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COLLECTIVE TEACHER EFFICACY AND EFFECTIVE TITLE I ELIGIBLE SCHOOLS: A MIXED METHODS APPROACH

by

Donald R. Mendenhall

A dissertation submitted in fulfillment
of the requirements for the degree

of

DOCTOR OF PHILOSOPHY

In

Education

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Logan, Utah

2024

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ABSTRACT

Collective Teacher Efficacy and Effective Title I Eligible Schools:
A Mixed Methods Approach

by

Donald R. Mendenhall, Doctor of Philosophy

Utah State University, 2024

Major Professor: Suzanne H. Jones, Ph.D.
Department: School of Teacher Education and Leadership

Students living in poverty have historically scored lower than more affluent peers. However, research suggests that collective teacher efficacy (CTE) may be more strongly associated with student academic success than socioeconomic background. Therefore, this study identifies successful Title I eligible schools that also have high levels of collective teacher efficacy to identify mechanisms that may increase CTE in schools. A mixed methods explanatory sequential design with a case-selection variant research methodology is used to purposefully select two school cases for investigation. As such, this case study finds some of the perceptions of school staff, and the actions and processes used by the school staff members to nurture and sustain collective teacher efficacy in their schools.

(219 pages)

PUBLIC ABSTRACT

Collective Teacher Efficacy and Effective Title I Eligible Schools:
A Mixed Methods Approach

Donald R. Mendenhall

Students living in poverty have historically scored lower than more affluent peers. However, research suggests that collective teacher efficacy (CTE) may be more strongly associated with student academic success than socioeconomic background. Therefore, this study identifies successful Title I eligible schools that also have high levels of collective teacher efficacy to identify methods for increasing CTE in schools. A mixed methods research study model is used to explain how two successful Title I schools were able to achieve academic success and high levels of CTE. The study finds some of the perceptions of school staff, and the actions and processes used by the school staff members to nurture and sustain collective teacher efficacy in their schools.

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I want to express my deepest appreciation to the many people who have supported and encouraged me on this long and difficult journey. I decided to do this program so I could continue to grow and learn. As an educator, I have a strong desire to be a life-long learner. Completing this dissertation is one step in my life-long journey towards accomplishing personal goals and aspirations.

There are many people who have had a positive influence on me and my research interests over the past several years. As such, I want to thank many of my fellow classmates. It has been great to work closely with them on coursework projects and to have the opportunities to share successes and temporary setbacks. I also want to thank all of my professors for introducing me to many theoretical concepts that I have been able to study and apply in my educational leadership work. I also want to thank my professors for helping to shape my research interests into a meaningful research topic. I thank my dissertation committee for their help and support. I want to give special thanks to my committee chair, Dr. Suzanne Jones, and committee member, Dr. LeAnn Putney. They have been extremely helpful and encouraging. They have also contributed greatly to my collective teacher efficacy research by sharing their depth of knowledge in efficacy research and research methods.

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CHAPTER I

INTRODUCTION

Children living in poverty tend to experience many more difficulties with learning and academic success than affluent students (Ford & Grace, 2017). Research suggests that this is due in part to a reduced level of learning opportunities for children living in poverty and may contribute to the learning gap between affluent students and children from low-income homes (Neuman, 2009). Ford and Grace list several factors that are commonly associated with poverty and have been shown to reduce student engagement. For example, children living in poverty often experience heightened levels of stress caused by unstable relationships. They often experience higher rates of illness due to poor nutrition. Children living in low socioeconomic (low-SES) homes are often exposed to lower numbers of vocabulary words which affects their reading comprehension. These children are more prone to apathy and more likely to disengage in learning due to higher rates of financial hardships, hopelessness and depression. Children living in poverty are also exposed to more frequent negative corrections and less praise from family members. These persistent negative messages can influence students' confidence and growth mindset. All these factors influence student learning and a child's self-belief (Ford & Grace, 2017).

As such, student learning in schools that are impacted by poverty has been an issue faced by educational leaders for many years. Grant and Arnold (2015) stated, "Educational inequality has proven to be relatively impervious to current policy efforts to ameliorate it" (p. 363). As such, students who come from impoverished backgrounds tend to perform lower on standardized assessments that measure academic achievement. In 2017, The national NAEP math and reading scores indicate that low-SES students performed on average 31 scale score points lower than high-SES students in reading, and 32 scale score points lower in math (McFarland et al., 2019). Additionally, Hernandez (2011) reported that 22% of children who live in poverty will not graduate from high school.

To help educate children who live in poverty, Title I of the Elementary and Secondary Education Act was established in 1965 by the federal government to provide extra funding to low-income students. Today, schools that have 40% or more of their student enrollment who qualify for free, or reduced lunch are Title I eligible schools and they may receive federal funding to help close the achievement gap between low-SES students and more affluent children (Grant & Arnold, 2015).

Theoretical Framework of the Investigation

Even with the extra support from Title I funding, schools with large populations of low-SES students have not had sustained success in closing the achievement gap between low-SES students and more affluent student populations (Bandura, 1997; Grant & Arnold, 2015). However, there are some examples of educational strategies found in research that suggest that school leaders and educators can influence student learning particularly among students living in poverty. For example, teacher self-efficacy (TSE) and collective teacher efficacy (CTE) are concepts that have been shown to be associated with student academic success even in schools with high numbers of children living in poverty (Bandura, 1997). CTE is a construct developed by Albert Bandura (1989) as part of his social cognitive theory. CTE is comprised of teachers' combined beliefs in each other's abilities as a collective school community to effectively educate their students. Additionally, Bandura (1997) asserts that student demographic characteristics have a greater effect on achievement through altered teacher perceptions than through actual student abilities. Therefore, CTE can influence student achievement through teacher beliefs that in turn mediate the actions, persistence and attention school staff members apply to student achievement.

Many researchers have found significant positive relationships between student academic success and CTE (Bandura, 1997; Goddard, 2001; Goddard et al., 2000; Goddard & Skrla, 2006; Hoy et al., 2002). In fact, some educational researchers suggest that teachers' perceptions of their ability to help students has a greater influence on student achievement than SES (Bandura, 1997; Goddard et al., 2000; Goddard & Skrla, 2006; Hoy et al., 2002). Studies involving CTE have also looked at several areas that impact student learning and schools. For example, studies have looked at the relationship between school leadership theories and CTE showing a significant relationship between the two variables (Calik et al., 2012; Cansoy, 2020; Fancera & Bliss, 2011; Francisco, 2019; Versland & Erickson, 2017). Additional studies have explored other variables related to school leadership such as school goal setting (Goddard, 2001), academic press (Aldridge & Fraser, 2016), and shared leadership (Ross et al., 2004) and found that all of these concepts also have positive significant relationships with CTE.

Rationale for the Investigation

According to research, CTE is a concept that can help school leaders to support student learning for both affluent students and children living in poverty. However, even with research finding relationships between student academic success and CTE, relatively few studies have been designed to explore the effect of CTE on student learning (Goddard et al., 2000; Hoy et al., 2002; Sandoval et al., 2011). As such, researchers suggest that future studies are needed to identify antecedents, or mechanisms that contribute to increased levels of CTE (Belfi et al., 2015; Fancera, 2016; Ross et al., 2004; Zhou, 2019). Researchers also recommend that future studies include looking at the relationship between principal leadership and CTE (Bandura, 1997; Fancera & Bliss, 2011; Nordick et al., 2019). Finally, it is recommended that future research attempts to determine how CTE develops over time (Cocca et al., 2018; Putney & Broughton, 2011; Sorlie & Torsheim, 2011) and how CTE develops in schools (Zhou, 2019).

Future research should not only include quantitative studies to find significant relationships between variables. It should also include mixed methods studies and qualitative studies to provide school leaders with information regarding specific processes of how CTE is developed in school settings over time (Moolenaar et al., 2012; Mosoge et al., 2018; Nordick et al., 2019; Skaalvik & Skaalvik, 2007). The existing literature examining CTE identifies some relationships between CTE and other research variables through quantitative methods. However, CTE research does not provide a sufficient level of information regarding the mechanisms that help build CTE in schools. Nor does the existing research provide sufficient descriptions and details of how schools and those who work in high poverty schools build and sustain CTE.

Mixed methods research can continue to build on the current literature regarding relationships between CTE and mechanism. Additionally, mixed methods research can provide detailed descriptions and perspectives of how CTE is developed in schools. This type of research can help educators to apply findings from mixed methods studies to increase CTE in schools with the goal of increasing student academic achievement. As such, students, teachers and school leaders can benefit from increased CTE by having more confidence and perseverance with supporting learning in schools.

Current research suggests that continued exploration of CTE's relationship with student achievement can help educational leaders and teachers to better support student learning in all schools including Title I schools that serve large populations of low-SES students. CTE research may help identify methods and processes for teachers and school leaders to use to build school cultures that promote rigorous student work. CTE research may also help teachers to persevere while teaching children who struggle to engage in academic work and who live in poverty (Bandura, 1997). Through future studies of collective efficacy, teachers may also help students to build hope and motivation through goal attainment and social support (Bandura, 1997).

Purpose of the Study

The purpose of this study is to identify the level of CTE in effective Title I eligible schools. Furthermore, this study will explore selected cases of academically successful Title I eligible schools to illustrate the sociocultural context, processes, and strategies these schools use to nurture CTE that also result in student achievement. A mixed methods explanatory sequential design will be used along with a case-selection variant of this method (Creswell & Clark, 2018). This mixed methods explanatory sequential study includes two phases.

Phase one involved a quantitative phase to measure the level of CTE and student achievement in Title I eligible schools in order to identify purposeful cases to investigate in the qualitative phase. The information from the first phase served as a method for identifying exemplary cases of Title I eligible schools that also have high levels of CTE. In phase two of the study, qualitative methods were used to explore how those schools nurtured and sustained their level of CTE. The data from both phases was combined to provide an in-depth understanding of the relationship between CTE and achievement in the context of schools (Creswell & Clark, 2018). This type of study is needed to help identify mechanisms that increase CTE in school settings and to provide details regarding how schools nurture and sustain CTE and student achievement (Mosoge et al., 2018; Nordick et al., 2019; Zhou, 2019).

Research Questions

1. What is the level of collective teacher efficacy in high-achieving Title I eligible schools?
2. What is the perception of teaching staff and principals of high-achieving Title I eligible schools regarding the sociocultural context of their school that nurtures and sustains collective teacher efficacy?
3. What are the actions and processes of teaching staff and principals at high-achieving Title I eligible schools that nurture and sustain collective teacher efficacy?

Exploring these research questions can help the researcher identify effective Title I schools that also have high levels of CTE to serve as exemplar cases for exploration. Also, the current study will provide context specific details and explanations of how successful Title I schools build a culture of positive collective efficacy beliefs and how they maintain high levels of CTE.

Summary of the Methodology

This study is an explanatory sequential mixed methods study with a case-selection variant. The explanatory mixed methods case study includes two phases. Phase one was a quantitative phase in which the level of CTE in effective Title I eligible schools was measured along with the school's level of academic success. Purposeful sampling was used to identify successful Title I schools in an intermountain west state of the United States. Participating Title I eligible schools were given the Collective Teacher Efficacy Scale (Goddard et al., 2000) to measure the level of CTE in each school. Academic achievement was operationalized by using state end-of-year assessments in language arts, math and science. The schools' level of CTE and academic achievement was analyzed using descriptive statistics in order to identify exemplar cases of effective Title I eligible schools that also had high levels of CTE.

Phase two of the study was a qualitative phase where the quantitative data assisted the primary researcher to identify schools to investigate. The criteria for case selection from the survey data was schools that reported high levels of CTE as well as high levels of poverty and high academic success. The researcher was interested in identifying how

CTE helped facilitate academic success in Title I eligible schools that serve low-SES students. By exploring the sociocultural context of these exemplary schools, the researcher was able to identify the aspects of the schools' sociocultural context along with the actions and processes school staff members used to nurture and sustain CTE.

Semi-structured interviews were used to collect qualitative data to answer the research questions, "What are the perceptions of teaching staff and principals of high-achieving Title I eligible schools regarding the sociocultural context of their schools that nurtures and sustains collective teacher efficacy?" and "What are the actions and processes of teaching staff and principals at high-achieving Title I eligible schools that nurture and sustain collective teacher efficacy?" The data was coded and organized into major themes. The themes were then used in combination with the quantitative data to help explain how these select schools developed and maintained high levels of CTE.

