachers from some outside influences that they don't even need to worry about, then this year is making that even more difficult.

Situational Awareness

There is no denying that a large part of school leadership is handling situations that arise on a daily basis and that affect stakeholders in various ways. This is what Marzano et al. (2005)

described as a leader's "awareness of the details and under-currents regarding the functioning of the school and their use of information to address current and potential problems" (p. 60). How leaders respond to disruption relates to how aware leaders are in the first place. Having situational awareness sets up leaders for success when interpreting potential challenges.

Affective States

Affective states is the fourth source of efficacy and in essence uncovers how challenges are interpreted within an organization and more importantly how those in the organization are able to tolerate pressures, adapt, and cope with disruptions as they arise (Goddard et al., 2000). This school, like many, has had a fair deal of disruptions and challenges since COVID-19 in terms of school functioning. However, leaders and staff at this school have also navigated myriad other challenges and disruptions prior to the health crisis. Administration has also navigated challenges with individual teachers, whether they are dealing with personal matters or engaging in teaching related coaching conversations.

A clear example of coaching for instructional improvement is illustrated below. This references a new teacher who was not teaching grade-level appropriate material, as the material being taught was described as grade levels below the rigor expected at that level. This text captures the process of what one administrator described as a "sense making conversation" working through and coaching this teacher:

Right now it's that really supportive approach of, let's get them someone to co-teach with and co-plan with, let's give some examples of this vertical articulation of what kids are doing with studying and characters in first grade, second grade . . . you can build off this versus telling her she's doing it wrong. So bringing a lot of support, but then we're going to transition them to using a more scripted program just because they are selecting texts that are way too easy for kids, that is never going to get our kids where they need to be . . . But, staying in that very supportive place for a while until there is some transition time, and if we're still kind of seeing that that's when a whole new layer of support and remediation and things are going to kick in . . . So let's give it some time and give her the benefit of the doubt. And right now just provide lots of support.

This example led to further reflection on handling tough situations such as teacher non-renewal:

The situations that I reflect on the most . . . if we don't renew a teacher's contract, is there something we could've done differently to try to help them be more successful? . . . with struggling teachers, it's a hard process to navigate.

This shows teacher development certainly takes time and effort and allows opportunities for leadership reflection as well.

Leadership is also quite responsive to individual teacher and team needs as they navigate issues that arise. One reflection reflected the importance of perspective when approaching situations that arise by offering this message:

I'd say the biggest thing we all need to be conscious of from an admin perspective, teacher perspective, parent perspective is viewing the other parties is having the students' best interests at mind because we don't always see the best intentions in others [and ultimately] reminding each other, we all have the same goal in mind.

This leads to a metaphor provided on how stakeholders come together to support students' learning:

We all have a shared purpose, which is to cultivate as meaningful and purposeful of a life for students as possible, especially in regards to learning . . . the analogy is that we're growing students' minds. Some of us are watering the students and others of us are providing sunlight and without any one of those things that a student isn't going to be successful. If attendance, let's say that's the sunlight, if a student isn't coming to school, they're not getting the sunlight of learning, and so they're going to struggle.

Once again the idea of working together was clearly articulated when they concluded this metaphor with, "So I think it's just working together to figure out the obstacles together, not to blame each other, but to see each of us is invested and interested in helping the students."

Supporting students is a goal of leadership, and so is supporting staff through any interpersonal challenges they face.

In response to the question about how staff handles difficult situations, one administrator shared, "Each team kind of has its own personality, I'd like to think that we, as a leadership team, try to respond and absorb or do whatever with what each individual team needs."

Examples of multiple team styles were also shared, indicating some teams rely more on “a lot of sensemaking and conversation, and they need to be able to come in and they need to be able to like let their tears out and express their frustration and we’ll work through it with them,” compared to other teams that are more “go with the flow, they can hear it and they can kind of just like sense make on their own. Or they’re just adaptable, some teams are just so stable and change can be a little more upsetting.” Reflecting on both styles leads to the conclusion of, “I think that we try to make it so that no matter how people react, it’s okay to react that way,” which indicated support of all staff and personalities.

Thinking about procedures to help staff work through difficult situations, this example highlights the problem of practice approach that the school grapples with each year. The example provided relates to the school transition to become an International Baccalaureate School and the focus on being a risk taker who can work through problems positively through productive struggle. A professor came to work with the staff about “robust failure,” guiding the staff through hands-on experiments “where there was no way to be successful—you were going to fail this experiment, you didn’t have all the materials and information you needed, and working them through that process of how to struggle productively versus just struggle.” This work related directly to staff work and turned into a problem of practice. It was also noted that “we do instructional rounds here, and we write a problem of practice every year that guides teacher goals. We do walkthroughs where staff get to observe other grade levels focused on our problem and practice.” This concept of productive struggle became a school-wide focus for 2 years, digging into “that balance between spoon feeding kids too much and letting them struggle too long with no support.” An exciting part of the process was “the more that we did that with kids, the more that then helped them apply it themselves in terms of taking risks . . . and how do you

respond when something doesn't go your way?" One of the teachers took that to heart and self-reflected through the challenge of teaching remotely. One day they were in tears about the difficulty and challenges and then they opted to shift their mindset and be a problem solver. The administrator shared:

Watching them Tuesday, Wednesday was a whole different person than who we saw on Monday. . . . That kind of thing just spreads amongst staff when you see them do that, you're thinking, okay, I can do this too. I can figure this out and solve my problem situation. It's contagious and modeling what we want.

This is another example showing staff internalize the feedback and strategies presented and leverage that feedback to become better educators.

Reflecting on how the staff normally encounter challenges shows there are solid coping mechanisms in place. Switching to see how the staff and leadership handled COVID-19 also indicates proactive decision making rather than just reacting to changes. The comparison of different approaches to handling changes brought about by COVID-19 is pretty clear when seeing other schools "were quickly pivoting, and pulling back from everything they normally do and just focusing on the new challenge" compared to the decision to "keep things as normal as possible, meaning our same structures, PLCs, curriculum, yes, we took a week or two of like, whew, okay . . . now let's get back into it," with the understanding that "if those things worked well prior to that situation, why wouldn't they be a good thing to continue?" Leadership tried to maintain continuity by maintaining morning announcements, Friday Forecasts, and email communication because "we wanted to give people this feeling, of like, our whole world hasn't been turned upside down." It was also speculated that teachers' ownership in much of the school proceedings got the teachers to a better place faster than others. Transparency throughout the pandemic was also cited as a benefit from a leadership perspective. One leader shared, "When people think the worst, they start rumors . . . they act out of fear when they don't know, so I just

think staying ahead of the curve in terms of communication and keeping people in the loop,” highlighting the importance of having clear and consistent lines of communication. They even “offered optional Q and A staff meetings throughout the summer, so if they did want to stay updated on what was going on, they could, and they didn’t have to, but to try to ease fears that staff had.” This example showcases the responsiveness to a variety of staff personalities and approaches to problem solving. A further testament to the school’s ability to adapt to the challenges presented by COVID-19 is shared here: “I actually feel like the strength of our school during this is how much we are doing that is normal and the same and routine,” adding teachers are not the only ones to benefit from consistency, “I think that kids appreciate that because it just does provide a sense of normalcy in a time that is really hard and not normal.”

It was shared “the whole goal is to not see the situation as something we’re just trying to get through, but something that potentially could change long term, what we do for schools,” furthermore, “maybe a pandemic is our opportunity to do that because we’ve been talking about it for a few decades, but no one ever actually makes the change.” Stemming from that, the leadership team spent time “talking about some of the possibilities. This is obviously frustrating and it’s going to be hard and it’s going to be tough, but, what are some of the good things that can come out of it?” Once leadership began this reflection, “We just started sharing some of our experiences with cool practices that we’ve seen or done ourselves in the past instructionally that might fit the COVID era.” As a team they embraced the challenge of what students and staff could gain from COVID-19, and from this a new committee was developed to support four focus areas within the school. Student agency, flipped classrooms, interconnectedness, and competency-based learning were the identified areas the “Imagineering” groups tackled in the hope of coming up with solutions that did not yet exist, and “we try to imagine the future.” The

imagineers had three optional virtual meetups during the closure for quarantine. The meetings provided a space to brainstorm, build knowledge, and frontload information for those involved.

The leadership team exemplifies collaboration, which is made clear with this example:

“We do pretty much everything together, whereas a lot of admin teams divide and conquer.”

Acknowledging this approach takes time, as it “means at times we might take longer to do things than other schools or, it could be done with one person, but it means that we very rarely have surprises coming at us because we are always hearing information.” This constant flow of ideas and information comes through email, text, and in-person conversations:

So if anything kind of takes up on the radar that seems off or needs our attention, then we’ve already started sharing it and talking about it the first time it popped up because we don’t really wait for something to become really out of control . . . we talk about everything all day . . . that’s not really a system that’s just more of how our team operates.

When reflecting on the principal’s leadership, one assistant principal shared:

She’s always calm. She’s always in control. She’s always thoughtful. She listens really well. Something she said that I think I always try to remember because I don’t think I operate this way normally, and that’s a great way of approaching life. Not just work, but once we were talking about something unexpected, this was before COVID, I don’t even know what it was, but I was observing, you’re always so calm and, I’m just impressed. And I asked, How do you do it? And she was like, so I never view these things that, you might call a problem or an annoyance or a frustration, I don’t view them as that. I just view anything that’s like a challenge or something that pops up, a puzzle or like a challenge to be figured out, in a sort of fun way. It’s something to overcome. It’s just such a positive spin on what can be hard situations. So I think, it’s important to know what’s the philosophy of the person at top. And that’s one thing that I really do see her as embracing is like, she never gets annoyed or there’s never any semblance of this is so hard, or why me, or anything like that. It is always just like focused on solutions, but not in a way that feels like unaware of people’s struggles. She honors that, but it’s always oriented towards like, let’s figure this out. And I really appreciate that.

Sources of efficacy may not be the only aspects influencing principal decision making in elementary schools. As mentioned before, school leadership encompasses many aspects and requires multiple approaches for handling the demands of the position.

Mastery Experiences

In response to the question, “How has your school experienced success?” the administration shared multiple examples, including setting “high expectations for kids academically, but also just as people,” not just setting high goals but also a determination for improvement because “everybody’s constantly wanting to get better, which then pushes everyone else to get better.” The district leaders also monitor teacher retention in terms of creating a positive school climate.