Limitations

Because this study incorporates both quantitative and qualitative methods, the limitations and quality of the research will be discussed with both methods in mind. In terms of the quantitative phase, the most significant limitation of this study lies in the results not being externally valid because of the purposeful sample, which is not a random sample of the general population. Therefore, the results are not directly transferable to other populations. Concerning the qualitative results, the limitations are associated with the researcher being able to collect accurate accounts and perspectives from the participants and avoiding bias. Miles et al. (2020) refer to research bias as researcher effects. Miles et al. identify two types of researcher effects: bias stemming from the researcher's effect on the participants, and researcher bias because of their experience with participants at the site.

It is possible that case study participants may change their behavior, report inaccurate data to the researcher, or refuse to give any information at all due to the fact that an unknown person is investigating the site. Other times, the researcher may report inaccurate bias information because the researcher has been influenced by the participants to accept the perceived culture and beliefs even if those perceptions are biased or inaccurate (Miles et al., 2020). Regardless of the type of bias, researchers must be cautious when basing findings solely on participants' perceptions. By combining quantitative and qualitative data, by utilizing methods to avoid bias due to researcher effects such as including deviants' or dissidents' perspectives, by using other data collection methods (i.e., member checking, and peer review) to triangulate the data, and by investigating outliers' claims, the qualitative findings should be strengthened (Miles et al., 2020).

Positionality

As the primary researcher, I have worked for nearly 26 years in public education. All those years have been working in schools in the same school district in the intermountain west of the U.S. Nearly 23 of those 26 years have been working in Title I schools. I have also worked in school administration for nearly 18 years including 10 years as a school principal. Furthermore, I have studied many aspects of education and school reform through university programs and university degree completions including a bachelor's degree in technology education (i.e., pre-engineering, applied physics, CTE courses, etc.), a master's degree in curriculum and instruction, a state administrative licensure program completion, and the completion of this PhD program in educational leadership.

As such, I have extensive knowledge regarding school leadership theories, teacher development and collaboration. I also have significant knowledge regarding curriculum development, teacher development and instructional strategies. These life experiences certainly have an influence on how the qualitative data was analyzed and how taxonomies and themes were developed. However, to report valid results, findings were triangulated using member checking and peer reviews to report as accurate data as possible.

CHAPTER II

REVIEW OF RELATED LITERATURE

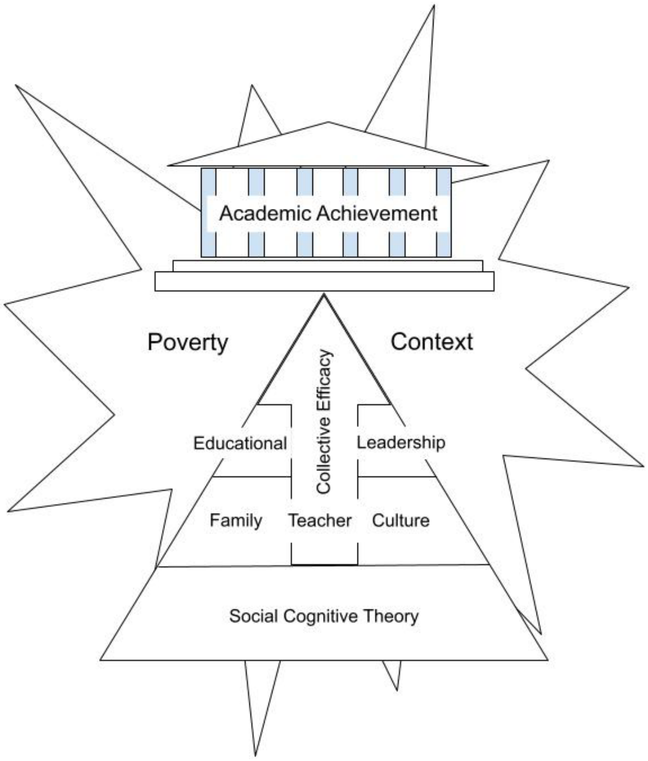
Students who live in poverty struggle to find academic success. They suffer from higher rates of illness, and depression, which has been associated with higher levels of apathy and a lack of engagement in school (Ford & Grace, 2017). These heightened difficulties often lead to lower scores on national assessments (McFarland et al., 2019), and lead to nearly one out of every four children living in poverty dropping out of high school (Hernandez, 2011). This is a significant issue for teachers, and educational leaders who work to help these students.

Educational leaders and researchers have found some evidence that CTE can help teachers to persevere in holding high expectations for challenging students (Bandura, 1997). Furthermore, research has found some evidence that CTE can help students who live in poverty to have academic success (Goddard et al., 2000). Therefore, this literature review will describe the theoretical foundations of CTE, which is based on social cognitive theory. A review of several concepts relating to CTE will also be explored including an immerging theory associated with CTE.

Further, reported research variables and correlates from studies that have a potential for strengthening CTE in schools will be reviewed. These variables have been categorized as family related variables, teacher related variables, school sociocultural context related variables and educational leadership variables. Bandura (1997) has found evidence suggesting that educational leadership has a significant relationship with establishing a school culture. Bandura also suggests that by establishing a school culture, school leadership can have a significant effect on CTE. Therefore, the literature review will highlight some of the research that shows the relationship between principals and CTE. Finally, the primary researcher will report the findings on how CTE influences student academic achievement. To provide additional clarity regarding the structure of this review, a graphic visual representation of the literature's structure has been added (see Figure 1).

Figure 1

Graphic Representation of the Literature Review


Academic Achievement
Poverty
Context
Collective Efficacy
Educational
Leadership
Family
Teacher
Culture
Social Cognitive Theory

As depicted in Figure 1, this review will start with a wide description of social cognitive theory. Next, the focus of the research will begin to narrow by reviewing studies associated with many different research variables associated with CTE.

Specifically, the variables have been categorized as family related variables, teacher related variables, and school culture/sociocultural context variables. Next, research that describes the effect of leadership on student achievement and CTE will be described. The scope and focus of the review will then continue to narrow to explore the research that describes the relationship between CTE and academic achievement. Finally, the central poverty culture element in Figure 1 represents an overarching inclusionary context of exploring the research with the impact of poverty in mind. This economically disadvantaged focus, or context has significant meaning not just for those who live in poverty. It also provides insight regarding potential mechanisms for increasing CTE and academic achievement for all students.

Social Cognitive Theory

Albert Bandura developed social cognitive theory in the 1960s – 1980s (Pajares, 2002). Some of Bandura’s early studies were focused on social learning; specifically looking at observational and vicarious influences on human learning. However, it was not until Bandura included the concept of self-beliefs that social cognitive theory was fully developed (Pajares, 2002).

Human Agency

Social cognitive theory emphasizes human agency and several related constructs that allow humans to have influence over their lives (Bandura, 1997). The theory also combines how different internal and external forces influence our choices for good or bad. Some of the influences that Bandura (1997) recognized as effecting our choices include motivation, efficacy beliefs, the physical environment, and social interactions with others. Bandura modeled these influential factors in what he called triadic reciprocal causation (Bandura, 1989, 1997; Pajares, 2002). The model identifies three main sources of mental processes that interact with agency. Those factors, or processes originate from behavior, internal personal, and environmental interactions (Bandura, 1997).

Even though human choice and action are influenced by many factors, Bandura emphasized the fact that humans can have influence on the outcomes, goals and level of drive in their life decisions. This influence he described as human agency. Bandura (1997) further explained that agency consists of intentional acts that exert determinative influence. Furthermore, Bandura (1997) stated,

> …people analyze the situations that confront them, consider alternative courses of action, judge their abilities to carry them out successfully, and estimate the results the actions are likely to produce. They act on their judgements, later reflect on how well their thoughts have served them in managing the events at hand, and change their thinking and strategies accordingly. (p. 5)

Bandura (2001) also described some core features of human agency. Primarily he identified intentionality, forethought, self-reactiveness and self-reflectiveness as cognitive processes that comprise agency. For example, intentional thought allows for final decision-making and planning even when environmental incentives influence choices and motivation. Forethought allows humans to predict future outcomes, which can provide the ability to see different options. Self-reactiveness relates to our ability to control feelings and motivation that lead to choices and actions. Self-reactiveness also relates to our choices as compared to our moral belief system. Finally, self-reflectiveness allows humans to analyze past decisions to make better future decisions. Through these mental processes, humans can make choices through agency (Bandura, 1989, 1997, 2001).

Self-Efficacy

Human agency, as described by Bandura through his social cognitive theory is exercised through self-efficacy (1989, 1994, 1997, 2002). Self-efficacy is the level of belief that someone has in their ability to successfully accomplish specific tasks (Bandura, 1997). Efficacy beliefs influence choices for good or bad and help to determine the outcomes of those choices. When someone has a high level of efficacy they will persevere longer in the face of obstacles, they will be more likely to try new tasks, and they will be more likely to succeed (Bandura, 1997). Bandura (1997) further states,

> [efficacy] beliefs influence the courses of action people choose to pursue, how much effort they put forth in given endeavors, how long they will persevere in the face of obstacles and failures, their resilience to adversity, whether their thought patterns are selfhindering or self-aiding, how much stress and depression they experience in coping with taxing environmental demands, and the level of accomplishments they realize. (p. 3)

Even though self-efficacy has been shown to have a strong influence on decisions and outcomes, self-efficacy is task specific, and the level of efficacy for a task is not fixed (Bandura, 1997). For example, someone who is confident in their ability to sing might not have a high level of efficacy for solving math problems. Furthermore, efficacy can change over time. For example, if someone has high efficacy, but then they experience multiple failures in a short time span their level of efficacy for the task would likely decrease.

There are four main sources of self-efficacy. These four areas are mastery experiences, vicarious experiences, social persuasion and affective processes or physiological states (Bandura, 1989, 1994; Pajares, 2002). Mastery experience occurs when someone perceives that they have successfully completed a specific task. Over time, the more success a person has with that type of task, the more confidence that person will feel about their ability to perform that task. When people see others performing tasks successfully, this also can increase self-efficacy with that task. This is known as vicarious experience and is seen in education through modeling. Another source of self-efficacy is social persuasion. Social persuasion occurs through verbal praise and encouragement from others. Bandura's (1989) final source of self-efficacy is affective processes or physiological states. This source of self-efficacy relates to how someone feels both physically and emotionally at the time the task is performed. If someone has a high energy level and they feel happy they will likely have increased levels of self-efficacy.

Collective Efficacy and Collective Teacher Efficacy

Efficacy beliefs are not only applicable to individual motivation and perceptions. When efficacy beliefs are applied to a group of people, this is known as collective efficacy. Collective efficacy is the group's combined belief in their ability to reach specific goals through collective action (Bandura, 2002; Pajares, 2002). Bandura (1997) further defined perceived collective efficacy as "a group's shared beliefs in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments" (p. 477). Bandura (2002) further states that, "perceived collective efficacy is not simply the sum of the efficacy beliefs of individual members. Rather, it is an emergent group-level property that embodies the coordinative and interactive dynamics of group functioning” (p. 271). Therefore, collective efficacy has the potential to determine a group’s success in attaining their combined goals through the group’s combined perceptions of the group’s abilities.

CTE is a construct that is based on the individual perceptions of the teachers in a school regarding their own and their peers’ abilities to provide effective instruction and to help students learn (Bandura, 1997). Therefore, CTE is a school level construct that measures the collective beliefs of a school’s staff regarding their ability to ensure student learning. Like self-efficacy, CTE has the same four sources (mastery experience, social persuasion, vicarious experience and physiological states) that help build efficacy beliefs in a collective school staff. However, CTE is more dependent on the social make-up and social interactions between school leaders, teachers, other school staff, students, and parents than self-efficacy. Therefore, to influence CTE, school leaders must analyze and adjust schools’ social and organizational structures when seeking to increase CTE (Bandura, 1997).

Bandura also provides some characteristics of schools with high CTE. These schools hold high expectations for all students, and teachers accept responsibility for student learning. These teachers also set challenging goals for, and reward student academic effort. They help students master concepts. Teachers in these schools also provide frequent feedback to students on their work. Highly efficacious schools allow students to work in groups to support each other in their learning, and classroom behavior is managed effectively and quickly. Efficacious schools also have leaders who focus on student academics and teacher support with instructional effort (Bandura, 1997).

Collective Teacher Efficacy (Family, Teacher, and Cultural Influences)

Several research variables have been studied in relationship to CTE. Furthermore, most of the studies reviewed in this paper have been organized into four categories based on the types of research variables found in those studies. The four categories include family focused variables, teacher focused variables, school culture focused variables and school principal focused variables. Research involving the first three variables and their influence on CTE will be discussed in this section. The relationship between school leadership and CTE will be explored in a subsequent section of this paper.

Family Influence on CTE

The early years of a child's home life can make a substantial difference to their future educational success. Some of the findings regarding family influence on student learning show that children coming from low-income families struggle to succeed academically (Egalite, 2016; Neuman, 2009). For example, Egalite claims that "by age three, children whose parents receive public assistance hear less than a third of the words encountered by their higher-income peers" (p.72). For example, children living in low-income settings have less adult role models who read at home, they generally live in areas where there is limited access to books in stores and libraries (Neuman, 2009). Furthermore, libraries in high poverty areas often have limited hours that make it difficult for families to go to libraries together. In poverty-stricken neighborhoods, community signs are often damaged with graffiti, or broken, illegible signs (Neuman, 2009). These factors generally restrict children's early exposure to reading.

Another family factor that tends to have a negative influence on a child's academic success is the disintegration of traditional family structures. Egalite (2016) claims that when families have children born in non-marital births, nearly 56% of fathers will leave the family before a child reaches the age of three years old. Research has shown that in these families where the father is absent, there is an increased likelihood that boys will exhibit greater levels of antisocial behavior (Egalite, 2016). Similarly, single parent families tend to be associated with a greater percentage of children falling behind other children academically through an increased number of school suspensions and through a greater likelihood of their children repeating grade levels in school (Egalite, 2016). Finally, in cases where fathers are incarcerated, there is a greater risk of the family experiencing homelessness, which can lead to difficulties for children in receiving social and medical services (Egalite, 2016).

Some family characteristics that are associated with increased levels of learning include the parent level of education and higher levels of family income (Egalite, 2016). Increased levels of parent education tend to be associated with improved learning. Highly educated parents tend to select better schools that generally have better teachers. Children from these families are more likely to have increased exposure to vocabulary and communication skills (Egalite, 2016). Families that are more affluent support student learning in many other ways. Children in these homes experience rich supportive social networks where children are expected to be successful in school. These social influences also help children to navigate school norms and expectations that lead to academic success (Egalite, 2016).

Bandura (1997) also lists ways that parents contribute to their children's education. He says that effective parents prepare their children for education by placing a value on education and by conveying a belief in their child's scholastic ability. Effective parents also help their children with homework and set expectations for the completion of homework. They reward and recognize their children's successes. Finally, Bandura says that these parents also seek to be involved in school-related activities and school governance opportunities.

Parents of low-income families often face challenges in creating a similar supportive environment for their children. Challenges for these families often include limited time, limited money and increased stress. As such, Egalite (2016) states,

> Parents who are struggling economically simple don't have the time or the wherewithal to check homework, drive children to summer camp, organize museum trips, or help their kids plan for college. Working multiple jobs or inconvenient shifts makes it hard to dedicate time for family dinners, enforce a consistent bedtime, read to infants and toddlers, or invest in music lessons or sports clubs. (p. 73)

These activities are part of the culture, or social network that supports student learning. However, poverty is likely to impede families from accessing these activities. These factors help to explain some of the learning gap seen between affluent students and children living in poverty.

With the known struggles for parents of at-risk children, some school leaders have explored ways to effectively involve parents in the school process. However, schools typically have not had sustained success in providing programs, support and experiences to help families with increasing academic success (Neuman, 2009). In fact, Neuman states that if schools continue to run programs for children at risk the way they current do, then “schools will fail to significantly close the gap because so many children come from highly vulnerable and dysfunctional environments before they ever reach the school house” (p.x). Therefore, continued research that provides detailed information on how successful schools increase and maintain high academic achievement for at-risk students is needed.

Research regarding the influence of family factors on academics is available. For example, a preliminary search of multiple databases (i.e., Education Source, ERIC, and Psychology and Behavior Sciences Collection) using the Boolean combination of search terms for “academic achievement” and “family environment” and searching for peer reviewed articles since 2010 yielded 772 articles. Using the same search criteria but changing the search terms to “academic achievement” and “parent engagement” produced an additional 55 articles.

Even though there is significant research that explores the relationship between student achievement and family factors, the research looking at family factors and CTE is sparse. For example, in several searches for articles using “Education Source,” “ERIC” and “Psychology and Behavior Sciences Collection” databases, and searching for peer reviewed articles since 2010, and while using the following paired Boolean phrases of “family involvement” and “collective efficacy,” “family environment” and “collective efficacy,” “family influence” and “collective efficacy,” “parenting” and “collective efficacy,” “family structure” and “collective efficacy,” and “parent engagement” and “collective efficacy,” only 36 total articles were found with only one of those articles being relevant to this review by relating to school, or education. The one relevant article from this search examines how low-income, immigrant and African American women develop social capital, and self- and collective efficacy through volunteering in schools (Vidal de Haymes et al., 2019). The study compared the pre- and post-survey results of 469 women parent volunteers in low-income community schools. The survey used in the study measured aspects of the social capital, and self- and collective efficacy in the parent volunteers. The results of this study found that for Latina immigrants and African American women, there was a significant gain in both social capital and efficacy associated with volunteering in schools (Vidal de Haymes et al., 2019). Even though this study does not directly link parent collective efficacy to student academic achievement. It does provide some evidence that when parents volunteer in schools, they build confidence in participating with their child's education, and they develop social structures to support student academic success.

A review of the research regarding CTE does provide a couple of additional articles that have research variables that are related to a family's influence on CTE. The research variables in these two articles are external control and student absenteeism. External control is defined as teachers' perceptions of their limitations to successfully teach due to low student ability and due to a student's home environment (Skaalvik & Skaalvik, 2007). In the study conducted by Skaalvik and Skaalvik, 246 teachers from Norway were surveyed to determine the relationships between many variables. Two of those research variables were CTE and external control. Through structural equation modeling, the researchers found that external control likely has a significant negative influence ($r = -.27$) on CTE. This result suggests that CTE is lower when teachers perceive that the student's home environment creates learning obstacles for their students.

The study that examined student attendance rates as a potential predictor of CTE was conducted by Fancera (2016). In this study, 60 New Jersey high schools were identified as a convenience sample. Teachers and staff in these schools were surveyed to help determine the relationship between student attendance rates and CTE. The researchers found that there was a significant positive correlation between student attendance rates and CTE ($r = .63$, $p < .01$). However, while using linear regression analysis to determine if student attendance rates predict CTE, the study found no significant predictive relationship.

These studies identify the importance of family engagement and other factors that are mutable by families and that have potential to influence student academic achievement through CTE. However, there is limited research that helps to clarify the impact of family factors on CTE and poses a possible gap in the research literature.

Teacher Influence on CTE

Teachers have a direct influence on student learning and on a school's level of CTE. This occurs through teachers' beliefs in their abilities to help all students (Bandura, 1997). Teachers with high levels of teacher self-efficacy view difficult students as capable learners. These teachers are more willing to try new teaching strategies, and to exert more effort in order to help challenging students to learn (Bandura, 1997). The literature exploring teacher factors that are related to CTE includes additional evidence suggesting that teacher beliefs influence CTE. Teacher-related research variables found in the literature can be categorized into two main areas: teacher learning, and teacher beliefs.

A few of the studies investigated teacher learning by studying the influence of teacher advanced degrees, teacher professional development, and the number of years a teacher has taught. These variables were also studied to determine their influence on a school's level of CTE (Cocca et al., 2018; Fancera, 2016; Goddard & Skrla, 2006; Ross et al., 2004). These researchers found significant differences in self- and collective efficacy between teachers based on the number of years of teaching experience (Cocca et al., 2018; Goddard & Skrla, 2006). The literature also suggests that CTE increases in schools where more teachers have advanced degrees (Fancera, 2016), and where teachers have increased professional development opportunities (Ross et al., 2004). These findings support Bandura's (1994) concept that mastery experience is one of four sources of efficacy. Mastery experience relates to an individual's successful completion of tasks. Therefore, an increase in teachers' teaching experience and increased learning are associated with a teacher's mastery experience.

Another area of teacher influence on CTE is related to teachers' beliefs of their teaching capabilities. The literature that highlights variables related to teacher's confidence in teaching ability includes two different variables under examination within each study. For example, McCoach and Colbert (2010) conducted a study to measure CTE based on teachers' confidence to successfully teach students based on a two-factor model of CTE. The model consisted of analysis of teaching tasks, and analysis of teaching competence. Analysis of teaching task relates to teachers' perceptions of barriers, difficulties, and available resources to help teachers perceive their likelihood of success. Analysis of teaching competence relates to teachers' perceptions of their ability to teach children; specifically, teachers' ability to teach students who present challenges in the classroom. McCoach and Colbert found a significant relationship between a student's SES and the teachers' perceptions and personal beliefs of both teaching task and teaching competence. In other words, the level of student social economic status had a direct correlation to teachers' self-belief regarding teaching, or their CTE. This finding has specific ramifications for teachers who work with children below the poverty rate.

Tschannen-Moran and Barr (2004) conducted a study that examined teacher influence on CTE and student learning. In this study, the researchers developed a new measurement scale to measure CTE using two concepts related to CTE. The concepts were collective efficacy for instruction and collective efficacy for discipline. This study investigated the relationship between CTE and student achievement. However, CTE was measured based on teachers' beliefs in the school staff members' abilities to both successfully provide effective instruction and their belief in staff members' ability to successfully address student behavior. The study took place in 66 Virginia middle schools. The researchers found a significant relationship between collective efficacy for instruction and student achievement. They also found that there was a similar significant relationship between collective efficacy for discipline and achievement (Tschannen-Moran & Barr, 2004). These two studies add to the research that suggests that CTE has a positive impact on student achievement.

One final study included in this review of how CTE and teacher factors relate to each other is a study conducted by Skaalvik and Skaalvik (2007). Skaalvik and Skaalvik's study included several research variables associated with teachers' beliefs. For example, external control was a concept studied that measured teachers' perceptions of difficulties in educating children that are out of the teachers' control. The study also had a construct that measured teacher burnout based on factors that created emotional strain for teachers. The researchers (Skaalvik & Skaalvik, 2007) found that external control was negatively associated with CTE. In other words, when school teaching staff felt like there were factors out of their control that limited their ability to successfully teach students, the teachers also had a lower level of CTE. Another finding reported in this study was that there was less emotional strain and teacher burnout for school teaching staff when CTE was at a high level. Therefore, CTE is not only associated with increased student achievement, it also has a correlation with teacher mental wellbeing and teachers' perceived success based on how they interpret external control.

Cultural/Sociocultural Influence on CTE

Collective teacher efficacy is a social construct that influences the actions, beliefs and norms of the people who make up a school culture. School culture has been studied by researchers to determine what aspects of the culture are potential predictors and mechanisms of CTE. These cultural beliefs and actions have been shown to be associated with student academic achievement and the quality of a school's working environment through the interactions between the people that make up a school's social setting. As such, CTE is associated with healthy emotional being, strong social networks, effective collaboration, and job satisfaction in schools (Aldridge & Frazer, 2016; Belfi et al., 2015;

Devos et al., 2012; Goddard & Skrla, 2006; Hoy et al., 2002; Moolenaar et al., 2012; Ross et al., 2004; Skaalvik & Skaalvik, 2007).

Social networks make up the school social working environment for educators and includes the social interactions among those who work at the school. Furthermore, social networks include the social working environment and the social context for school employees (Devos et al., 2012). In a study in which social networks were classified as either mastery-goal oriented, or performance-goal oriented, Devos et al. sought to find the relationship between the two types of social networks and CTE. The study utilized a sample of 110 beginning teachers in Belgium to determine how new teachers' CTE developed in each type of network, and to see how the networks contributed to teacher negative feelings (i.e., depression & burn-out). Associated with these social networks, teachers' feelings were shown to be influenced through overcrowded classrooms, working with unmotivated students, or criticism. On the other hand, support and praise from supervisors and peers were shown to build positive teacher feelings (Devos et at., 2012).

The two types of social networks look at different ways people collaborate and develop relationships with others in the school. In mastery-goal oriented networks, teachers are encouraged to master tasks through trial and error. Work and effort are valued in this type of social network. This type of network allows teachers to develop important skills and to grow professionally over time. In mastery-goal oriented networks, teachers are not afraid of making mistakes, or asking for help (Devos et al., 2012). However, with performance-goal orientation, teachers are recognized for their skills and abilities instead of their potential for growth. In this type of culture, effort and struggle are seen as weakness. Teachers who work in this environment fear failure. Therefore, teachers avoid innovation to avoid looking unsuccessful, or unprepared. In Devos et al.'s study, it was found that mastery-goal oriented networks were positively associated with CTE and negatively associated with teacher depression. Furthermore, performance-goal oriented networks had the opposite effect (i.e., a negative relationship with CTE and a positive relationship with depression). Therefore, growth mindset cultural networks support healthy work environments and promote increased levels of CTE.