Reflecting on the growth of the school over time, it was shared that 9 years ago the school was not within the state level performance zone, so it was time to take action by “thinking about what do we need to do, we conducted a needs assessment, and it became very evident that this is a staff who looks at long-term results for kids, not short-term gains.” Although it was not always the case, student data are another celebrated success across the school, as the administration reflected on many facets of student achievement including the example of “that year we jumped by over 40 percentage points on the state assessment from the year before.” Another example of growth data came from a district-wide assessment including constructed responses and multiple-choice questions in both language arts and mathematics and one administrator reflected, “Very little of it was based on sheer achievement. It was very oriented towards growth measures, which is good,” echoing the importance of focusing on student growth and not just achievement data “so just a lot of growth with kids, a lot of growth just in kind of our instructional strategies and everything.” In addition to student growth and achievement, the school has earned recognition from the state.

The school has won multiple Center of Excellence awards from the state education department for sustained longitudinal growth on academic outcomes necessitating maintained

improvement rather than a quick fix or a spike in data. One administrator reflected on the pride from earning the Governor's Distinguished Growth award by sharing, "Looking at the list of schools who also won the governor's award, I noticed that a lot of them were from much more affluent areas. And we were the only one I noticed though as a Title 1 school." Being the only Title 1 school with such achievement "was a really proud moment where, this is a sign that we were doing really good things for kids, and they're achieving at levels comparable to really affluent districts." This sustained growth is certainly a purposeful and actionable goal, as it was shared, "You wouldn't expect to see some dramatic spike, the goal is nice stairsteps that are sustainable for kids and aren't just mastering a test, but also have the deeper meaning, of what we deemed important, long-term skills for kids." Keeping that in mind "shapes what we do in terms of each year is we're identifying target areas and what we're going to focus on." Balancing "what do we need to do in the short term, but what is our 5-year plan for ourselves and for kids" seems to be an articulated goal of school leadership.

Research Question 3

Research Question 3 was: How do HRO principles affect principal decision making in elementary schools?

There are "five hallmarks of organizations that perform remarkably well day after day under trying conditions and persistently have fewer than their fair share of crises" (Weick & Sutcliffe, 2015, p. 7), also referred to as HRO principles. The principles are commitment to resilience, deference to expertise, reluctance to simplify, sensitivity to operations, and a preoccupation with failure (Weick & Sutcliffe, 2015). The HRO principles were used to further explore patterns of meaning within the principal interviews. These are further understood as "an ongoing effort to define and monitor weak signals of potentially more serious threats and to take

adaptive action as those signals begin to crystalize into more complex chains of unintended consequences” (Weick & Sutcliffe, 2015, p. 3). Several principal actions align to this principle and are introduced in the Table 9 and further explained within each theme.

Table 9

Identified Themes and Connection to HRO Principles and Literature

Identified themes	Connection to HRO principles and literature
Communication	Commitment to resilience: “HROs overcome error when independent people with varied experience interdependently generate and apply a richer set of resources to a disturbance swiftly and under the guidance of negative feedback” (Weick & Sutcliffe, 2015, p. 107). Or simply put, the HRO principle of commitment to resilience relies heavily on feedback and growth as an organization to keep moving forward (Weick & Sutcliffe, 2015).
Culture of collaboration	Deference to expertise: Weick and Sutcliffe (2015) shared, “It is a sign of strength and courage to know when you’ve reached the limits of your knowledge and know enough to enlist outside help” (p. 126), yet they also cautioned to be mindful of the type of expertise being sought. Reluctance to simplify: “The more one knows, the more one realizes the extent of what one does not know. Therein lies the reluctance to simplify” (Weick & Sutcliffe, 2015, p. 72). Furthermore, reluctance to simplify calls for “people to keep updating as evidence changes” (Weick & Sutcliffe, 2015, p. 76).
Situational awareness	Sensitivity to operations: Weick and Sutcliffe (2015) shared, “When you do something, you change both yourself and the context around you” (p. 78), and further asserted that “sensitivity involves a mix of awareness, alertness, and action that unfolds in real time and that is anchored in the present (p. 79). Preoccupation with failure: Leaders who are attuned to the risk of failure set high expectations, are aware of potential problems, seek bad news, and recognize the danger of a near failure (Weick & Sutcliffe, 2015).

Communication

Communication is an integral part of leadership as shared above in the definitions of the three emerging themes. A commitment to resilience calls for accelerated feedback, which is possible through communication structures and protocols.

Commitment to Resilience

The references to feedback by both teachers and administrators highlight the importance of feedback within this school culture. Here is just another anecdotal example of the culture of accelerated and valued feedback supporting that continued growth. One of the principals shared, “Our doors are always open—teachers come all the time and are just like, I just need to process through this with you. Can you help me?” Aside from the open door to listen and support, there are many opportunities for teachers to get feedback from peers through “teachers modeling for other teachers and then meeting to debrief, just informally watching each other.” Additionally, the example of the pineapple chart was shared by multiple staff members: “Anybody who wanted to could look at the pineapple chart and decide, ‘Oh, I want to go see a Socratic seminar’ and go and watch, then get the opportunity to debrief with each other and talk more about it.” That peer-to-peer feedback serves as a way to tap into the experts within the building and build staff capacity.

Culture of Collaboration

Culture of collaboration relates to a deference of expertise, which means knowing the importance of seeking additional help when working through any situation. Administration purposefully connects staff members to share ideas and collaborate in terms of new teaching strategies or applications.

Deference to Expertise

One administrator provided an example of how the expertise is tapped into across the school when they shared about their experience leading cultural competency trainings: “Knowing that we have a teacher whose huge passion is that, I’m able to meet with them and talk about here’s what I’m presenting at every staff meeting, but they’re doing full trainings on

our days off.” This once again demonstrates the distributed leadership style belief shared among school leadership. That teacher involvement can also become teacher advocacy is demonstrated in this reflection: “If we can make it happen for a teacher, we will, we are servant leaders, so there are not a lot of no’s.” That does not mean teachers have total control of decisions but it shows the importance of participatory leadership and shared decisions when possible. This extends to all stakeholders, as shown in this example: “Choosing the mascot is an amazing example; at parent–teacher conferences, in the learning commons, people could just write up names of what they thought the mascot could be and vote for it.” Stakeholder involvement did not end there, as “then they took the top ones and families came in, families, students, everybody came in and voted for those. And that’s how the mascot was selected.” The benefit of this process was “it wasn’t just like the building leadership team did it.” This shared decision making is built into school functioning, as “everything is built that way . . . we’ll come up with different options for schedules, have a meeting. People will come in, they’ll have more ideas. We’ll try to make as many of those work as possible.”

Reluctance to Simplify

The COVID-19 health crisis certainly called for an updating of current understandings and procedures. This example shows how the leadership team took it upon themselves to be involved across the district to have up-to-date ideas and information about how to navigate the upcoming school year. This reluctance to simplify seemed advantageous when hearing leadership reflection on the process:

We were the only admin team where all three of us were on a different committee for the district planning committees for reopening. So we didn’t get a summer, but it very much prepared us more so than admin teams were prepared because we were involved in some level of a process and a huge success for us has been that we were able to preplan a lot of things and think forward on a lot. We put things into place that other schools are just now getting to, which has helped calm teachers down has made everybody feel more calm

even though we're still stressed out . . . But I just can't imagine, not being in this place as a team and what it would have been like had we not done all that pre preparation? I can't imagine what it would feel like right now.

This demonstrates the perception that responding to COVID-19 changes was both “novel and routine” (Weick & Sutcliffe, 2015, p. 68) as the administration team tried to focus on the predictable routines of a new school year and the demands of a new constraint in school operation. This approach was also present prior to COVID-19 when considering the multiple teacher voices brought into a variety of school-wide decisions and structures, BLT involvement, and other structures to allow multiple stakeholder perspectives to be heard.

Situational Awareness

Marzano et al. (2005) asserted “a school leader must understand the innermost workings of the school at the nuts-and-bolts level to be effective” because “the more one knows about the inner workings of an organization, the more one is able to lead and manage that organization” (p. 64). What these authors described is the situational awareness required of school leaders.

Sensitivity to Operations

Sensitivity to operations is another aspect of HROs that requires ongoing attention to the daily occurrences within the organization. This requires leaders to be physically and socially available and in constant communication with the front lines, and to balance a sense of humility when approaching each situation. The leaders in this study referenced aspects relating back to this sensitivity to operations. The numerous examples provided indicate it is an ongoing sensitivity instead of one-time check-ins with teachers when a situation arises.

Responding to how teachers handle stress, one administrator shared:

Teachers will come and they just need to vent for a moment and they'll do that. Then there's always this closing of the circle of coming back in, what are my next steps or here's what I'm going to try. [The principal appreciates] that conversations don't just end with the venting, there's always that circling back of alright, I processed that and now

here's what I'm going to do, but just like anything, everybody shows their stress in different ways.

Leadership appreciated the aspect of helping staff work through challenges as they arise. Another commented on the importance of understanding the uniqueness of each school's context by sharing, "We're not expecting that you then take this 'recipe' and transfer it to another school . . . it doesn't work that way." Leadership in this school can acknowledge "variables are different, people are different, needs of the kids are different. So you just have to be more responsive to the environment. You can't just be like, here's what works." That responsiveness comes through in the many examples staff and school leaders shared.

Another administrator reflected about having an open door policy, laughing while saying, "Ironically, I just closed my door, but I close it just because when it's open, it truly is people in and out all the time, which would be a good thing." Beyond the physical open door policy, they connected back to what Weick and Sutcliffe shared (2015): "Managers who demonstrate ongoing attention to operations create a context where surprises are more likely to be spotted and corrected before they grow into problems" (p. 93). The principal added:

Just letting people know that they truly have an open venue to always come talk to us means that, you know, we usually hear from people that they feel there's something they need to say or something they've noticed. And a lot of times people will come by and give input on something, so I think people will feel like they have a venue for sharing with us because I hate to say this cause it's so trite, but like we have an open door policy. I really do feel like people are comfortable coming to, to share frustrations or opinions or that type of thing.

This social awareness can help leaders stay on top of developing situations. Social awareness feeds into situational awareness, and one operational aspect supporting a collective awareness in leadership is the understanding that "people see their work as a contribution to a system, not a stand alone activity" (Weick & Sutcliffe, 2015, p. 84). This is illustrated through

several administration reflections, including when one of the principals shared about collaborative responsibility as they stated:

It's definitely split among the three of us . . . nothing's on any one person's shoulders and yet we're constantly pushing each other . . . I just love that in that I feel like I can really show my strengths, but also continue to be pushed forward on things I need to work on.