Moolenaar et al. (2012) studied some different characteristics of social networks. The aspects of social networks studied by Moolenaar et al. were both the density and centralization of social networks. The density of social networks is a measure of the number of social connections within that network. Centralization of social networks refers to the control of shared information and resources in the network because of few individuals who have high numbers of social connections in the network. For example, highly centralized social networks describe a network with few individuals who control the distribution of information (Moolenaar et al., 2012). Highly centralized social settings restrict social networks' flexibility. However, highly centralized networks facilitate the flow of technical knowledge and information. Furthermore, research suggests that strong social networks build social capital (Moolenaar et al., 2012). Social capital is valuable for social networks because it provides support, knowledge, experience, and resources for members of the social network. Additionally, social capital can be defined as, "teachers' collective perceptions of the social relationships among students, parents and teachers within the school environment and the social resources that are transmitted through these relationships, such as trust, norms, support and values" (Belfi et al., 2015, p. 34). Thus, Moolenaar et al. posited that increased density of social networks in the form of teacher collaboration would be associated with increased social capital and would lead to increased levels of CTE.

Moolenaar et al.'s (2012) study included findings from 53 elementary schools in the Netherlands. The results of this study indicate that both the density and the centralization of social networks were associated with increased levels of CTE in schools (Moolenaar et al., 2012). Likewise, in a closely related study involving 183 schools in Belgium, Belfi et al. (2015) looked specifically at the relationship between school-based social capital and its relationship to CTE. They also found that social capital had a significant correlation with CTE. These findings are significant for educators because they suggest that by strengthening teacher collaboration and increasing social capital, CTE can also be increased.

Social capital is a concept that describes the resources and support that social networks provide for the members of that society. Academic press is based on the common academic goals of a school, the social norms and peer pressure that is created from members of the culture to increase student learning (Hoy et al., 2002). Several concepts researched by scholars are related to both of these social constructs. For example, educational researchers have studied variables that describe a school's focus on shared goals, teacher collaboration and PD, and actions that align with a school's needs. All of these variables can theoretically be associated with building social capital and increasing academic press. Ross et al. (2004) conducted a study that included many of these variables combined into a latent variable they called school cohesion and support. In their correlational study involving 2,170 Canadian teachers, they found that there was a positive and significant correlation between CTE and school cohesion and support (Ross et al., 2004).

The review of the literature identified normative, or academic press, which was mentioned earlier in this review, as another concept that is related to school culture and has been found to be associated with CTE. Academic press in a school occurs when there are clear common goals for student success, and there are common norms that influence teacher actions and attitudes (Goddard, 2001; Goddard & Goddard, 2001; Goddard, Hoy, & Hoy, 2004). Normative press is also usually associated with high levels of CTE (Sorlie & Torsheim, 2011). Goddard (2001) described normative press as “an organizational characteristic formed from the interactions of teacher perceptions about group teaching competence” (p. 469). Furthermore, through expected collective norms, normative press often forms peer pressure among teachers to align with the school’s goals. Normative press becomes academic press when teachers interact with and encourage each other to align themselves with the school’s process to improve student achievement (Goddard & Goddard, 2001). Academic press is a form of social persuasion and a form of vicarious experience as teachers encourage each other and observe modeled behavior from one another (Hoy et al., 2002; Skaalvik & Skaalvik, 2007; Zhou, 2019). Both vicarious experience and social persuasion are concepts that Bandura (1989) identified as methods for developing CTE. Academic press can be applied in schools when principals help to form and strengthen common goals and norms focused on student learning. Even though several researchers mentioned academic press as a theoretical concept for strengthening CTE in schools, only Hoy et al. (2002) used academic press as a research variable. Hoy et al. found a significant but indirect relationship between academic press and math achievement. They also found a direct relationship between academic press and CTE.

Other aspects of schools' culture involve the school climate, teacher wellbeing and teacher burnout. Aldridge and Frazer (2016) studied different school climate factors such as job satisfaction, peer support, work pressure, resource adequacy, staff freedom and goal consensus. These school factors were used as dependent variables to determine the correlation with teacher self-efficacy as the independent variable. The findings indicated that goal consensus, staff peer support, and job satisfaction had a significant relationship with teacher self-efficacy (Aldridge & Frazer, 2016).

Teacher burnout has been described as emotional exhaustion and loss of social connections that reduce a person's effectiveness due to prolonged job-related stress (Skaalvik & Skaalvik, 2007). Teachers experience occupational stress and burnout due to student discipline problems, heavy workloads and many other school-related demands. Skaalvik and Skaalvik believe that the association between teachers' belief in their abilities to manage workplace challenges, CTE and teacher burnout are related. As such, Skaalvik and Skaalvik conducted a study involving 12 elementary schools in Norway where they found that teacher burnout had a negative relationship with CTE.

Ethnic make-up of students and teachers has also been studied in relation to their influence on CTE. Goddard and Skrla (2006) asked the following research questions associated with schools' racial populations in a research study.

- To what extent do teachers' race/ethnicity influence their collective efficacy beliefs?
- To what extent are the differences in schools' CTE explained by the racial and social-economic status composition of a student body?

This study included 60,000 students with diverse ethnic backgrounds (i.e., 53% Hispanic student population & 35% Black student population). Another 1,981 teachers with diverse ethnicities (i.e., 30% teachers of color) also participated. This study reported two interesting and significant findings related to racial teacher populations. First, Goddard and Skrla (2006) found that Hispanic and African-America teachers reported higher levels of CTE while working with diverse student populations than non-minority teachers did. Second, it was reported that in this study's teacher sample, a school's proportion of Hispanic teachers was positively associated with the school's level of CTE. The authors of this study provided readers a possible explanation for the findings. For example, Goddard and Skrla included some findings from follow-up qualitative information from the district's assistant superintendent stating that her explanation for the findings were due partially to the Hispanic teachers' similar language and cultural understanding of their students. Therefore, this study suggests that cultural understanding and knowledge can also influence teachers' belief in their teaching abilities and success while working with culturally diverse students.

New Theoretical Studies that Combine Social Cognitive Theory's Collective Efficacy and Sociocultural Theory

Lev Vygotsky studied how social interactions through cultural historical tools lead to human learning and development. His theory is known as sociocultural theory. Some of the most recent studies involving CTE combine aspects of social cognitive efficacy theory and sociocultural theory to describe how collective efficacy is developed over time through social interactions that occur in classrooms. Before looking at these new studies, a short review of essential aspects of sociocultural theory will be outlined below to provide greater understanding of the new studies.

Vygotsky focused on the social and historical context of development, and he viewed learning as the tool that led to increased development (Alves, 2014; Glassman, 1994; John-Steiner, & Mahn, 1996; Liu & Matthews, 2005). Human development through the sociocultural theory is based on social sources of knowledge, and semiotic mediation in a historical context (John-Steiner & Mahn, 1996; Liu & Matthews, 2005; Wink & Putney, 2002). Examples of social sources of knowledge and semiotic mediation are seen when children learn from interactions with adults and knowledgeable others by means of psychological tools (i.e., language and other semiotic tools). Semiotic tools include symbolic systems such as language, number systems, braille, sign language, art, etc. Psychological tools have been developed socially throughout time in a historical context. Thus, sociocultural theory emphasizes the importance of these tools as mediators of learning and development (John-Steiner & Mahn, 1996; Wink & Putney, 2002).

Sociocultural theory asserts that before development occurs, the process of internalization of learning also has to occur. Internalization is mediated through the use of psychological tools. Language is one of the primary psychological tools that aids in the process of internalization by way of restructuring conceptual mental models (John-

Steiner & Mahn, 1996; Jones & Putney 2019; Liu & Matthews, 2005; Putney & Broughton, 2010; Wink & Putney, 2002). Vygotsky (1978) asserts that this developmental process only occurs when children interact with peers using language. When language is used between children, they are able to coconstruct knowledge through their interactions, which leads to development. Wink and Putney further explain that the developmental process includes the use of social interactions that occur both directly with people and with cultural historical tools like written texts, and other semiotic tools.

Social interactions are not only important for individual development, but these interactions contribute to a greater level of learning in the collective development of a class. When these social exchanges occur and lead to greater collective development this is a concept known as collective subjectivity (Jones & Putney, 2019; Liu & Matthews, 2005; Putney & Broughton, 2011). Collective subjectivity occurs when the sum of the collective learning and development is greater than the sum of the individual learning due to the interactions that occur and spark new additional ideas (Jones & Putney, 2019; Liu & Matthews, 2005).

Another aspect of the sociocultural theory is spontaneous and scientific concepts. Spontaneous concepts are learned through unstructured events in everyday life and they are often concrete ideas while scientific concepts are learned in a structured manner with interconnecting ideas and are often related to abstract ideas (Alves, 2014; Glassman, 1994; John-Steiner & Mahn, 1996; Wink & Putney, 2002). An example of learning through spontaneous concepts is the learning of a primary language while the learning of a foreign language represents a scientific concept (Alves, 2014).

Spontaneous concepts and scientific concepts are also related to Vygotsky's concept of the zone of proximal development (Alves, 2014; Vygotsky, 1978; Wink & Putney, 2002). Vygotsky defines the zone of proximal development as, "the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 33). Children are exposed to spontaneous concepts everyday of their lives. These experiences work to prepare children to make cognitive connections to more challenging scientific concepts that they experience in a school setting. In this way, spontaneous concepts occur when the child is functioning in independent problem solving. Spontaneous concepts prepare children to learn scientific concepts to be developed in the zone of proximal development in structured school settings (Alves, 2014; John-Steiner & Mahn, 1996; Wink & Putney, 2002). Furthermore, according to Vygotsky, good teaching should occur just in front of spontaneous development or in the zone of proximal development and will lead to actual development.

The theoretical concepts included in the sociocultural theory can be used to help describe the processes that contribute to classroom learning. For example, collective subjectivity helps educators understand that learning is accelerated when learning occurs in social contexts. Furthermore, the learning of scientific concepts is likewise accelerated in the zone of proximal development with the support of more knowledgeable others. Jones and Putney (2016) have developed a new theoretical construct that combines both social cognitive theory's collective efficacy and some of sociocultural theory's concepts just described into what they call collective classroom efficacy (CCE). This construct explores how efficacy is developed over time in a classroom setting through Vygotskian concepts of social interactions, nurturing a positive classroom environment, providing social support for learning perseverance through student peers, encouraging risk-taking for classroom academic goal attainment, reflective interpersonal communication, and the teacher acting as a community organizer who helps students to build relationships and to provide student leadership opportunities (Jones & Putney, 2016, 2019; Putney & Broughton, 2010, 2011).

These studies investigating school cultural factors provide evidence suggesting that the school climate and culture has an impact on teacher beliefs in the form of CTE. School leaders can use this information to strengthen teachers' confidence and better support student learning. Furthermore, some of the research that describes how to develop collective efficacy in classrooms and schools can provide detailed descriptions of the processes and mechanisms for developing efficacy in schools.

Educational Leadership and Collective Teacher Efficacy

School leadership has been researched in order to determine the influence that principals have on student academic success. Recent studies have claimed that a school principal and the leadership actions of principals have a large effect on student learning (Bush & Glover, 2014; Grissom et al., 2021; Leithwood et al., 2010; Thornton et al., 2020). For example, some researchers have found that there are indirect positive relationships between school leadership and student achievement (Leithwood et al., 2010;

Thornton et al., 2020). These studies have discovered the following mediators between leadership and achievement: academic press, disciplinary climate, CTE, trust between colleagues, access to adult support at home for schoolwork, and access to a computer at home (Leithwood et al., 2010; Thornton et al., 2020). These researchers also suggest specific principal actions that can be utilized to increase the prevalence of these mediators. Some of those actions include a focus on strong relationships, common goal setting, supportive leadership, supporting professional development to increase teacher capacity, utilizing observation and feedback for teachers, helping teachers to effectively analyze student data, improving school climate, using effective hiring practices, supporting teacher collaboration, and building a shared vision, etc. (Bush & Glover, 2014; Calik et al., 2012; Cansoy, 2020; Demir, 2008; Francisco, 2019; Grissom et al., 2021; Leithwood et al., 2010; Thornton et al., 2020). These theoretical concepts have been researched and show a positive association with increased student achievement.

Additional evidence regarding the importance of principal leadership has been gathered by Grissom et al. (2021). These researchers conducted a systematic synthesis of 219 school leadership research studies to determine the effect that school leadership has on student learning. Some of the findings reported in their study suggest that the difference between a principal ranked at the 25th percentile as compared to a principal ranked at the 75th percentile can increase annual student learning by nearly three months. Furthermore, Grissom et al. report that principals have nearly the same effect on student learning as teachers. However, when you consider the increased influence of a principal due to the number of classrooms, teachers and students affected by school principals the influence is much greater than teachers (Grissom et al., 2021). Finally, Grissom et al. claim that “It is difficult to envision an investment with a higher ceiling on its’ potential return than a successful effort to improve principal leadership” (p. xiv).