This example also supports the principle of deference to expertise through shared decision-making opportunities. Another aspect relating to contribution comes from the example that “anything that comes up, we will pull together very quickly, and whether that came from a teacher telling us, or us noticing something,” meaning the principals waste no time in handling situations because “we will meet the three of us and talk about, okay, what could this be? What more information do we need? What are our next steps? And we'll even game plan a little bit.” This example shows the constant planning and thinking ahead being done by this leadership team. Another example of responsiveness to current school needs is highlighted through this reflection on the goal setting process for the year: “When we go to write our yearly UIP and action plan, we're obviously looking at CMAS data, our local assessment data” but the data are more comprehensive as “we're also looking at our survey results from staff and students and parents to give us another layer of data about what is successful and what's working and what's not.” Seeking diverse perspectives can help note things that may otherwise go unnoticed and therefore could be overlooked.

Weick and Sutcliffe (2015) mentioned the importance of rethinking, reorganizing, and adapting practices when facing any interruptions or surprises. While responding to noticing symptoms of larger issues, one of the principals shared the importance of taking the time to “look for average in your building because the things that you're seeing as average are the things that could potentially become problems because they're not great yet.” A specific COVID-19 example came out when helping teachers to manage the extra stressors this year:

We've had to move some things around for the mental sanity of our staff, it's this balancing act of, what do you address, when do you just kind of plant the seed and when do you really push on it?

This balanced support does not happen without support from many people, as “we'll pull in who we need to pull in. So, if it's a coach, a counselor, a social worker, a teacher leader that we know is really good at something, how can we talk this through?” This demonstrates responsiveness from leadership and the ability to seek additional expertise when handling situations. There was also a celebratory tone among leadership, but it was bridled with humility as evidenced through this example relating to the staff: “Nobody's ever satisfied, we celebrate those small successes, we know we've done a good job. We always take that to be happy about what we've succeeded in,” but they are not the type of staff to sit around resting on their laurels because this principal was quick to add, “We can't stay here—we keep going and have to figure out what is the next best thing for our kids and for our staff.”

Preoccupation With Failure

One principle noted in the literature is preoccupation with failure, which requires “continuous attention to anomalies that could be symptoms of larger problems in a system” (Weick & Sutcliffe, 2015, p. 46) in order to detect when things go awry in a timely manner. Failure comes from slow response to concerning events, lack of anticipation of events, or failure to closely examine unexpected events to gain clarity of the system as a whole (Weick & Sutcliffe, 2015). In response to the question, how satisfied are teachers at your school?, a common theme of teacher retention was noted. However, this specific example shows the focus on examining deviations from the norm: “Teacher retention data is a big thing, and taking action when that doesn't match what you want. So there was one year where we lost more teachers than usual,” and they took action by “going through that process of why is this, what's causing that, what do we need to change? So it's reacting to that as well.” From this explanation there was a

clear reflection and response in working to solve the issue of teacher retention. It was further shared, “The climate survey that we go over every year is really probably the biggest piece of data of how do we know.” The building leadership team goes through a protocol to use the data, as “they’re the ones who really lead the analysis, it’s not something that just sits with the admin team, we make decisions based on what all of our colleagues have said.” Whether intentionally focused on failure or not, this example highlights the attentiveness of leadership when approaching a difficult situation.

I asked, how does your school pay continuous attention to anomalies that could be symptoms of larger problems? Another example of problem solving was explained, highlighting the processes in place and the action steps to solve the problem at hand. Last year, there was a grade-level data dip that gained attention and called for a root cause analysis, which led to a multi-pronged approach to get student data back on track. This may have gone unnoticed without certain structures guiding teaching, learning, and reflecting within the school because “we have a pretty consistent PLC structure where we are looking at data and all types of data regularly and because we are in rooms so much, I do think we start to pick up on things pretty quickly.” Reflecting on this particular example, they shared, “It’s very different than what we had ever experienced, but we knew that even before, we knew a few months in something is not the same.” This awareness was paramount in handling this situation as soon as possible “because we have a good way of finding those things out pretty quickly and allows us to react pretty quickly, but it still puts us in a reactive mode because our normal systems weren’t as successful as previous years.” This then turned into a problem of practice for the school, allowing instructional rounds to help with the root cause analysis. In response to the root cause, it was shared, “We did identify a couple of things by mid-year that we thought were the root causes, and so by January

we started to make changes, we didn't have all that much time because of COVID." The students were struggling, so a reading consultant was brought in to observe in-person instruction and e-learning instruction and to help facilitate a PDSA (plan, do, study, act) cycle. They will continue to monitor student progress in this specific grade and cohort for the next couple of years. Other factors identified through this process were to provide more strategies for teachers and to have more support staff in place to support students who struggle. The reflection on this process indicated "just through that process of picking up on things quickly, involving a group in some sort of root cause analysis and to not wait, but making changes when you see it occur." This thoughtful process extends beyond student data analysis, as another example was provided to highlight team dynamics. It was shared "we have a pretty good collaborative structure," but even with good structures in place:

There's been situations over the years where a team wasn't collaborating well, and we figured that out quickly in PLCs, then trying to figure out how do we change things to ensure that there is more effective dialogue between teammates.

This statement further highlights the importance of noticing issues that affect instructional decisions as well as school culture and climate.

Validation of Findings

There are many approaches to validating findings in qualitative research to ensure accurate and dependable research that addresses bias and assumptions (Creswell, 2015). Creswell (2015) provided three strategies to validate the accuracy of results and interpretation, including triangulation, member checking, and external auditing. Two fit particularly well with the current research study, including triangulation and member checking. Triangulation is "the process of corroborating evidence from different individuals" (Creswell, 2015, p. 259) and considers multiple perspectives, types of data, and methods of data collection. To address triangulation, I included the perspectives of teachers and administrators in the study as well as

various types of data to provide different insights on the case site. These types of data incorporated interviews, focus groups, school records, and surveys. Member checking is “a process in which the researcher asks one or more participants in the study to check the accuracy of the account” (Creswell, 2015, p. 259). I invited administrators and teachers to partake in this review to determine whether the descriptions were complete and realistic and the interpretation was representative (Creswell, 2015).

Summary

This chapter provided the results of the analysis of the data collected for this case study using a QUAL+quan approach. I analyzed and shared the results of the CTES descriptively through providing an overview of the relatively strong staff perceptions of CTE and supporting specific narratives and responses from the survey to provide a deeper and more complete understanding of the construct. The interview and focus group data were transcribed and analyzed by research question and organized based on emerging themes. The three emerging themes from the data were communication, culture of collaboration, and situational awareness, and were drawn from multiple perspectives, including teacher and administrator perceptions. Creswell (2015) urged the use of multiple perspectives to convey the complexity of any phenomenon under study. The final chapter includes more explicit connections to the literature through an exploration of the emerging themes and research questions while focusing back on the main constructs of the study—CTE and HRO principles.

CHAPTER 5: DISCUSSION

Interpreting findings provides the opportunity to share lessons learned from the research data and bridge the existing and emerging research. As Creswell (2015) shared, “Interpretation in qualitative research means that the researcher steps back and forms some larger meaning about the phenomenon based on personal views, comparisons with past studies, or both” (p. 256). Part of the interpretation involves connecting the current research to the existing literature and past research (Creswell, 2015). References from the literature were woven into the previous chapter to frame the qualitative examples included. This chapter includes a deeper exploration of the literature to more clearly connect the current research and the existing body of knowledge in the field.

COVID-19

With newly transitioned leadership in the White House, there has been a shift in focus to combating COVID-19; vaccines have been slowly rolling out, only to be pitted against mutating strains of the virus popping up around the world. Since March of 2020, leaders of districts and schools across the nation have made decisions on a local level in conjunction with health departments and state departments of education as to the type of instruction (e.g., in-person, hybrid, or fully remote) provided to students. There have been numerous concerns about the impact of the pandemic on students’ mental health, the loss of academic attainments, and the increasing disparities for the most vulnerable student populations (Terada, 2020). A study of MAP test data for over five million students highlighted the disparities across the country, as results showed the potential of a growing achievement gap:

Especially in school districts that serve families with lots of different needs and resources. Instead of having students reading at a grade level above or below in their

classroom, teachers might have kids who slipped back a lot versus kids who have moved forward. (Terada, 2020, The Achievement Gap is Likely to Widen section, para. 6)

The Brookings Institute (Kuhfeld et al., 2020) also compared MAP data for the 2019 and 2020 school years for similar demographics in each sample group of students in Grades 3–8. Results showed that “in reading, on average, the achievement percentiles of students in fall 2020 were similar to those of same-grade students in fall 2019, and in almost all grades, most students made some learning gains since the COVID-19 pandemic started” (Kuhfeld et al., 2020, “The Long-Term Effects of COVID-19” section, para. 1), though math achievement did not have such high levels of growth. Regardless of global or local implications, it is clear from the results of this case study alone that teachers and school leaders have been putting in work and students have engaged as they are able. Though state testing was placed on hold in Spring of 2020, at the time of publication, leaders in the State of Colorado have indicated they intend on testing again in Spring of 2021. I would hope these data will be used as a baseline or another snapshot of student success rather than as a punishment for schools and students for not making learning gains through a crisis. Despite the worry many people have expressed “the fact that we lost 10 months is huge” (Camera, 2021, para. 8), it is clear the pandemic has not stopped educators from working tirelessly, as referenced by the reflections of teachers and administrators provided in the previous chapter. Future research should be conducted on the impact of this health phenomenon more closely. Instead of focusing on the loss of instruction or lack of current data, I will guide you through implications and connections to the literature while exploring promising practices in education even amid a global health crisis.

Summary of Findings

This single embedded QUAL+quan convergent case study provides another perspective of CTE and school leadership. Chapter 4 provided in-depth descriptions of the analysis process

and further contextualized the emerging themes of the case study through narratives and initial links to the literature. First, it is important to highlight, based on survey participation, perceived CE levels were above average for the entire staff and each subgroup. Once again, the case site score of 558 was above the average score of 500, which indicates higher than average CTE beliefs (Ventura, 2003). Through the iterative qualitative analysis process, three overarching themes emerged: communication, culture of collaboration, and situational awareness. Because the levels of CTE were high and the themes presented link both to the sources of efficacy and to HRO principles, the findings serve to highlight practices that support the function of a highly reliable school. It is important to note that because individual school context drove much of this research, the findings and implications may serve as a potential reference but are not intended to be a one-size-fits-all approach for school leadership to adopt for sustained improvement. Findings and implications linked to the literature are presented in the following sections.

Implications of Findings

Research Question 1

Research Question 1 was: How do elementary teachers perceive collective efficacy in their individual school?

This question delved into teacher perceptions and lived experiences. When looking solely at the descriptive data presented in Chapter 4, it is evident teachers and staff have higher than average perceptions of CTE. Though the descriptive data represent the perceived level of collective efficacy, the narratives shared in Chapter 4 corroborate and illustrate these perceptions more clearly. This section provides further links to connect the literature with the emerging themes of communication, culture of collaboration, and situational awareness from the data analysis.

Donohoo's (2018) review of research indicated there are many positive behaviors associated with CTE, including "deeper implementation of school improvement strategies and teachers assuming leadership roles . . . teachers set high expectations and had a strong focus on academic pursuits, which in turn influenced the way they approached their work" (p. 329). Donohoo's review connects to the current research as teachers rotate through leadership opportunities within the school's BLT committee and can follow their own passions to grow as educators, which promotes teacher leadership and the implementation of improvement strategies. Further bringing Donohoo's words to life, teachers at the case site shared an interest in student achievement data, such as the teacher who stated, "I love seeing how well my students were performing and just how much growth they were making," and hold high expectations for themselves and their students. One teacher expressed that not everyone can fit into the school culture if they do not possess "the belief in the students that we do, that they can achieve at really high levels." One teacher shared, "Knowing that the school is achieving so well makes me individually want to become a better teacher," further highlighting the influence of student achievement and overall success and motivation of staff on individual teacher growth.

Tschannen-Moran and Barr (2004) captured Bandura's scholarship when they shared, "Student outcomes will be higher when individual teacher sense of efficacy is combined with strong collective beliefs" (p. 194). Although individual teacher efficacy beliefs were not a studied construct in the current research, the finding of increased levels of efficacy points to high student achievement. The most recent (i.e., 2019) third through fifth grade combined student state testing data for the case site showed higher than average science and mathematics scores and slightly lower than state average scores in language arts, whereas fifth grade data were above the state average in all three subjects (SchoolDigger, 2020). Recall that "collective teacher

efficacy was found to be significantly and positively related to student achievement” (Tschannen-Moran & Barr, 2004, p. 204), and although the data from the case study were not quantitatively linked, there are both strong perceptions of CTE and higher than average student achievement present, which have been linked in previous research.

In a study spanning 53 Dutch elementary schools based on the hypothesis that dense social networks would positively influence CTE, Moolenaar et al. (2012) concluded, “Dense networks appear to support and nurture teachers’ confidence in the capacity of their team to impact students’ learning and achieve school goals” (p. 258). Moolenaar et al. further asserted that CTE beliefs “are more likely influenced by the exchange of advice throughout the whole team, rather than the centralization of advice around certain focal individuals” (p. 259). When considering the theme of communication, this relates to the example a teacher shared in the current study: “Our administrators have done a really good job of identifying; helping us identify strengths that we have in the classroom ourselves and then giving us opportunities to share those with other people.” This also relates back to distributed leadership throughout the school by rotating building leadership appointments, which a teacher described as “when you come here, it doesn’t matter, there’s not a set person, everyone gets a chance with leadership roles and opportunities,” in addition to the collegiality described through co-teaching practices within the school. Although the social networks of teachers were not explicitly studied in this research, this finding further supports the emerging themes of communication and culture of collaboration within the school. The examples above indicate teachers perceive there to be high levels of collective efficacy at the school; now attention will turn to the efficacy perceptions of school leadership.

Research Question 2

Research Question 2 was: How do elementary principals perceive collective efficacy in their individual school?

Though the principals did not complete the CTES, the interviews uncovered aspects of their perceptions of CTE within the school. Research has indicated there is a “positive and significant relationship between effective school leadership and teacher collective efficacy” (Cansoy & Parlar, 2018, p. 559), thus demanding school leaders be attuned to efficacy levels within their school and committed to building it among staff.

School principals can implement practices to enhance teachers’ competence, to make them feel more effective and competent as a group, in this sense teachers who do not feel competent can be guided by those who have more experience in the profession. (Cansoy & Parlar, 2018, p. 563)

Principals at the case site have clearly considered and internalized the importance of Cansoy and Parlar’s (2018) finding, as the observation debrief protocol and the concept of “planting a seed” have both led to teacher reflection and development. It does not stop with giving teachers ideas for personal improvement, as one principal shared the importance of having teacher-driven development, stating, “It’s about getting other people interested in what that teacher’s doing and replicating it, that teacher becomes the expert and they’re the one training others,” which eventually leads to school-wide changes in teaching practices. One principal referenced keeping high expectations at the forefront of daily teaching and reflected on the highly collaborative approach while adding, “We are also mindful of connecting people with each other when it comes to effective practices that people might like to try out,” which truly demonstrates leadership’s focus on building staff capacity. The importance of “planting a seed” is further supported by previous research that indicated “the leadership practice of setting directions and developing people are positive predictors of collective agency of teachers” (Ninkovic &

Knežević Floric, 2018, p. 60), both of which are present when leadership guides the development of teachers in this strategic, yet grassroots, manner.

Earlier scholarship in the field also revealed certain leadership actions that positively correlate with teacher efficacy, such as “emphasizing accomplishments, increasing teachers’ certainty about the worth of their practice, being responsive to teacher concerns, promoting an academic emphasis in the school, and providing supervision to be useful by teachers” (Ross, 1995, p. 241). It was also suggested that “giving teachers a greater role in decision making is an affirmation of their competence” (Ross, 1995, p. 241), which might connect past and future perceptions of efficacy. In the case school, the Friday Forecast shoutouts to teachers not only emphasized teacher accomplishments but promoted a sense of worth about their individual practice. Leadership also shared, “Each team kind of has its own personality, I’d like to think that we, as a leadership team, try to respond and absorb or do whatever with what each individual team needs,” which solidifies an intentional responsiveness to individual teachers and teams when approaching situations. Teachers are included in decision making when possible through the dialogue and donuts and rotating building leadership appointments, which were described as ways to help gain “perspective on where these decisions come from and then how they’re pushed out.” From the selection of the school mascot to building master schedules for the upcoming school year, leadership aims to involve multiple stakeholders in a participatory leadership model, as one reflected on the importance of teacher and parent input in decision making: “It wasn’t just like the building leadership team did it.”

Referring back to ways leadership can promote the development of efficacy in schools, Brinson and Steiner (2007) indicated it is important for leadership to “build instructional knowledge and skills, create opportunities for teachers to collaboratively share skills and

experience, interpret results and provide actionable feedback on teachers' performance, and involve teachers in school decision making" (p. 3). Principal interviews and teacher focus groups included numerous examples of these actions. Instructional knowledge and skills are developed through the feedback provided during the reflective observation debrief protocol and modeled by leadership when needed for more effective implementation. Schedules have been crafted to promote common planning times for teams, and the PLC structure and other exploratory and interest-based committees provide collaborative time for teachers to grow and learn together. Practices such as these have been indicated to build CTE among teachers and should therefore be considered by leadership when looking to build teacher efficacy.

Research Question 3

Research Question 3 was: How do HRO principles affect principal decision making in elementary schools?

As mentioned above, the potential for situations to arise across a school on a daily basis is practically limitless. Thus, rather than just waiting for situations to arise, it is important for school leaders to engage in mindful organizing, which "preserves the capability to see the significance of weak signals and to respond vigorously" (Weick & Sutcliffe, 2015, p. 18). In essence, mindful organizing is at the core of HROs. Consider the following:

Good management of the unexpected is mindful management. By this we mean that people organize themselves in such a way that they are better able to notice the unexpected in the making and halt its development. If they have difficulty halting the development of the unexpected, they focus on containing it. And if the unexpected breaks through the containment, they focus on resilience and swift restoration of system functioning. (Weick & Sutcliffe, 2015, p. 18)

The HRO principles of preoccupation with failure, reluctance to simplify, sensitivity to operations, commitment to resilience, and deference to expertise are explored in relation to the examples from the case study data to illuminate ways school leaders can leverage these

principles to promote positive school functioning. Principle 1 is a preoccupation with failure, which:

Directs attention to ways in which your local activities can conceal or highlight such things as symptoms of system malfunction, small errors that could enlarge or spread, opportunities to speak up and be listened to, a gradual shift towards complacency . . . the need to pinpoint mistakes you don't want to make and respect for your own day to day experience with surprises. (Weick & Sutcliffe, 2015, p. 7)

A specific example of preoccupation with failure came when a principal discussed the grade-level data dip in reading and the process they went through to correct the situation. They stated, “Just through that process of picking up on things quickly, involving a group in some sort of root cause analysis and to not wait, but making changes when you see it occur,” which highlighted an actionable response to a malfunction within the system of instruction and addressing the issue before it could spread further. Support of preoccupation with failure was also evidenced through examples of working through team dynamics within PLCs and supporting teachers when their instruction was not where it needed to be. An HRO demands a preoccupation with failure, but also possesses a reluctance to simplify “because simplification obscures unwanted, unanticipated, unexplainable details and in doing so, increases the likelihood of unreliable performance” (Weick & Sutcliffe, 2015, p. 64).

Reluctance to simplify means “when we see more differences, we can develop a richer more varied picture of potential consequences, which can then suggest a richer and more varied set of precautions and early warning signs” (Weick & Sutcliffe, 2015, p. 65). Another way of thinking about this is, “If you want to cope successfully with a wide variety of inputs, you need a wide variety of sensors and responses” (Weick & Sutcliffe, 2015, p. 66). From these descriptions, the imperative to consider multiple stakeholder perspectives when leading a school becomes evident. This was made clear when one administrator shared the importance of “reminding each other we all have the same goal in mind” when it comes to parent, teacher, and

administrator interactions. This statement also supports Weick and Sutcliffe's (2015) focus on interpersonal skills as they shared how important it is to "strengthen skills of conflict and negotiation" while also fostering "norms that encourage mutual respect" (p. 75); this applies to the interactions among any stakeholders.