Nonetheless, considering the large effect that school principals have on student learning, there are some concerning school leadership trends for high-poverty schools. For example, research has shown that principal turnover is associated with decreased student academic scores (Grissom et al., 2021). In the Grissom et al. report, the authors found that schools with high percentages of low-SES students had higher rates of principal turnover. The reported turnover rate for high-poverty schools was 28% while the rate for low-poverty schools was 21%. Another school leader characteristic that effects student academic success is principal experience (Grissom et al., 2021). The more years of experience that principals have is associated with increased student learning. There is some evidence that suggests that high-poverty schools typically have principals with less experience. The Grissom et al. report also indicates that high-poverty schools’ mean years of principal experience is 5.9 years. However, in low-poverty schools the mean years of experience is 7.1 years. Again, these findings indicate the need for strong school leadership. Especially, in Title I schools.

Considering the value of principal leadership and the increased need for effective principals in Title I schools, researchers have found that leadership theories not only provide some suggestions for supporting student academic achievement, a few of these theories have also been found to have positive impacts on CTE (Calik et al., 2012; Cansoy, 2020; Demir, 2008; Francisco, 2019). Regardless of some evidence supporting leadership actions that increase CTE, Goddard et al. (2004) remind us that CTE is the least researched construct that is associated with social cognitive theory. This is also true about school leadership theories that include CTE as a research variable. As such, few studies are directly related to school leadership theories and their impact on CTE. Three theories that have some researched-based evidence suggesting a positive relationship with CTE are instructional leadership, transformational leadership, and the facilitated leadership model (Calik et al., 2012; Cansoy, 2020; Demir, 2008; Francisco, 2019; Nordick et al., 2019; Thornton et al., 2020). Therefore, this review will explore some aspects of these theories which have been shown to influence CTE and in turn have the potential to impact student achievement.

Instructional leadership includes leadership actions that principals enact that directly influence teacher instruction and student learning (Calik et al., 2012). Like other leadership theories, principals who help manage curriculum and instruction, provide teacher observation and supervision and those who monitor student academic achievement are providing instructional leadership in their schools (Fancera & Bliss, 2011). These principal actions have been researched to determine their effect on CTE. For example, Fancera and Bliss found that some of these actions increase CTE. In their study, Fancera and Bliss hypothesized that principal instructional leadership has a direct effect on CTE and an indirect effect on student achievement through principal instructional leadership strategies. The leadership strategies used as variables in this study included, setting school goals, communicating those goals with the faculty, evaluating teachers' instruction, coordinating curriculum, monitoring student progress, protecting classroom instructional time, maintain high principal visibility, providing incentives for teacher performance, providing, and supporting teacher professional development, and providing student incentives for learning (Fancera & Bliss, 2011). This study found that some of these instructional leadership strategies influenced student learning, but they had no effect on CTE. Indeed, only evaluating teacher instruction, monitoring student progress, and protecting instructional time had a significant relationship with student achievement, but had no significant relationship with CTE (Fancera & Bliss, 2011).

However, in a similar study, Calik et al. (2012) examined instructional leadership variables of providing a positive and supportive relationship, providing a clear and understandable vision, providing high expectations, providing significant professional development, and providing shared leadership. They found that all of these variables have a positive and significant relationship with CTE (Calik et al., 2012). Therefore, this study did indicate that principal instructional leadership can increase a school's level of CTE. Even with mixed findings regarding instructional leadership's effect on CTE, instructional leadership provides an area of opportunity for researchers to continue to explore.

Another leadership theory that has been applied to CTE research is transformational leadership. Transformational leadership focuses on strengthening teachers and supporting them to become more effective and more focused on school goals and outcomes (Cansoy, 2020; Francisco, 2019). In two separate studies conducted by Cansoy and Francisco, the researchers identified categories of principal actions that are associated with transformational leadership. Some of these principal actions are like instructional leadership actions. However, the actions also include motivational and inspirational actions used to improve teachers' effectiveness. These categories of actions include idealized effect, inspirational motivation, intellectual stimulation, individualized interest, contingent rewards, extra effort, and effectiveness.

Cansoy (2020) and Francisco (2019) also provide examples of principal actions that fit into these different categories. For example, idealized effect occurs when principals provide role models for teachers through their own modeling and through teachers' peer modeling. Idealized effect is also developed when principals build a common purpose and mission for the school in which teachers are willing to set aside their own interests for the good of the school. Inspirational motivation includes expressing confidence in others and communicating optimism about completing future goals. Intellectual satisfaction includes the acts of supporting innovation, valuing differing opinions and critically analyzing school outcomes. Individualized interest actions include valuing the individual and dedicating time to help them develop skills. School principals who praise teachers for reaching goals and for their efforts in accomplishing school improvement tasks, and principals who clearly establish rewards are using contingent rewards. Leaders who can inspire teachers to try harder to reach school goals are using the leadership category of extra effort. Finally, effectiveness as described in the transformational leadership model includes principal actions such as providing needed materials and supplies for teachers, and sharing teachers' abilities with district administration (Cansoy, 2020; Francisco, 2019).

These transformational leadership categories and principal actions have also been used in research studies to determine their impact on CTE. The results of these studies provide some evidence of an overall positive relationship between transformational leadership and CTE (Cansoy, 2020; Demir, 2008; Francisco, 2019). However, not all of the transformational leadership categories and actions were found to have significant relationships with teacher efficacy. For example, in Francisco's study, which involved 260 high school teachers from the Philippines, and included all of the transformational leadership categories listed above as research variables, it was found that only contingent rewards and effectiveness had significant ($p < .05$) relationships with teacher efficacy. As such, research suggests that there is an overall influence exerted on CTE through transformational leadership. However, it is unclear which actions associated with transformational leadership provide the most effective mechanisms for increasing CTE in schools.

A final study that is directly related to educational leadership theory and CTE was conducted by Nordick et al. (2019). This was a cross-case analysis study involving 24 school principals. The purpose of their study was to identify behaviors and practices used by principals to increase CTE at their schools. They found that principals reported that by having supportive relationships with teachers, scaffolding collaboration, and helping to advance teacher expertise were concepts they used most to increase CTE. The results of this study allowed the researchers to develop a theoretical school leadership model based on the principals' responses. Nordick et al. called their theoretical model the facilitated leadership model that was comprised of three main components with subcomponents. The main components identified in the model were supportive relationships, scaffolded collaboration, and advancing expertise. Subcomponents associated with supportive relationships include clear communication, enhanced trust, and positive attitudes. Concepts that were associated with scaffolded collaboration included common goal setting and shared unity. Finally, subcomponents of advancing expertise included teacher voice, professional support, and uplifting celebrations (Nordick, et al., 2019). The findings of this qualitative study provide additional information for researchers to investigate mechanisms of CTE.

In conclusion, school leaders who strive to develop CTE as a method to improve schools can find some suggestions in the research as mentioned previously. Furthermore, Bandura (1997) suggests that principals who focus on student achievement and support teacher instructional goals can help increase CTE. Aldridge and Fraser (2016) also found that principals who support teachers with needed resources, and who helped build school goal consensus for student learning had a positive effect on teacher efficacy. Finally, Devos et al. (2012) found that principals who have supportive attitudes during observation follow-up meetings led to an increase in teacher efficacy. As such, after reviewing the research on the importance and effectiveness of school leadership for increasing student achievement and for increasing CTE, school leadership clearly merits further research. As we have seen, research identifies several strategies and theoretical constructs for school leaders to consider as mechanisms for increasing CTE in their schools. However, there is a need for additional research to continue to find effective mechanism to increase CTE. Additionally, research should continue to show how these leadership concepts can be used to increase student achievement.

Collective Teacher Efficacy and Academic Achievement

Social cognitive theory and more specifically, collective teacher efficacy has a significant impact on student learning (Bandura, 1997). In a report written by Zhou (2019), CTE was identified as the most influential concept that impacts student learning with an effect size of $d = 1.57$. CTE has also been shown to have a positive significant relationship with student achievement even when controlling for SES (Goddard et al., 2000). Even though the research suggests a strong relationship between CTE and student achievement, Bandura (1997) states that a school's level of collective efficacy can be eroded in schools with high numbers of low-SES students. In low-SES schools, Bandura suggests that principals build a culture where teachers believe that low-SES students can learn. Therefore, educational leaders can look to the development of CTE as a means to increase student achievement. Several studies will be covered in this section of the review that provide support for this assertion.

Out of the four sources of CTE (mastery experiences, vicarious experiences, social persuasion, and affective states), mastery experience has the strongest effect on CTE (Goddard, 2001). One of the ways researchers have operationalized mastery experience is by looking at past academic success. Several studies have looked at the relationship between past student academic success and CTE and have found clear results indicating that past academic performance is associated with high levels of CTE (Fancera, 2016; Goddard, 2001; Goddard & Skrla, 2006; Mosoge et al., 2018; Ross et al., 2004; Sandoval et al., 2011). Bandura (1997) recognized that in efficacious schools, school leaders who help ensure that students are academically successful from year to year help students and teachers to build efficacy. Other ways that mastery experience has been operationalized in schools includes goal setting for students with teacher support in monitoring student progress and ensuring that students master content (Bandura, 1997). Goal setting and helping teachers master instructional tasks and abilities can also strengthen teacher efficacy through mastery experience. Finally, helping teachers to stay in the profession, avoiding teacher burnout through rapid changes of curriculum and instructional programs, and providing strong support with professional development will likely help build teachers' efficacy.

Several other studies have indicated that CTE is associated with high levels of student achievement (Goddard, 2001; Goddard et al., 2000; Goddard, Hoy, & Hoy, 2004; Goddard, LoGerfo, & Hoy, 2004; Hoy et al., 2002; Moolenaar et al., 2012; Parker et al., 2006; Zhou, 2019). One of those studies even reported having significant effects greater than the effect of SES on achievement (Goddard et al, 2000). This study was conducted using elementary schools in a Midwestern school district of the U.S. The study included the pilot study for creating and testing a collective efficacy scale. Goddard et al. (2000) found that the relationship between CTE and math, and CTE and language arts was stronger than the effects of SES on student achievement. Furthermore, Hoy et al. also reported that CTE was a stronger predictor of student math achievement than SES in their study of 97 high schools in Ohio.

Finding that CTE might have a stronger effect than SES is an interesting finding because the effects of poverty on student achievement is well documented. In this review, many of the studies report significant negative relationships between student achievement and poverty (Fancera & Bliss, 2011; Fancera, 2016; Hoy et al., 2002; McCoach & Colbert, 2010; Parker et al., 2006; Tschannen-Moran & Barr, 2004). Poverty has been associated with low student achievement for many years. Sandoval et al. (2011) reported, "One of the greatest challenges that educators and policymakers face today is the low performance of economically disadvantaged students" (p. 11). Bandura (1997) also asserts that poverty can erode CTE. However, Bandura reported that the relationship between poverty and achievement was more closely related to the perceptions of teachers than the actual characteristics of students. He stated, "Student body characteristics influence school attainments more by altering faculties' beliefs about their collective instructional efficacy than by direct impact on school achievement" (Bandura, 1997, p. 250). Furthermore, Goddard et al. (2004) reported that they found no significant relationship between minority students and CTE. Finally, Goddard and Skrla (2006) while studying schools with high achievement and low-SES populations found evidence suggesting that the relationship between poverty, race, CTE and achievement might be more closely related to teacher perceptions then SES, or race. In the Goddard and Skrla study, the researchers reported that Hispanic and African American teachers had higher levels of CTE than the white teachers did in the successful low-SES schools. These reports suggest that as school leaders implement strategies and practices to raise student achievement and to build CTE, principals should work to build a culture where teachers believe that they can help all their students.

Collective Teacher Efficacy Research Gap

Research involving CTE is still relatively limited. In 2004, Goddard et al. reported that CTE was the least researched construct related to social cognitive theory at that time. Furthermore, other researchers report that few studies have conducted research to show the relationship between CTE and student achievement (Goddard et al., 2000; Goddard, Hoy, & Hoy, 2004; Hoy et al., 2002; Sandoval et al., 2011) and there needs to be more research in this area. Some studies in this review have suggested that CTE is associated with student achievement, which indicates that it is a worthy concept for research. However, Goddard et al. (2000) suggests that CTE is a stable concept that is difficult to change. Therefore, more studies are needed to help identify mechanisms to increase CTE through mastery experiences, vicarious experiences, social persuasion, and physiological states (Belfi et al., 2015; Fancera, 2016; Fancera & Bliss, 2011; Goddard, Hoy, & Hoy, 2004; Goddard & Skrla, 2006; Ross et al., 2004; Zhou, 2019).