The daily running of a school is a large component of school leadership. Leaders who embrace a sensitivity to operations possess a "mix of awareness, alertness, and action that unfolds in real time and that is anchored in the present" (Weick & Sutcliffe, 2015, p. 79), with a particular focus and "attention to what is going on right now, in the present" (Weick & Sutcliffe, 2015, p. 80). This approach is evidenced at the case site through the constant communication among leadership on a daily basis. One principal shared, "We very rarely have surprises coming at us because we are always hearing information." The team does not wait for things to escalate, but talks about issues as soon as they are aware of anything. Similar to teachers' continuous reflecting on practice, the constant flow of communication among administration also supports what Weick and Sutcliffe (2015) shared: "When the interruption occurs, then you have a chance to rethink, reorganize, redirect and adapt to what you were doing" (p. 90). A principal reflected, "we talk about everything all day . . . that's not really a system that's just more of how our team operates," which reinforces the normalcy of the sensitivity to operations the team has developed. A continuous awareness of feedback typifies sensitivity to operations, whereas a commitment to resilience allows for perseverance despite setbacks.

Commitment to resilience demands "quick, accurate feedback so the initial effects of attempted improvisations can be detected quickly and the action altered or abandoned if the effects are making things worse" (Weick & Sutcliffe, 2015, p. 110). One particular example of this was shared by a principal while reflecting on a teacher who was teaching content below

grade-level expectations. Without fail, leadership acted to provide co-teaching and co-planning supports and provided a more structured curriculum to support the teacher as they gained the skills necessary to independently prepare rigorous grade-level content. Instead of telling the teacher they were not doing it correctly, the leadership approach was to “give it some time and give her the benefit of the doubt. And right now just provide lots of support.” The example shared above encapsulates what Weick and Sutcliffe (2015) shared, as “to encourage so-called inefficiencies, protect the people who produce them, and frame these inefficiencies as investments in resilience” (p. 108). A focus on resilience “is mobilized only if you’re honest about your own limits” (Weick & Sutcliffe, 2015, p. 108), which is why supporting a teacher working through instructional challenges exemplifies a commitment to resilience and links to efficacy.

The final principle of an HRO is a deference to expertise, which means that in order “to sustain performance in the face of changes in the tempo of demands, organizations striving for higher reliability shift their decision dynamics, authority structures, and functional patterns to create the potential for a flexible response to changing circumstances” (Weick & Sutcliffe, 2015, p. 124). This can be refined by examining “accountability, responsibility, and awareness of where to go for help” (Weick & Sutcliffe, 2015, p. 125). Accountability and shared responsibility are in place for school leaders because they share the workload, as one leader reflected, “I just love that in that I feel like I can really show my strengths, but also continue to be pushed forward on things I need to work on,” indicating they can share their expertise while ultimately supporting a common goal. Asking for help was referenced by teachers and administrators alike as principals link teachers with each other to strengthen individual and collective expertise, seek help from each other by talking through anything and everything that emerges throughout the

day, and even seek input from administrators outside of the building as needed. A principal shared, “I think sometimes it’s nice if your sounding partner does come from a very different philosophical place, because there have been some good takeaways that we’ve been able to implement here,” which highlights Weick and Sutcliffe’s (2015) statement that it is “a sign of strength and confidence to know when you’ve reached the limits of your knowledge and know enough to enlist outside help” (p. 126). Another example supporting this principle was shared when a leader was excited to partner with a teacher to provide PD to the staff. They expressed excitement, stating, “I’m able to meet with them and talk about here’s what I’m presenting at every staff meeting, but they’re doing full trainings on our days off,” underscoring the importance of tapping into expertise across the school.

The leadership actions at this case site encapsulate the five HRO principles and present potential practices to emulate in striving toward consistent and highly reliable performance as a school, as further explained below. Potential practices to promote CTE are also presented as a means of providing guidance on what leaders may wish to try depending on their school context.

Fostering Collective Teacher Efficacy

Consider the following statement: “Fostering collective teacher efficacy should be at the forefront of a planned strategic effort in all schools and school districts” and “educators’ beliefs about their ability to reach all students, including those who are unmotivated or disengaged, should be openly shared, discussed and collectively developed” (Donohoo, 2017, p. 1). Leaders may wish to consider some of the following practices rooted in research and framed by the current research when looking to foster and develop CTE among staff. Donohoo (2017) outlined four practices to support leaders in developing CTE among teachers: creating opportunities for meaningful collaboration, building collegial relations, empowering teachers, and involving

teachers in decision making. These aspects are present at the case site and are further contextualized for those seeking to adopt similar practices.

In order for meaningful collaboration to occur, there needs to be time and a clear structure to support such collaboration. The case school embodies this aspect starting with a schedule that provides common planning time for teams to the greatest extent possible. Additionally, staff use school-wide PD time without students to dig into data through PLCs and work on individualized goals. Though there is autonomy for teachers in this work, it is also structured to promote the efficient use of time, which supports Donohoo's (2017) assertion that:

To reach the level of joint-work and to ensure teams avoid the pitfalls of groupthink, structures and processes need to be in place that promote and require interdependence, collective action, transparency, and group problem solving in search of a deeper understanding. (p. 39)

This is evident when considering the school-wide problem of practice in which teachers dig into issues together to improve outcomes for students. In terms of collegiality, this is evident in teacher retention and the dynamic of the "school family" feeling shared by many across the focus groups and interviews alike. Teachers feel empowered at the school site, and several reiterated the boost they received when getting a "shoutout" in the weekly newsletter, being observed as a student teacher, or being sought out as an expert in some teaching practice. This supports what Donohoo shared: "Change is more likely to be effective and long lasting when those who implemented it feel a sense of ownership and responsibility for the process" (p. 40). Aside from leadership actively "planting seeds" of collaboration and building teachers up by drawing attention to their strengths, this also manifests through the share fairs and pineapple chart referenced numerous times.

Involving teachers in decision making was another leadership action used to foster CTE. The process the BLT engages in to unpack the annual climate survey is one way leaders

purposefully bring teachers into decision-making processes at the school. It was reflected, “They’re the ones who really lead the analysis, it’s not something that just sits with the admin team, we make decisions based on what all of our colleagues have said,” which builds ownership and promotes staff engagement in decisions outside of the classroom. These examples support the development of CTE within the school and provide insight into how these practices come to life within a school.

High Reliability Organization Principles in Practice

Though examples from teacher focus groups and principal interviews showcase the work at this specific school site, they also relate directly to the principles for establishing an HRO.

Marzano et al. (2014) made a compelling call to action when they stated:

Schools in the United States have traditionally not operated from a high reliability perspective, even though such a perspective is characteristic of virtually every organization that provides consistent, high-quality, high-yield results. Yet there is nothing stopping us from doing so. (p. 122)

With such an emphasis on school performance, it may seem daunting to identify tangible practices to support HRO principles; however, this research provides examples of how leaders and staff in one school have brought these principles to life within daily operations. There are detailed examples contextualizing each of the five HRO principles above, and they are summarized here for practitioner use. The cornerstones of an HRO include a preoccupation with failure, reluctance to simplify, sensitivity to operations, commitment to resilience, and deference to expertise.

To support a preoccupation with failure, a school leader may consider the following practices. Having an awareness of anomalies, or “something that is a departure from common order” (Weick & Sutcliffe, 2015, p. 47), draws careful attention to data and monitoring when achievement trends begin to shift provides the ability to act upon such changes in a timely

manner. Leaders may also promote the belief that every teacher is responsible for all students. This is accomplished through MTSS procedures to identify students who need additional supports. In the case study school, this includes co-teaching to provide additional instructional support for all students who need it in a class rather than just the students assigned to that teacher's case load. For example, the special education teacher may co-teach in a class with language learners and they can support those students simultaneously.

Reluctance to simplify can be bolstered by promoting the understanding of a shared desire to help students by reminding parents and teachers alike of the emphasis on student achievement. Additionally, leaders may promote structures that support positive interactions among stakeholders. As the daily function of a school often involves interruptions, "When the interruption occurs, then you have a chance to rethink, reorganize, redirect and adapt what you were doing" (Weick & Sutcliffe, 2015, p. 90). Being an HRO demands hands-on leadership, requiring leadership to be both physically and socially available, which was evident when multiple principals shared their "open door policy" and one casually shared that others notice when they are in their office all day rather than being a part of teaching and learning throughout the school. Thus, aside from being approachable and accessible, leaders may wish to be present in the school to stay "in close touch to what is going on" (Weick & Sutcliffe, 2015, p. 90) across the school through observations or interactions with students, teachers, and parents.

From the current study and existing work, it is clear that a commitment to resilience can be promoted through accelerated feedback, and nowhere is that more evident than the focus administration places on both formal and informal observations. Through leveraging feedback as a tool to support teachers, each observation provides the opportunity for teachers to reflect and grow in their practice. One principal shared it best by saying, "We don't believe anyone ever

masters teaching, there's always more that you can learn and that we're not doing our job if we're not helping push and grow your skillset as a teacher." Although feedback can bolster instructional practices for already strong teachers, it can also provide support for teachers who are not effective. Leaders looking to provide a commitment to resilience may wish to begin this work with a focus on structures for providing feedback in a timely manner.

For those looking to focus on a deference to expertise, several examples emerged from the case study that provide tangible areas for focus. The leaders in this school have adopted a shared leadership approach to handling most situations, meaning they work together and, as one principal shared, it "means at times we might take longer to do things than other schools or, it could be done with one person, but it means that, we very rarely have surprises coming at us because we are always hearing information." As such, this may be a promising practice to unify school leadership. Seeking the expertise of teachers, whether they can serve as models for instructional practices or help with PD and the training of teachers, also demonstrates a deference to expertise. Another leadership practice is to seek help from others by aligning with other leaders outside the school, especially those who may have a different philosophical perspective.

Connection to Literature

Theme 1: Communication

Through a meta-analysis, Marzano et al. (2005) identified communication as having a .23 correlation with student achievement, indicating communication has a statistically significant impact on student achievement. They defined communication as "the extent to which the school leader establishes strong lines of communication with and between teachers and students" (p. 46). I would argue parents and other stakeholders should also benefit from such communication.

Marzano et al.'s work highlighted the importance of providing structures for teacher communication, ensuring the accessibility of leadership, and maintaining communication with staff. Goddard et al. (2000) shared that social persuasion, including workshops, PD, and feedback, can have an impact on teachers, especially when paired with previous experiences of success. Brinson and Steiner (2007) also indicated it is important for principals to help interpret staff performance and contextualize feedback and outlined three ways this happens:

Identify specific efforts that resulted in success to build on future endeavors, explain how the results fit into a communally-shared understanding of what constitutes success . . . [and] present the outcomes in a manner that develops confidence while tempering trends toward overconfidence and complacency (if the outcome is successful) or defeatism (if the outcome is negative). (p. 4)

The feedback communicated to staff through the observation debrief contains aspects of reflection on both previous action steps and the most recently observed lesson, a reflection on brainstorming, planning and processing needs, and next steps. This deep, teacher-led reflection supports communal understanding of teaching and learning. Communication is evidenced at the case site through open door administration to the greatest extent possible, clear feedback for teachers after observations, Friday Forecast newsletter to provide staff with necessary information and build community, dialogue and donuts to share district communications, and accurate information to dispel misinformation among staff.

Communication is arguably essential to build a culture of collaboration, and although the two are closely linked, there are distinct differences and actions emerging from both. Culture of collaboration is explained in further detail below.

Theme 2: Culture of Collaboration

It is important to revisit previous scholarship relating to collective efficacy, leadership, and collaboration before connecting to the current research. When explaining the influence of CTE in schools, Goddard et al. (2000, p. 502) shared:

It is necessary to understand that teachers' shared beliefs shape the normative environment of schools. These shared beliefs are an important aspect of the culture of a school. Collective teacher efficacy is a way of conceptualizing the normative environment of a school and its influence on both personal and organizational behavior. That is teachers' beliefs about their faculty's capability to educate students constitutes a norm that influences the actions and achievements of schools.

Though the initial research on CTE highlighted the importance of culture, so too has more contemporary research. Marzano et al. (2005) conducted a meta-analysis and highlighted culture as having a .25 correlation with student achievement, which is notably the same correlation they found with leadership on student achievement overall. Several scholars have offered reflections on a culture of collaboration. Eells (2011) captured the work of Albert Bandura by sharing, "Together, people can accomplish that which one person cannot. Social action depends on the belief that a group can effect change. Collective efficacy helps people realize their shared destiny, enabling agency at the group level" (p. 51). Extending the importance of group collaboration, Fullan (2010) shared, "Collective capacity generates the emotional commitment and the technical expertise that no amount of individual capacity working alone can come close to matching" (p. xiii), which underscores the importance of collaboration among school staff. This collaboration must be purposefully cultivated, as research conducted by Goddard et al. (2015) indicated a strong interrelationship between teacher collaboration and principal leadership with an effect size of .70, which supports the importance of principal leadership when it comes to students' educational attainment. More specifically, the results indicated principal instructional leadership determined teacher collaboration and it was shared that schools in which principals "were reported by teachers to frequently monitor instruction and to provide relatively strong instructional guidance were the ones most likely to be characterized by high levels of collective work among teachers to improve instruction" (Goddard et al., 2015, p. 524). Involved leadership and teacher collaboration came through across focus group and interview responses in this case

study and are further supported by the assertion that “school improvement requires strong instructional leadership and sustained work among teachers on teaching and learning” (Goddard et al., 2015, p. 525). The culture of collaboration was contextualized when the case study participants shared both formal and informal collaboration across school staff. Formal collaboration was referenced by intentional time to collaborate built into schedules, opportunities for everyone through rotating BLT representatives, “planting the seed” to build individual and collective expertise, scaffolded development opportunities to join upcoming focus committees by invitation or choice (imagineering), and informal collaboration shared through the staff Facebook page and planning for co-teaching. These real-life examples contextualize the work of Goddard and colleagues and even with different manifestations for unique school constraints, could be considered by school leaders as actions to support student achievement. Goddard also asserted, “One of the most powerful forms of intensive teacher collaboration that principals can support is teachers’ observations of others’ classrooms to form common understandings of good teaching practice” (p. 526). This aspect of collaboration surfaced across focus groups and interviews as numerous participants shared the impact of the pineapple chart, share fairs, working through a problem of practice in collaborative teams, co-teaching, leadership “planting a seed” while encouraging staff to seek expertise among colleagues, and even having leadership set up observations across the school and district to build teacher capacity. The culture of collaboration was evident throughout reflections and has been supported through intentional leadership guidance and support.

From the existing literature and current research, there are several tangible suggestions to help leadership foster a culture of collaboration. Research has shown that “by promoting a culture of collaboration around instructional improvement, leaders have the potential to support

school improvement in ways that positively influence teachers' collective efficacy beliefs and thus promote student achievement" (Goddard et al., 2015, p. 526). In addition to promoting collaboration, Goddard and colleagues stressed the importance of principals setting high standards for teaching and learning, eliciting teacher input for instructional decisions, spending time in classrooms, and creating structures to support teacher collaboration. Based on the articulated practices at the case site, the emphasis on observation and actionable feedback through a reflection cycle with teachers supports the notion that leaders at this school are aware of instructional practices and are simultaneously working to build teacher capacity. Extending beyond evaluative observations, Goddard et al. (2017) shared, "Principals in schools with relatively high collective efficacy were often credited by teachers for putting structures in place that enabled teacher collaboration for instructional improvement, frequently through peer observation for the purpose of instructional skill development, not evaluation" (p. 232). Although there are formal evaluation models in place, the case study site also has other structures such as the pineapple observation chart, where teachers open their classrooms for peer observations, and share fairs and co-teaching serve as a foundation for collaboration across the school. Staff at the case site also articulated time and again the culture of dedication and hard work at the school, which aligns with what Goddard et al. indicated in their research on schools where there is high collective efficacy. Goddard et al. described "consistent stories of strong normative pressure to increase instructional time, to contribute to extra instructional efforts and to refuse to accept excuses for low performance in schools characterized by a high level of collective efficacy" (p. 232). This was evident through the examples of teachers continually striving for improvement and holding themselves and their students to a high standard and another consideration by leaders when working to build collective efficacy. Aside from

promoting collaboration, leadership must attend to larger aspects affecting daily teaching and learning for sustained growth and performance.

Theme 3: Situational Awareness

Situational awareness had the largest correlation (.33) to student achievement in the meta-analysis conducted by Marzano et al. (2005), supporting the notion that “it makes intuitive sense that a school leader must understand the innermost workings of the school at the nuts-and-bolts level to be effective” (p. 64). This links directly to the HRO principle of sensitivity to operations, as Weick and Sutcliffe (2015) defined situational awareness as “the perception on the elements in the environment within a volume of time and space, the comprehension of their meaning and the projection of their status in the near future” (p. 83). Weick and Sutcliffe warned that when situational awareness drifts, “There is a better chance we will overlook failures, settle for inaccurate simplifications, become immersed in intentions and plans, rely more heavily on preexisting routines and comply blindly with authorities” (p. 83), any of which certainly will affect school operations. School leadership shared “anything that comes up, we will pull together very quickly, and whether that came from a teacher telling us, or us noticing something” and then they immediately work to address the situation rather than letting it fester or evolve.

Situational awareness has influenced daily school operations and the awareness of staff needs at the case site. Principals shared multiple examples of staff members coming to them to share frustrations at work or otherwise, and they appreciated “that conversations don’t just end with the venting, there’s always that circling back,” as staff are willing to work through their situations. Because learning is a social process, knowing teachers is a large component of understanding the core of school operations. Situational awareness applies to the example referenced by one principal who shared about a “sensemaking conversation” with a teacher who

was working to promote more rigor in their instruction after it was noticed to be below grade level. It is clear administration is aware of concerns with individual teachers or teams and immediately works to support and guide growth. Another example of this emerged when one principal shared the concern, “If we don’t renew a teacher’s contract, is there something we could’ve done differently to try to help them be more successful? . . . with struggling teachers, it’s a hard process to navigate.” This extended to teams when one administrator shared the required finesse of knowing how to approach each team because some, for example, need “a lot of sensemaking and conversation, and they need to be able to come in . . . and express their frustration and we’ll work through it with them” whereas others can work through it more on their own. I would argue that knowing team dynamics and individual teachers is a crucial part of having a true situational awareness of the innermost workings of the school.

The importance of situational awareness also became more clear during the COVID-19 health crisis, as leadership implemented several practices to maintain connection and support staff. When in-person instruction was halted in March of 2020, leadership made a concerted effort to maintain typical communication for a sense of normalcy and provided optional information sessions throughout the summer to keep staff informed and proactively prevent the spread of misinformation, “so if they did want to stay updated on what was going on, they could, and they didn’t have to.” Another action was implementing “COVID groups” for staff to check in with each other and support one another during a spring semester filled with tumultuous changes. Even the sense of how to leverage the pandemic to make positive changes shows an awareness of the situation and a continued desire for improvement as one principal shared a question that guided the leadership team through this time: “What are some of the good things that can come out of it?”

It is clear leadership in this school places emphasis on being aware of school operations on both a telescopic and microscopic level, attending to issues large and small as they surface. Leaders wishing to develop more situational awareness may look to implement similar practices to those referenced in this research within their own school context. Situational awareness is demonstrated through open door policies, building relationships with staff through ongoing conversations with individual staff members and teams, and spending time in classrooms to observe instructional practices and academic operations. Furthermore, situational awareness was exemplified by stepping back and observing a situation and either purposefully moving forward in a similar manner, such as keeping Friday Forecast newsletters to maintain consistency, or assessing potential opportunities for change, such as looking into positive changes that can emerge from COVID-19. Navigating COVID-19 serves as a perfect example of persevering through challenges and captures the essence of CTE.

Connecting Collective Teacher Efficacy Research and Practices

Previous research has shown collective efficacy is more important in explaining school achievement than is SES, which is significant because “it is easier to change the collective efficacy of a school than it is to influence the SES of the school” (Hoy et al., 2002, p. 89). Hoy et al. (2002) further asserted, “When collective efficacy is high, a strong focus on academic pursuits not only directs the behavior of teachers and helps them persist but also reinforces a pattern of shared beliefs held by other teachers and students” (p. 89). Typifying this aspect of CTE, the case site has a strong academic focus supported by leaders and teachers alike. Take, for example, data meetings and PLC structures, co-teaching to support all students, “planting the seed” to spread instructional initiatives, and frequent observations paired with debrief for teacher growth, all of which work to support students’ academic achievement. Building CTE does not

come through a sole focus on academics, it is also supported through the sources of efficacy, including mastery experiences, vicarious experience, social persuasion, and affective states (Goddard et al., 2000).