Additionally, Zhou (2019) stated, “We understand near nothing about how collective efficacy forms at schools” (p. 79). Therefore, future research needs to provide information on how CTE is developed in successful schools and classroom contexts over time through longitudinal and mixed method research (Cocca et al., 2018; Goddard & Goddard, 2001; Mosoge et al., 2018; Nordick at al., 2019; Parker et al., 2006; Sandoval et al., 2011; Sorlie & Torshiem, 2011). As such, in addition to the need for additional quantitative studies, some researchers recommend that future research methods include mixed methods studies. For example, while describing the importance of using multiple methods for researching school concepts, Grissom et al. (2021) stated:

> …quantitative studies often necessarily sacrifice depth for breadth, relying on course measures and statistical summaries of constructs that can obscure nuance and limit opportunities to illuminate mechanisms. Qualitative studies, in contrast, specialize in depth and nuance, providing a rich look at leaders' and schools' individual experiences. Careful examination of these experiences can provide important insights about mechanisms, build theory, and provide direction for new avenues of inquiry. (p. 55)

Furthermore, Zhou (2019) reported that we know very little in regard to how CTE is developed in schools. To help us deepen the understanding of how this occurs, Zhou also recommends that studies using qualitative methods be used to identify how CTE develops in the context of schools.

Parker et al. (2006), conducted one such study. This study was a mixed methods investigation in which the first phase was used to identify an exemplary school that had high levels of student achievement and a high level of CTE. In addition, the school was selected based on the school's high numbers of low-SES students. The first phase of the study also looked at the relationship between CTE, SES and student achievement. In the second phase of the study, the researchers identified processes that could act as mechanisms to raise CTE in schools through qualitative school staff perceptions regarding the school CTE (Parker et al., 2006). Phase one results showed that there were negative significant relationships between schools' levels of low-SES and CTE, and between low-SES and student achievement. Results also indicated that there was a positive relationship between CTE and reading and writing achievement.

In phase two of their study, Parker et al. (2006) found that the following processes were potential mechanisms for increasing CTE: positive climate and high expectations. They also reported that student discipline problems, low principal support, low parent involvement/support, high stress, and low parent expectations were identified by school staff as reducing CTE. As such, this study and other mixed methods studies are recommended to provide both the quantitative assurances and qualitative nuanced depth of information found in mixed method studies in order to help school leaders to increase CTE and student achievement in all schools.

Student learning in schools that are impacted by poverty has been a concern for educational leaders and government leaders for many years. Grant and Arnold (2015) stated, “Educational inequality has proven to be relatively impervious to current policy efforts to ameliorate it” (p. 363). Students who come from impoverished backgrounds tend to perform lower on standardized assessments that measure academic achievement. In 2017, The NAEP math and reading scores indicated that low-SES students performed on average 31 scale score points lower than high-SES students in reading, and 32 scale score points lower in math (McFarland et al., 2019). Additionally, Hernandez (2011) reported that 22% of children who live in poverty will not graduate from high school.

To help educate children who live in poverty, Title I of the Elementary and Secondary Education Act was established in 1965 by the federal government to provide extra funding to low-income students. Today, schools that have 40% or more of their student enrollment who qualify for free, or reduced lunch are Title I eligible schools and they may receive federal funding to help close the achievement gap between low-SES students and more affluent children (Grant & Arnold, 2015).

Even though educators struggle to support low-SES students in experiencing academic success, CTE was found to be correlated with increased student achievement.

Furthermore, a few studies report that CTE has a greater effect on achievement than the effects of low-SES (Goddard et al., 2000; Hoy et al., 2002). CTE is a construct developed by Bandura (1989) as part of his social cognitive theory. CTE is comprised of teachers' combined beliefs in each other's abilities as a collective school community to effectively educate their students. Additionally, Bandura (1997) asserted that student demographic characteristics have a greater effect on achievement through altered teacher perceptions than through actual student abilities. Therefore, CTE can influence student achievement through teacher beliefs that in turn mediates the actions, persistence and attention school staff members apply to student achievement.

CHAPTER III

METHODOLOGY

The purpose of this study is to identify the level of CTE and academic performance in effective Title I eligible schools to identify exemplary cases for examination. It is helpful to emphasize that the quantitative phase of the study, in this case finding the level of CTE and the level of academic performance, is collected solely for the purpose of finding exemplary cases. Thus, this study explored two cases of successful Title I eligible schools to help describe the sociocultural context, the processes, and the strategies these schools use to nurture CTE. The sociocultural context of schools is a complex concept that includes aspects of staff relationships and can be further understood through the study of staff members' actions and school processes. As such, the research questions for this study are as follows.

1. What is the level of collective teacher efficacy in high-achieving Title I eligible schools?
2. What is the perception of teaching staff and principals of high-achieving Title I eligible schools regarding the sociocultural context of their school that nurtures and sustains collective teacher efficacy?
3. What are the actions and processes of teaching staff and principals at high-achieving Title I eligible schools that nurture and sustain collective teacher efficacy?

The descriptions of these high-achieving Title I eligible schools may provide additional information that is helpful in identifying mechanism of CTE and may provide possible actions for educational leaders to take to improve schools and student achievement.

Study Design

A mixed methods explanatory sequential design was used along with a case-selection variant of this method (Creswell & Clark, 2018). Mixed methods explanatory sequential studies include two phases. The first phase is a quantitative phase to measure the level of CTE and academic performance in high-achieving Title I eligible schools in order to identify a couple of exemplary schools as cases in phase two of the study. Next, cases for the qualitative case study phase were identified using a case-selection variant of the explanatory sequential method. In a case-selection variant explanatory sequential study the data from the primary phase is used to help identify successful cases that are selected for the second phase. In the second phase of the study, qualitative methods were used to help explain, or describe the success of the cases and to explain how those schools nurture and sustain their level of CTE.

Qualitative semistructured interviews and teacher focus groups were used to gather school staff members' perceptions explaining how the schools nurture and sustain high levels of CTE. The data from both phases were then combined to provide an in-depth description of these successful Title I eligible schools (Creswell & Clark, 2018). This type of study is needed to help identify mechanisms that develop CTE in school settings and to provide details regarding how schools grow and maintain CTE and student achievement (Mosoge et al., 2018; Nordick et al., 2019; Zhou, 2019).

Creswell and Clark (2018) created a visual model example of an explanatory sequential mixed methods study to provide additional clarity for this methodology. Their model has been adjusted below to show some details of this specific study in Figure 2.

Figure 2

Explanatory Sequential Case-Variant Mixed Methods Visual Model

<table>
<tr><th colspan="3">Explanatory Sequential Mixed Method Design Model</th></tr>
<tr><th colspan="3">Quantitative Phase</th></tr>
<tr><td colspan="3">Quantitative Question: What is the level of collective teacher efficacy in high-achieving Title I schools?</td></tr>
<tr><th>Steps</th><th>Procedure</th><th>Product</th></tr>
<tr><td>Quantitative Sample Identification</td><td>• Purposefully selecting the top quartile of all state Title I eligible schools as determined by the state assessment data.</td><td>• Purposefully identified sample</td></tr>
<tr><td>Quantitative Data Collection</td><td>• Collect data for the level of CTE and the level of academic performance for high-achieving Title I eligible schools.
• Qualtrics Collective Teacher Efficacy Scale (Goddard et al., 2000) survey (N=11)</td><td>• Numeric data</td></tr>
<tr><td>Quantitative Data Analysis</td><td>• Run descriptive statistics analysis using SPSS.</td><td>• Descriptive statistics</td></tr>
<tr><th colspan="3">Qualitative Phase</th></tr>
<tr><td colspan="3">Qualitative Questions:
What is the perception of teaching staff and principals of high-achieving Title I eligible schools regarding the sociocultural context of their school that nurtures and sustains collective teacher efficacy?
What are the actions and processes of teaching staff and principals at high-achieving Title I schools that nurture and sustain collective teacher efficacy?</td></tr>
<tr><th>Steps</th><th>Procedure</th><th>Product</th></tr>
<tr><td>QUALITATIVE Case Selection</td><td>• Schools were selected as exemplary cases of Title I eligible schools that have high levels of CTE.</td><td>• Cases (<i>N</i> = 2)</td></tr>
<tr><td>QUALITATIVE Data Collection</td><td>• Individual in depth interviews and focus group discussions through digital conferencing while using a semi-structured interview guide.</td><td>• Interview data (interview transcriptions)</td></tr>
<tr><td>QUALITATIVE Data Analysis</td><td>• Coding and thematic analysis.
• Within-case and cross-case theme development.</td><td>• Domain analysis of multiple cases
• Taxonomic analysis of multiple cases
• Componential analysis of multiple cases
• In-case & cross-case thematic analysis</td></tr>
</table>

Phase One – Quantitative Procedures

Quantitative Participants

This study examined high-achieving Title I eligible elementary schools in a U.S. intermountain west state. The operational definition for high-achieving Title I eligible schools that is used for this study is schools that are eligible to receive federal Title I funding, and schools that score in the top 25th percentile of K-6th grade elementary schools on the state end-of-year assessments. Usually, the state where this study took place provides a calculated score that ranks schools in the state. However, due to COVID-19, state education officials asked the U.S. Department of Education to waive the state's requirement to provide the school report card provisions that rank the state schools based on the 2020-21 testing results. The U.S. Office of Education approved the waiver on April 21, 2021, because of the educational disruptions caused by COVID-19 (Rosenblum, 2021). However, the state did report individual school scores for ELA, math, and science assessment results. Because the typical school rankings were not reported for the 2020-21 assessment results, the identification of the top 25th percentile of schools was based on the combined percentage of student proficiency for ELA, math, and science for the 2020-21 state assessment results, which was reported for each elementary school in the state. This assessment data is accessible to the public through the state's office of education website and was retrieved to identify the top 25th percentile of Title I eligible schools. The primary researcher was also able to access a list of all the Title I eligible schools in the state from the same publicly accessible website. Before contacting these schools and school staff members for participation in this study, the primary researcher received needed institution of higher education approval through the Institutional Review Board (IRB).

This study implemented a purposeful sample, which allowed the researcher to specify the characteristics of schools needed for this study (Johnson & Christensen, 2017). The specified school characteristics for the study were all high-achieving Title I eligible elementary schools in the state as described previously. Using these criteria allowed the researcher to find the most successful Title I eligible schools in the state as a potential sample. This sample also allowed the researcher to examine the level of academic performance and level of CTE between these successful schools. As such, all kindergarten through 6th grade teachers and school administrators in these high-achieving Title I schools were identified as potential participants.

A total of 49 schools in 20 school districts met these criteria. All 20 school districts were solicited for approval to invite schools to participate in the study (see Appendix A for a copy of the invitation letter). However, only 13 out of the 20 districts gave approval for the researcher to invite eligible schools in the 13 districts. A total of 30 highly effective Title I eligible schools were in the 13 identified districts. Once district approval was given, each of the 30 highly effective Title I eligible school principals were emailed information about the study and were solicited for approval to run the study in their school. Of those 30 schools, 11 agreed to participate in the quantitative phase of the study.

The emailed information to study participants included the research informed consent procedures and any other information required by IRB found on a secure URL link to the information formatted and stored in Qualtrics. From the Qualtrics survey, participants were able to indicate whether they agreed, or not to participate in the Qualtrics survey. Those who agreed to participate in the study clicked on the “Yes” button found at the end of the Online Consent form. These participants were then allowed to continue and complete the online survey. Participants who choose not to proceed clicked “No” at the end of the Online Consent form. By clicking “No,” these participants did not have access to the online study survey.

Participants who accepted the invitation to participate were able to access the Collective Teacher Efficacy survey (Goddard et al., 2000) and a demographics survey through the same secure URL Qualtrics link. The estimated time for participants to complete the survey was less than 25 minutes. To help ensure participant anonymity, no participants names were used in the study. Furthermore, participating schools were given fictitious names in place of the actual school names. However, the actual school names and numbers were kept secure by the primary researcher until completion of the study for the researcher to identify specific school cases for the qualitative phase of this study.