Mastery experiences are the most influential source of efficacy (Bandura, 1997) and therefore should be considered by school leadership looking to bolster the CTE of staff. Mastery experiences were showcased across the case site through teacher and administrator responses. Teachers shared excitement about receiving a forwarded parent email during a challenging time and felt positive encouragement from that and also shared they felt motivated and supported to implement new teaching practices because they had the support of leadership. The school celebrates successes through weekly shoutouts in the Friday Forecast newsletter and through statewide recognition of student growth and achievement, yet they never seem to stop and settle for complacency, they keep moving forward. CTE builds when “teachers experience success and observe the accomplishments of their colleagues as well as success stories of other schools, they develop beliefs in their own capabilities to succeed” (Hoy et al., 2002, p. 91). Teachers in this study shared personal success stories relating to data growth, successful observations, implementation of new structures, and being sought as an expert in a certain facet of teaching as examples of mastery experiences. They also shared the importance of peer observation to build their skills as teachers.

Vicarious experience is strengthened through the modeling of practices and witnessing the success of others. The pineapple chart, share fairs, and co-teaching practices are three specific ways leaders in this school demonstrate attention to vicarious experience as a means of promoting teacher efficacy. Learning coaches are another example of supports to build vicarious experience, as they come in to model and explore instructional practices with teachers. Teachers

appreciate that even principals come to model instructional practices, as one teacher shared a favorite instructional routine came from individualized PD and a lesson modeled by a principal.

Social persuasion is exemplified throughout the school. PD and feedback are both identified sources for building CTE. Teachers and principals alike reflected on the culture of observations and more importantly the feedback that comes from them. It is clear teachers crave the feedback to grow as educators; one teacher shared appreciation for the feedback process by stating, “It’s not like you just get a report or an email about how you did, and then there’s nothing after that,” but rather appreciating the opportunity to discuss and improve teaching practices. Principals also feel strongly about the feedback model as one shared, “We have a really consistent and frequent observation feedback model . . . they themselves have articulated the growth that they’ve undergone, we are able to like really help teachers to become more effective.” This example highlights the importance of feedback for teacher growth and development; however, feedback alone is not enough, but “when paired with success and positive experiences it can influence the collective efficacy of a faculty” (Goddard et al., 2000, p. 484). Leaders should look for ways to provide ample feedback paired with success to help build efficacy.

The ability to navigate and cope with difficult situations is another source of efficacy, also known as affective states. Aside from the dynamic situation posed by COVID-19, teachers shared other ways affective states are exemplified within the case site. One teacher shared their experience with a shift in teaching demands, and said that though it was a lot to process initially, they felt the overwhelming support from colleagues who came to assist in the transition; they reflected on the process, stating, “I appreciate all the love, and they’re all like, you’re going to be fine.” Teachers and administration support each other through times of difficulty whether they

are asked to or not. Several examples reinforced this idea, such as when middle school teachers came to help log primary students into their computers, COVID groups, and even walking dogs for colleagues outside of school. COVID-19 has left many teachers feeling ineffective, as one shared, “We know the expectations we have for ourselves and our students, and it’s super frustrating to me that I can’t meet them,” but that has not stopped teachers from putting in the work because it was noted “with COVID, we’re not willing to sacrifice quality.” It is clear from those statements teachers are pushing through otherwise negative forces affecting their work. Though it demands much reflection and reframing, they continue to show up despite feelings of inefficiency. This persistence demonstrates strong CTE because “in a school with a high level of collective teacher efficacy, teachers are more likely to act purposefully to enhance student learning” (Goddard et al., 2000, p. 502), and these teachers are not about to settle for anything less than their best for their students.

How might school leaders support CTE in their schools? They can start by considering any of the examples provided above and emphasizing what is going well within the school by highlighting success of the school. At the case site this was achieved through weekly shoutouts, positive and encouraging emails, and school recognition of achievement data. Furthermore, leaders may consider providing ample opportunities for peer observations, as evidenced in this school through the problem of practice observations, the pineapple chart, share fairs, and even co-teaching experiences. Feedback should also frame the work of school leaders to support teacher growth, as having specific feedback structures or protocols in place may help support the intentionality of feedback. Support through difficult times is also crucial, which is where a strong school culture focused on building supportive relationships among staff is key. Though CTE is a

promising construct for promoting academic achievement in schools, HRO principles may further frame the work of school leaders.

Linking High Reliability Organization Principles to Practice

Bellamy et al. (2005) outlined a framework for achieving high reliability within schools that included aiming to improve normal operations, detecting potential problems, and recovering from those problems that is also explained through Weick and Sutcliffe's (2015) five principles of HRO, including preoccupation with failure, reluctance to simplify, sensitivity to operations, commitment to resilience, and deference to expertise. Leaders wishing to build highly reliable schools may consider the following actions that support an HRO. Bellamy et al. (2005) shared, "In schools focused on achieving high reliability in annual measures of student learning, detecting problems early means identifying students who are struggling or falling behind soon enough for the school to respond effectively" (p. 392). As a data-driven school, it is clear this aspect of high reliability came through in multiple examples, such as when one teacher reflected on the importance of monitoring data to "make groupings of kids to put interventions in place, to really make sure we're measuring the kids' growth ability to not just like assuming everything's okay," adding the desire for all students to grow, not just exceptionally high or low students. This was also brought up by a school leader who shared the example of a grade-level dip in data resulting in a systematic approach to determine the root cause and put supports in place to remedy the issue. These examples showcase the importance of what Bellamy et al. (2005) called "collaborative review of student work," which helps identify "learning difficulties because it engages several teachers in the evaluation process" (p. 395). In addition, "It appears more likely that problems will be detected and addressed effectively when individuals with divergent viewpoints work in collaboration to observe and analyze situations" (Bellamy et al., 2005, p.

401). Similar to the examples referenced above, attending to issues is not a project for individuals to face alone. These examples both align with having a preoccupation with failure, which requires leaders and teachers to “report the failing, contain it, do something about it, own it” (Weick & Sutcliffe, 2015, p. 56). The examples above indicate both an identified area for growth, in this case student achievement, and strategic actions to improve student learning outcomes. Consider again the example of the grade-level dip in reading performance in which the team did not stop at identifying a problem but also took steps to remedy the instruction by providing more intensive interventions, trying different instructional approaches (Bellamy et al., 2005), and bringing in a consultant to support teachers, which supports a commitment to resilience. Commitment to resilience demands recovery, which is described as “adapting to a surprise by reworking whatever is at hand” (Weick & Sutcliffe, 2015, p. 98); in this case the surprise was the decline in student performance.

Leaders wishing to work toward cultivating highly reliable schools may spend more consistent time in classrooms and adopt open door policies, both of which enable leadership to actively track bad and good news alike (Weick & Sutcliffe, 2015). Aside from time in classrooms, continued monitoring of data through MTSS and PLC structures enables all teachers to become active stakeholders in student achievement outcomes and root cause analysis when issues arise that require strategic improvement strategies to solve identified concerns. Though there is considerable research supporting both CTE and HRO principles within educational systems, there is still much more to be uncovered by future research.

Future Research Recommendations

Though this research links aspects of CTE, HRO principles, and principal leadership, it also occurred during a pandemic. Strong teacher perceptions of CTE and responses relating to

continued high expectations for teachers and students indicate the COVID-19 pandemic has not stopped these teachers from meeting the needs of their students. Aspects of COVID-19 certainly provide additional avenues for future research, as it would be interesting to study whether perceptions of efficacy remained high despite the countless setbacks brought on by the pandemic. COVID-19 was built into the current research, yet was not the focal point in the initial design. Future researchers may wish to explore the impact of COVID-19 on any number of aspects relating to educational research in this domain.

Another compelling aspect that relates to the study is the concept of a growth mindset. Researchers have explored the concept of self-efficacy and growth mindset of teachers, yet not with a specific focus on CTE or HRO principles. Furthermore, a particular study focused on the mindset and socioeconomic status of children in Chile and the authors reported, “Our research shows that, at every socioeconomic level, those who hold more of a growth mindset consistently outperform those who do not—even after holding constant a panoply of socioeconomic and attitudinal factors” (Claro et al., 2016, p. 8667). The concept of growth mindset “is based on the belief that your basic qualities are things you can cultivate through your efforts, your strategies and help from others” furthermore, “although people may differ in every which way- in their initial talents and aptitudes, interests, or temperaments- everyone can change and grow through application and experience” (Dweck, 2007, p. 7). Several teacher narrative examples from the current research relate to the development of growth mindset in several ways, including the cultivation of efforts through individualized professional growth, and more importantly the notion of accepting help from others whether through collaboration, peer observation, or even formal feedback from school leadership. The study in Chile underscored the importance of growth mindset in student achievement, whereas the existing research underscores the

importance of CTE as the number one factor influencing student learning outcomes. These connections are loosely drawn and warrant further attention to see just how, if combined, CTE and growth mindset can positively influence student achievement outcomes. To what extent would learning be affected, especially for students from low SES home situations, if CTE and growth mindset were focal points for a school organization.

Collective Teacher Efficacy

Goddard and Goddard (2001) studied how school context relates to CTE, finding “teacher efficacy does vary systematically among schools . . . hence organizations appear to play a role in teachers’ reported levels of efficacy” (p. 815). Considering Goddard and Goddard’s research spanned 52 schools with multilevel analysis and this case study provided insight into how staff at one urban school perceives CTE, examining other case sites could further support this finding. CTE beliefs vary among teachers just as they do among schools. Another potential research exploration includes studying the relationship between years of service and perceptions of CTE. This research highlighted that teachers with 0–5 years of service had a higher perception of efficacy, with an overall score of 563, compared to more veteran teachers of 6–20 years of service who scored 560 on the CTE. This raises a question not addressed through this research regarding how CTE is influenced by years of service and how it changes over time. A Norwegian study exploring teacher efficacy and teacher burnout indicated “perceived collective teacher efficacy was negatively related to number of years in the teaching profession” (Skaalvik & Skaalvik, 2007, p. 616), which could provide some explanation for this phenomenon. As such, the concept of teacher experience and perceptions of CTE certainly provides another aspect for consideration in future research.

Donohoo (2018) noted that in schools with higher CTE, “Teachers are less likely to leave teaching when employed in schools where educators shared the perception that together they could overcome challenges and meet students’ needs” and levels of CTE are “also associated with other positive factors including greater job satisfaction, less stress and burnout” (p. 329). Although the health crisis has not eliminated the stress of teaching and leading, this assertion leads to future research on the impact of CTE and teacher retention. Interestingly, this study evidenced high teacher retention paired with higher than average CTE; however, it is unclear whether these constructs are statistically linked, thus opening another potential avenue for future research.

High Reliability Organizations

Marzano et al. (2014) developed *A Handbook for High Reliability Schools*, which can serve as a specific model for examining school practices in a step-by-step manner. Future researchers may consider using the instruments and tools provided in the handbook to further probe staff and stakeholder perceptions of school functioning as it relates to HRO. Bellamy et al. (2005) shared, “The examples listed in this article are illustrations; they are intended neither as prescriptions nor as an exhaustive list of possibilities” (p. 402), meaning there is still much more to uncover about HROs in relation to school functioning. Novelty in case sites by grade level or demographics could further build the understanding of specific functions within highly reliable schools. The important caution here is there is no one-size-fits-all approach when working toward sustained school improvement, as one principal from the case site shared, “We’re not expecting that you then take this ‘recipe’ and transfer it to another school . . . it doesn’t work that way.” Structures must fit the context of the school in order to be effective drivers of change.

Conclusion

The examples provided in this chapter are rooted in the literature and contextualized from the case site, and though they are described through sources of CTE and HRO principles, there is overlap among the strategies, highlighting promising practices for school leaders ultimately looking to develop and maintain highly reliable schools. These came to life through the three overarching themes of communication, culture of collaboration, and situational awareness, which support aspects of both HRO and CTE structures. Leaders looking to adapt practices for improvement may consider the structures outlined in the existing research and brought to life in the case site. Structures that support developing CTE drawn from the literature and witnessed in the case site include recognition for success, observation and modeling of instructional practices, consistent and timely feedback, and working through challenges in a strategic manner. CTE building practices paired with HRO structures such as collaboratively keeping a close eye on data and taking action to correct any concerns immediately, sensitivity to ongoing operations through frequent observation and time in classrooms, relying on the individual and collective expertise of others serve to build capacity of staff and students. These are not prescriptive suggestions nor are they an exhaustive list of all potential examples, but should be considered within the context of a unique school. “Amazing things happen when a school staff shares the belief that they are able to achieve collective goals and overcome challenges to impact student achievement” (Donohoo, 2017, p. 1). Our students deserve nothing but the very best, and these practices may just be a part of the student achievement solution.

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APPENDIX: CONSENT FORMS

COLORADO STATE UNIVERSITY Center for Educator Preparation

Research Study: Collective Teacher Efficacy, Principal Leadership & High Reliability
Organization Principles: How can leaders develop and maintain high achieving elementary schools?

Researcher's Names: Dr. Donna Cooner, Susan Ernst (PhD Candidate), Dr. Wendy Fothergill,
Dr. Cindy O'Donnell-Allen, Dr. Ann Sebald

Interview CONSENT FORM: Adult Participation in an Interview

What is the Purpose of this Research?

The purpose of this study is to see what teacher perceptions of collective teacher efficacy are within the school in addition to hearing teacher and administration perspectives on life at your school. We hope to use what we learn from the study to empower and inform school leadership decision making abilities.

Why have I been asked to take part?

You are part of the administration at your school. We would like you to take part in a discussion to help describe your perspective of leadership in supporting collective teacher efficacy within the school.

What will I be Asked to Do?

You are being invited to participate in one interview discussion to take place at your school in September/October 2020. Specifically, we want you to help identify leadership practices and structures that support collective teacher efficacy in your school. Outcomes from this discussion will help inform leadership decision making towards building collective efficacy among teachers, especially in schools with high achievement and high needs. There will be a one on one interview session, and you do not need to answer any question that you would prefer not to answer. With your permission, your comments will be audiotaped. Only the research team will have access to the audiotapes, and no identifiers will be on the recording. Once the recording has been transcribed, it will be destroyed. The interview will be discussing how you support collective teacher efficacy, and ultimately student achievement. Your time commitment is no more than about 1 to 1.5 hours, with the option to follow-up if needed.

Voluntary Participation

This discussion is voluntary—you do not have to take part if you do not want to. If you do not take part, it will have no effect on your current status. If any questions make you feel uncomfortable, you do not have to answer them. You may stop the interview at any time for any reason. There are no right or wrong answers to the questions. We want to hear many different viewpoints and would like to hear from everyone. We hope you can be honest. Responses made by all participants be kept confidential.

Risks

We do not think any risks are involved in taking part in this study. We expect that any risks, discomforts, or inconveniences will be minor and we believe that they are not likely to happen. If discomforts become a problem, you may discontinue your participation. This study may include risks that are unknown at this time.

Benefits

It is not likely that you will benefit directly from participation in this study, but the research should help us learn how to share the successes of your school with other schools who may have similar demographics or student populations.

Who Will see my Information?

Your privacy will be protected. Your name will not be used in any report that is published. The discussion will be kept strictly confidential. While your responses are confidentially held by the researchers, please keep in mind there will be other focus group participants present during any comments you make who may or may not share information outside of the focus group, including information that you may feel is sensitive or private. We may be asked to share the research files with the CSU Institutional Review Board for auditing purposes. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of a code number to let Ms. Ernst and Dr. Cooner know who you are. We will not use your name in any of the information we get from this study or in any of the research reports. When the study is finished, we will destroy the list that shows which code number goes with your name.

Information that can identify you individually will not be released to anyone outside the study. Ms. Ernst will, however, use the information collected in her dissertation and other publications. We also may use any information that we get from this study in any way we think is best for publication or education. Any information we use for publication will not identify you individually.

Audio recordings will be deleted after transcription and the completion of research. In case of an emergency, injury, or illness that occurs during this study, I hereby authorize the release of any and all health information to allow for medical care and treatment of my condition.

Participation and Withdrawal

You can choose whether or not to be in this study. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you do not want to answer. There is no penalty if you withdraw from the study and you will not lose any benefits to which you are otherwise entitled.

What if I have Questions?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the investigator, Susan Ernst (PhD Candidate). If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491- 1553.

Audiotape Permission

I have been told that the discussion will be audio recorded.

I have been told that I can state that I don't want the discussion to be taped and it will not be. I can ask that the tape be turned off at any time.

I agree to be audio taped ___Yes ___No

Please write your name below and check yes or no. If you want to take part.

Sign your name at the bottom.

NAME

_____ Yes, I would like to take part in the interview.

_____ No, I would not like to participate in the interview.

SIGNATURE

DATE

Do you give permission for the researchers to contact you again in the future to follow-up on this study or to participate in new research projects? Please initial next to your choice below. YES
NO

If YES, Please provide contact information :

Email: _____

Telephone: _____

COLORADO STATE UNIVERSITY
Center for Educator Preparation

Research Study: Collective Teacher Efficacy, Principal Leadership & High Reliability
Organization Principles: How can leaders develop and maintain high achieving elementary schools?

Researcher Team: Dr. Donna Cooner, Susan Ernst (PhD Candidate), Dr. Wendy Fothergill, Dr. Cindy O'Donnell-Allen, Dr. Ann Sebald

FOCUS GROUP CONSENT FORM: Adult Participation in a Focus Group

What is the Purpose of this Research?

The purpose of this study is to see what teacher perceptions of collective teacher efficacy are within the school in addition to hearing teacher and administration perspectives on life at your school. We hope to use what we learn from the study to empower and inform school leadership decision making abilities.

Why have I been asked to take part?

You are part of the school staff. We would like you to take part in a survey and discussion to help describe your perspective of leadership in supporting collective teacher efficacy within the school.

What will I be Asked to Do?

You are being invited to participate in one focus group discussion to take place at your school in September/October 2020. Specifically, we want you to help identify leadership practices and structures that support collective teacher efficacy in your school. Outcomes from this discussion will help inform leadership decision making towards building collective efficacy among teachers, especially in schools with high achievement and high needs. There will be 2-4 participants in the group discussion, and you do not need to answer any question that you would prefer not to answer. With your permission, your comments will be audiotaped. Only the research team will have access to the audiotapes, and no identifiers will be on the recording. Once the recording has been transcribed, it will be destroyed. The group will be discussing how the principals in your school help support collective teacher efficacy, and ultimately student achievement. Your time commitment is no more than about 1 to 1.5 hours.

Voluntary Participation

This discussion is voluntary—you do not have to take part if you do not want to. If you do not take part, it will have no effect on your current status. If any questions make you feel uncomfortable, you do not have to answer them. You may leave the group at any time for any reason. There are no right or wrong answers to the focus group questions. We want to hear many different viewpoints and would like to hear from everyone. We hope you can be honest even when your responses may not be in agreement with the rest of the group. In respect for each other, we ask that only one individual speak at a time in the group and that responses made by all participants be kept confidential.

Risks

We do not think any risks are involved in taking part in this study. We expect that any risks, discomforts, or inconveniences will be minor, and we believe that they are not likely to happen. This study involves completion of a 21-item survey and oral response to questions in the interview or focus groups. If discomforts become a problem, you may discontinue your participation. This study may include risks that are unknown at this time.

Benefits

It is not likely that you will benefit directly from participation in this study, but the research should help us learn how to share the successes of your school with other schools who may have similar demographics or student populations.

Who Will see my Information?

Your privacy will be protected. Your name will not be used in any report that is published. The discussion will be kept strictly confidential. While your responses are confidentially held by the researchers, please keep in mind there will be other focus group participants present during any comments you make who may or may not share information outside of the focus group, including information that you may feel is sensitive or private. We may be asked to share the research files with the CSU Institutional Review Board for auditing purposes. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of a code number to let Ms. Ernst and Dr. Cooner know who you are. We will not use your name in any of the information we get from this study or in any of the research reports. When the study is finished, we will destroy the list that shows which code number goes with your name.

Information that can identify you individually will not be released to anyone outside the study. Ms. Ernst will, however, use the information collected in her dissertation and other publications. We also may use any information that we get from this study in any way we think is best for publication or education. Any information we use for publication will not identify you individually.

Audio recordings will be deleted after transcription and the completion of research. In case of an emergency, injury, or illness that occurs during this study, I hereby authorize the release of any and all health information to allow for medical care and treatment of my condition.

Participation and Withdrawal

You can choose whether or not to be in this study. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you do not want to answer. There is no penalty if you withdraw from the study and you will not lose any benefits to which you are otherwise entitled.

What if I have Questions?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can

contact the investigator, Susan Ernst (PhD Candidate). If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491- 1553.

Audiotape Permission

I have been told that the discussion will be audio recorded.

I have been told that I can state that I don't want the discussion to be taped and it will not be. I can ask that the tape be turned off at any time.

I agree to be audio taped ____Yes ____No

NAME

____ Yes, I would like to take part in the focus group.

____ No, I would not like to participate in the focus group.

SIGNATURE

DATE

Do you give permission for the researchers to contact you again in the future to follow-up on this study or to participate in new research projects? Please initial next to your choice. YES NO

If YES, Please provide contact information :

Email: _____

Telephone: _____