Quantitative Data Collection Process

The primary data collection tool for this study was the CTE scale which was used to measure schools’ level of CTE. Again, state assessment data and the list of Title I eligible schools were collected from the state office of education publicly accessible website to measure the level of academic achievement for each Title I eligible school. These two research variables (CTE and academic performance) were analyzed using descriptive statistics in order to identify two exemplary schools to participate in the qualitative case study in phase two of this research project. Furthermore, the data allowed the researcher to examine the levels of CTE for those schools. An online demographics survey was also given to participants (see Appendix C) to gather other school and teacher related information.

Collective Teacher Efficacy

One of the school characteristics examined in this study was participating schools' level of CTE. In order to collect schools' level of CTE, the Collective Teacher Efficacy Scale that was developed by Goddard et al. (2000) was used. This scale was administered via an emailed Qualtrics link to teachers and principals of the participating schools to gather perceptions of staff regarding the school's level of CTE. The collective teacher efficacy scale has a Cronbach alpha of 0.96 (Goddard et al., 2000). The survey is a 21-item instrument that uses a 6-point Likert scale with responses ranging from 1 "Strongly Disagree" to 6 "Strongly Agree." Some of the questions found in the scale include: "If a child doesn't learn something the first time, teachers will try another way." "These students come to school ready to learn." "Teachers here are confident they will be able to motivate their students." Because CTE is a collective school level measurement, the survey results from all participants in the same school for each survey item were averaged for each school. Then, the 21 average scores for each question were added together to give each school a CTE total score. The results of the survey for each school were entered into SPSS in preparation for data analysis.

School Academic Performance

The second examined school characteristic was school academic performance. School academic performance was based on the state assessment results. A combined score for each school was calculated by adding the percentage of students proficient on the English language arts, math and science assessments for students in third through sixth grade. This data was retrieved from the state's office of education as previously described.

Quantitative Data Analysis Procedures

To measure and analyze the level of CTE and school academic performance, descriptive statistics were used. The researcher also used IBM SPSS statistics software for data entry, and to perform the statistical analysis. Again, these measurements were used solely to identify exemplary cases for the qualitative phase of the study.

Quantitative Internal and External Threats to Validity

Internal threats to validity refer to threats for determining causation in a study (Johnson & Christensen, 2017). To determine a causal relationship between an independent and a dependent variable, the following three conditions need to exist: (1) There needs to be a relationship, or correlation, between the two variables. (2) There needs to be correct temporal conditions where the cause must precede the effect. (3) No other alternative causes can explain the result (Johnson & Christensen, 2017). Because this study is not attempting to determine causation, it is only looking at descriptive statistics, several internal threats to validity will be overlooked. Another internal threat to validity is selection. Because this study uses purposeful sampling, it does not represent a random sample. Therefore, the results of the study are not a representative sample of the target population. Furthermore, if only certain individuals in the target population respond to the measurement tools, then the data will be suspect. Attrition is another threat to the validity of this study. If some of the target population fail to complete the study, this could threaten the validity (Johnson & Christensen, 2017).

External validity relates to the ability to relate the results of the study to the general population (Johnson & Christensen, 2017). This study uses a very specific population (i.e., successful Title I eligible schools in an intermountain western state of the U.S.). Therefore, it is not generalizable to other populations. This study is also affected by other types of external validity like temporal validity (i.e., results may not be generalizable across time), and construct validity (i.e., consistent and valid ways to operationalize constructs) (Johnson & Christensen, 2017).

Whereas this study includes many threats to validity, the results should be examined with those cautions in mind. However, this research model does provide exemplary case models to help explain the sociocultural context of these schools and provides suggestions for potential future research and for building CTE in schools.

Phase Two – Qualitative Procedures

Using qualitative methods, the second phase of the study examined the research questions, “What is the perception of teaching staff and principals of high-achieving Title I schools regarding the sociocultural context of their school that nurtures and sustains collective teacher efficacy?" and "What are the actions and processes of teaching staff and principals of high-achieving Title I schools that nurture and sustain collective teacher efficacy?"

Qualitative Recruitment

Two schools were selected as case studies based on the quantitative phase results of the study to serve as exemplar cases for the qualitative study phase. The criteria used for the school selection in the case study was each school's level of CTE, school's level of academic success and school's percentage of student population that qualified for free, and reduced lunch. All eleven schools participating in the quantitative phase of the study scored in the top quartile of Title I eligible schools on state end-of-year assessments. Since all of the participating schools met the criteria for having high academic performance and a high level of free, or reduced lunch student population, the schools' level of CTE became a primary consideration for school selection for the case study. By selecting schools with the highest levels of CTE and selecting schools from two different locales (one city locale and one rural locale), the primary researcher was able to procure the richest data.

These two participating schools received a second email invitation to participate in the qualitative phase of the study. A rationale for the schools' inclusion in the case study was also included in the emailed invitation (see Appendix B). The principals of these two schools were invited to participate in semi-structured interview(s) via virtual meetings with Google Meet. Principals were also asked for permission to conduct virtual focus group discussions with teachers and instructional staff at their respective sites with potential follow-up semistructured online virtual teacher interviews via Google Meet. All teachers and instructional staff were also invited to participate in the virtual focus group discussions through an email invitation from the researcher. Similarly, to the quantitative phase, qualitative participants were given all information required by university IRB including informed consent through a secure URL link to Qualtrics.

Qualitative Data Collection Process

Semistructured focus group discussions and interviews using an interview guide approach were used to gather the qualitative data from each school teaching staff and principal. Interview protocols and focus-group discussion protocols are found in Appendices B, D, E and F. This approach allowed the researcher to have preplanned focus group questions and interview questions as a guide. However, the topics and themes of the conversations were not always tied directly to the guide (Johnson & Christensen, 2017). The semistructured questions were based on two theoretical sources. One source of questions was based on the Collective Teacher Efficacy (CTE) Scale created by Goddard et al. (2000). The original questions from the CTE scale were modified by changing the questions to help explain how schools have developed CTE. Some sample questions for the interview protocol include the following:

- When students struggle with learning at this school, what do teachers do to help with student academic success?
- How do teachers in this school show that they have confidence that all students can learn?
- How do teachers at this school work together to prepare themselves to be effective teachers?

Another source of the semistructured questions came from aspects of transformational leadership. Demir (2008) conducted a study to determine if transformational leadership had an influence on CTE. In her study, Demir hypothesized that CTE would be influenced by transformational leadership through the mediating effect of teacher self-efficacy and a school's collaborative culture. The study used a pathway regression model which provides some indication that transformational leadership has a positive significant relationship ($B = 0.42$, $p < 0.001$) with CTE. As such, the primary researcher of this study used some items from the Headmasters' Transformational Leadership Behaviors Scale created by Balyer and Ozcan (2012) to develop additional questions to be used in the focus group discussions and the semi-structured interview with the school principals. This scale includes four major categories of leader's actions. Those categories are vision building, individualized consideration, intellectual stimulation, and innovative climate. Some of the questions used in the focus group discussion and interview protocol that are associated with the Headmasters' Transformational Leadership Behaviors Scale (Balyer & Ozcan, 2012) were organized based on the four categories of effective leadership actions that include the following.:

- Vision Building:
    - What is your school vision?
    - How does your school vision include aspects of student learning?
    - How do you effectively communicate the school vision?

- Individualized Consideration:
    - How do you help teachers to feel valued and respected?
    - How do you help teachers to feel that their efforts on school improvement and increasing student academic achievement are appreciated and valued?
    - How do you help teachers feel that their voices are heard?

- Intellectual Stimulation:
    - How do you encourage teachers to try new teaching strategies?
    - How do you encourage teachers to reflect on their own learning?

  - How do you encourage teachers to develop ideas to improve student learning?

- Innovative Climate:
  - In what ways are you trying to improve student learning?
  - How are teachers trying to improve student learning?

These focus group discussions and semi-structured interviews were conducted via the internet using virtual meetings on Google Meet. These meetings were recorded using Google Meets. Google Meets also transcribed the interviews and focus-group discussions. The transcriptions were then checked for accuracy by the primary researcher by going back and listening to the original recordings. The transcriptions were then stored in a password secured web-based Google Drive account.

Qualitative Data Analysis Procedures

The qualitative analysis process for this study utilized the steps for conducting a domain analysis, taxonomical analysis, componential analysis, and a theme analysis as described by Spradley (1979). This process uses informant information gathered through interviews and other similar methods to create an ethnographic record. From the ethnographic record, researchers seek to identify cultural knowledge as described by informants. Spradley calls this process ethnographic analysis, and he defines ethnographic analysis as, “the search for the parts of a culture and their relationships as conceptualized by informants” (p.93). Before conducting the ethnographic analysis, the primary researcher read through the transcripts multiple times and began to code the transcripts manually to identify potential domains and included terms.

Domain Analysis

Next, the researcher began conducting a domain analysis. Domain analysis is the act of finding the larger units of cultural knowledge called domains (Spradley, 1979). Domains are defined as categories of words that include other categories. Categories include different things that are treated as being equal (Spradley, 1979). Therefore, types of similar things make up a category. For example, all of the types of books make up a category. Items in this “book” category might include fictional books, informational books, history books, and so on. However, because all of the types of books listed in the example are also their own categories, the category “books” would also be considered a domain.

According to Spradley (1979), the structure of a domain contains four parts. First, all domains include the title. The domain title should be based on the informants’ use of the observed language. Therefore, Spradley calls these titles cover terms, or folk terms. Second, domains include two or more included terms. For example, in the domain for “cars,” included terms could be sports cars, sedans and economy cars. Third, domains contain one semantic relationship. Semantic relationships link a folk term, or domain title to all of the terms found in the domain’s set. Semantic relationships often use the words “is a kind of” to link the domain title and its’ included terms. For example, a sedan is a kind of car. However, semantic relationships can link two words and their relationship together in many other ways. Therefore, folk terms spoken in relation to other terms using linking words are known as semantic relationships. The fourth part of a domain is the boundary of the domain. The boundary defines which terms belong inside or outside of the domain (Spradley, 1979).

Researchers have found that all cultures use a few common semantic relationships (Spradley, 1979). These common semantic relationships are called universal semantic relationships. Spradley proposes the use of the universal semantic relationships found in Table 1. Therefore, the primary researcher used these universal semantic relationships to begin to find domains. However, the researcher also searched for other semantic relationships found in informants' interview notes to find additional domains. Once several domains were found, the use of Domain Analysis Worksheets (Spradley, 1979) were used to identify the cover terms and the included terms for each domain (see Appendix G). Furthermore, follow-up interviews were scheduled with teachers and principals to ask additional structural questions that help to further identify cover terms, included terms and for member checking (Spradley, 1979).

Table 1

Spradley's (1979) Useful Semantic Relationships for Finding Domains

Types of semantic relationships	Examples
1. Strict Inclusion	X is a kind of Y
2. Spatial	X is a place in Y, X is a part of Y
3. Cause-effect	X is a result of Y, X is a cause of Y
4. Rationale	X is a reason for doing Y
5. Location for action	X is a place for doing Y
6. Function	X is used for Y
7. Means-end	X is a way to do Y
8. Sequence	X is a step/stage in Y
9. Attribution	X is an attribute (characteristic) of Y

To help find domains and later taxonomies, Spradley (1979) also uses a few ethnographic principles for finding cultural meaning from symbols. These are called the relational principle, the use principle and the similarity principle. The relational principle states, “The meaning of a symbol can be discovered by finding out how it is related to all other symbols” (Spradley, 1979, p. 156). The use principle states, “The meaning of a symbol can be discovered by asking how it is used rather than asking what it means” (Spradley, 1979, p. 156). The similarity principle states, “The meaning of a symbol can be discovered by finding out how it is similar to other symbols” (Spradley, 1979, p. 157). By using these three principles, the primary researcher identified the domains and taxonomies from each of the participating school’s cultures. These domains and taxonomies were written and recorded using Google Sheets in a secure web-based Google Drive account.

Taxonomical Analysis

The next type of qualitative analysis that was used to analyze the interviews and focus group notes was a taxonomical analysis. As part of the taxonomical analysis, the primary researcher conducted an in-depth analysis of those domains that likely have the greatest impact on sustaining CTE, and that likely have the greatest effect on increasing student learning. However, several other domains were also studied in a shallower analysis to help identify the cultural meanings between domains which helped to provide a holistic cultural analysis as well (Spradley, 1979).

According to Spradley (1979), to do an in-depth analysis of a domain, researchers need to observe and ask informants how the symbols (folk terms) are used in different situations. While analyzing these cultural symbols and domains, researchers gain greater cultural understanding by asking for the use of these terms, not the meaning. (Spradley, 1979). Taxonomical analysis is the in-depth study of a domain. Furthermore, "a folk taxonomy is a set of categories organized on the basis of a single semantic relationship…. A taxonomy differs from a domain in only one respect: it shows the relationships among all the folk terms in a domain" (Spradley, 1979, p. 137). In other words, taxonomies not only organize terms under cover terms based on a semantic relationship, but taxonomies also identify how each included term in this domain is related to the other included terms in the domain. Another way to think about a taxonomy is that they provide additional details about a domain's internal organization through identifying the relationships among the included terms of a domain (Spradley, 1979). Figure 3 provides an example of types of sports cars that show the difference between a domain and a taxonomy.

Figure 3

Domain and Taxonomy for Types of Sports Cars

<table>
<tr><td colspan="8">Domain Cover Term: Types of Sports Cars</td></tr>
<tr><td colspan="2">Included Terms</td><td colspan="4">• Chevy
• Porsche
• 911
• Ferrari
• BMW
• GT-R</td><td colspan="2">• Z4
• Corvette
• Nissan
• Cayman
• Camaro
• Boxster</td></tr>
<tr><td colspan="8">Taxonomy: Types of Sports Cars</td></tr>
<tr><td colspan="2">Chevy</td><td colspan="3">Porsche</td><td rowspan="2">Ferrari</td><td>BMW</td><td>Nissan</td></tr>
<tr><td>Corvette</td><td>Camaro</td><td>Cayman</td><td>Boxster</td><td>911</td><td>Z4</td><td>GT-R</td></tr>
</table>

The structure of taxonomies was found in this analysis using substitution frames, which help researchers to use one semantic relationship to search for taxonomical structures. Furthermore, taxonomical analysis occurred using structural questions, and included term questions asked during additional informant interviews (Spradley, 1979). From the use of interviews, focus group discussions and follow-up interviews using structural questions, multiple completed taxonomies were created that show the structure and relationships between folk terms in the schools' cultures.

Componential Analysis

Next, the primary researcher conducted a componential analysis. Spradley (1979) defines componential analysis as "the systematic search for the attributes (components of meaning) associated with cultural symbols" (p.174). Part of the process of finding attributes of folk terms is done through finding contrasts between terms. Specifically, restricted contrast is a tool used to help ethnographers find cultural meaning. Restricted contrast occurs when symbols and folk terms have similarities but are also different in certain aspects. This process comes from another ethnographic principle for finding cultural meaning: the contrast principle. The contrast principle states, "The meaning of a symbol can be discovered by finding out how it is different from other symbols" (Spradley, 1979, p. 157).

The primary researcher used paradigm worksheets, or schematic representation tables (see Appendix H), which allowed him to identify distinguishing attributes of sets of terms from domains through finding contrasts between the terms (Spradley, 1979). For example, these tables list the included terms in a domain. The table also lists ways that the terms contrast, or how the terms are different. This process helps to give greater meaning to those terms and the cultural meaning associated with those terms.

To complete the componential analysis, the researcher used steps suggested by Spradley (1979). As such, the specific steps the primary researcher used to complete the componential analysis were first, selecting specific contrast sets found in the terms from different domains. Second, the researcher used contrast questions during interviews and the focus group discussions, and in follow-up interviews to identify and inventory all discovered contrasts in the contrast set of terms. Third, the researcher prepared paradigm worksheets for the folk terms in contrast sets from different domains. Fourth, the researcher entered dimensions of contrast based on binary values on the paradigm worksheet next to the terms that have those specific attributes. Fifth, the researcher combined dimensions of contrast that are closely related to other dimensions of contrast forming dimensions of contrast with multiple values. Not all the dimensions of contrast have binary values. So, this step helped the researcher to combine the more complex dimensions of contrast into one. Sixth, while using the paradigm worksheet to see what missing data was needed, the researcher prepared some contrast questions used during the follow-up virtual interviews. In the final step of the componential analysis, the researcher created a several completed paradigms (see Appendices J, K, and L).

Theme Analysis

Cultural themes are defined as, “any cognitive principle, tacit or explicit, recurrent in a number of domains and serving as a relationship among subsystems of cultural meaning” (Spradley, 1979, p.186). Furthermore, cultural themes make up cognitive principles that cultures accept as true and are comprised of common assumptions and experiences in that culture. Themes apply to many situations and are highly generalizable (Spradley, 1979). Themes will occur in more than one domain. Importantly, themes also express the relationships between domains in a culture (Spradley, 1979), thus, providing a cohesive cultural scene.

To conduct the thematic analysis, the primary researcher used the following recommendations provided by Spradley (1979; see Appendix I). This process includes searching for relationships between domains, listing informants' examples to find common themes, and reviewing prior analysis to find themes (Spradley, 1979). Finally, the primary researcher wrote a summary overview of the cultural scene using the major concepts from the culture to explain in writing the scene. This process can also help the researcher find additional themes.

Once the data were fully analyzed, the quantitative and qualitative data were synthesized to provide an enhanced understanding of potential mechanisms and concepts that contribute to CTE development and increased student achievement. The quantitative data and results are presented in conjunction with the qualitative summary of the schools' cultures to present a holistic rich description of how these schools develop and maintain high academic performance and high levels of CTE.

Internal and External Threats to Validity

Validity in qualitative or mixed methods research is known as trustworthiness and is synonymous with the concepts of research quality and defensibleness (Johnson & Christensen, 2017). Descriptive validity is associated with recording events or conversations as they happen, and emic validity is recording the correct meaning of the data (Johnson & Christensen, 2017). For this study, to limit researcher bias and to improve trustworthiness, multiple practices to improve trustworthiness were used. The use of multiple methods for checking results is known as triangulation (Johnson & Christensen, 2017). The use of member checking by allowing participants to read, review and provide feedback on the analyzed qualitative data to check for agreement is one method used to strengthen validity. The final study findings also went through a peer review process in order to triangulate the findings. Using member checking and peer review helped to strengthen the validity of the study findings (Johnson & Christensen, 2017).

CHAPTER IV

RESULTS

The purpose of this study was to identify the level of CTE in effective Title I eligible schools to identify cases to participate in the qualitative phase of the study. This study explored selected cases of highly successful Title I eligible schools to illustrate the sociocultural context, processes, and strategies these schools use to nurture CTE that also result in high academic performance. As such, the research questions that are used in this study were as follows.

1. What is the level of collective teacher efficacy in high-achieving Title I eligible schools?
2. What is the perception of teaching staff and principals of high-achieving Title I eligible schools regarding the sociocultural context of their school that nurtures and sustains collective teacher efficacy?
3. What are the actions and processes of teaching staff and principals at high-achieving Title I eligible schools that nurture and sustain collective teacher efficacy?

The answers to these questions provide researchers and educational leaders with mechanisms and strategies for increasing both CTE and student academic performance even in schools that serve at-risk student populations. To answer these questions, a mixed methods explanatory sequential study with a case-study variant was used. This study used quantitative methods to identify specific cases that help explain sociocultural contexts (Creswell & Clark, 2018).

The quantitative phase of the study looked at the question, “What is the level of collective teacher efficacy in high-achieving Title I eligible schools?” The sole purpose of the quantitative phase was to identify exemplary cases to be used in the qualitative phase of the study. The results from the quantitative phase of the study provided information that was then used to identify some of the best performing schools that also have high levels of CTE.

Phase One – Quantitative Data Analysis

Because the sole purpose of the quantitative phase was to identify the cases for the qualitative study, descriptive statistics were used as the analysis process. Each school was assigned a fictitious school name to replace the actual school name in order to keep the school and school employees' information confidential. Schools' data was stored on SPSS software. SPSS was also used to analyze the data for descriptive statistics. The following information was gathered for each school: the average level of schools' CTE, the level of academic performance, the percentage of students who qualified for free, or reduced lunch, the number of teaching staff who participated in the study, the participation percentage for each school, the school's size based on student enrollment numbers, a measurement of the level of teacher experience, and a measurement of the level of teacher education. Table 2 shows the combined schools' descriptive statistics for all of the characteristics described above.

The Collective Teacher Efficacy Scale developed by Goddard et al. (2000) was used to measure each school's level of CTE. This scale has 21 questions that are formatted using a 6-point Likert scale. Therefore, the researcher assigned six possible points to each of the 21 questions based on the Likert scale answer; 6 points given for the most favorable CTE response and 1 point given to the least favorable CTE response. Thus, the highest possible score for each respondent was 126 points. A CTE score was calculated for each school by taking the mean CTE score from each school's participants. The mean level of CTE for all schools was 97.5 with a standard deviation of 5.3.

Table 2

Descriptive Statistics for School Characteristics (*N* = 11)

School characteristics	Range	Minimum	Maximum	Mean	*SD*
CTE	17	88	105	97.5	5.3
AP	47	109	156	134.2	13.4
FRL (%)	29	44	73	52.2	9.8
N	17	3	20	10.6	6.4
Part %	91	9	100	50.2	29.0
Enroll	496	123	619	388.4	176.7
T Exp.	1.3	2.4	3.7	3.1	0.4
T Educ.	0.8	2	2.8	2.5	0.2

Note. CTE represents collective teacher efficacy. AP represents academic performance. FRL % represents the percentage of the student population receiving free or reduced lunch benefits. Part % represents the percentage of instructional staff who participated in the quantitative study. Enroll is the number of students enrolled in the schools. T Exp. represents a number that corresponds to teachers' years of teaching experience. T Educ. represents a number that corresponds to the level of teachers' education.

Once again, academic performance was determined by using end-of-year assessment results. A combined score for each school was calculated by adding the percentage of students proficient on the English language arts, math, and science assessments for students in third through sixth grade.

Schools' levels of academic performance (AP) were obtained by combining the average state end-of-year assessment results for math, reading and science. The mean level of AP for the 11 schools was 134.2 with a standard deviation of 13.43. These AP scores compared Title I eligible schools' AP levels. When comparing the top quartile Title I eligible schools with all state schools, the school with the highest AP score in this study was Mendoza Elementary School with an AP score of 156. The state average AP score when including all elementary schools in the state (i.e., Title I Eligible schools and non-Title I schools) was 130 points (Utah State Office of Education). Eight of the 11 schools in this study had AP scores higher than the state average.

Schools' level of students who receive free or reduced lunch (FRL) benefits was used to determine schools' eligibility to receive Title I funds. Higher FRL percentages signify a school's increased level of students living below the poverty level. The descriptive statistics analysis indicates that the mean level of FRL for the participating schools was 52.2% with a standard deviation of 9.8. Patzun Elementary school had the highest level of FRL at 73% of the student population qualifying for FRL benefits. Three schools tied for the lowest level of FRL. Those three schools were Ennis Elementary, Needles Elementary and Cardiff Elementary.

Part % represents the percentage of school instructional staff who completed the CTE survey for each school. The mean Part % for the schools in this study was 50.2 with a standard deviation of 29. El Rodeo Elementary school had the highest participation rate at 100% and Thousand Oaks had the lowest rate at 9%.

The mean school enrollment for the participating schools in this study was 388.4 students with a standard deviation of 176.7 students. Thousand Oaks had the highest enrollment at 619 students. Escuintla Elementary had the lowest enrollment with only 123 students.

Teacher experience (T Exp.) represents a scale score associated with the number of years teachers and instructional staff have been teaching. The scale used is as follows:1 = 1-3 years of experience, 2 = 4-6 years of experience, 3 = 7-10 years of experience and 4 = more than 10 years of experience. As such, the mean scale score for teacher experience for the participating schools was 3.1 which represents a rough average teacher experience between 7-10 years. The standard deviation for teacher experience was .4. Cardiff Elementary had the highest teacher experience scale score of 3.7, and Needles Elementary had the lowest scale score of 2.4.

Teachers' level of education in the participating schools was based on the following scale: 1 = Associate's degree, 2 = Bachelor's degree, 3 = Master's degree and 4 = PhD. The mean for the schools' level of teacher education was 2.5. The standard deviation was .2. Escuintla Elementary had the highest level of teacher education with a score of 2.8 while Thousand Oaks had the lowest level of teachers' education at 2.0.

All 11 participating schools had at least 40% of their student population qualify for free, or reduced lunch benefits which made all these schools eligible for Title I benefits. All the schools also scored in the top quartile of the state end-of-year assessments for elementary schools which met the researcher's definition for effective Title I eligible schools. However, these schools varied greatly by the school's level of CTE, school's level of academic performance, student level of poverty as determined by each school's level of free, or reduced lunch student population, school locale (i.e., city, suburban, town, or rural; National Center for Education Statistics [NCES], 2022), the percentage of teacher participation in the study, the size of the school based on student enrollment, the level of teacher experience, and the school level of teacher education. Table 3 shows all the school characteristics for each of the 11 individual participating schools.

Table 3

Participating Schools' Levels of Collective Teacher Efficacy and Other Characteristics

School name	CTE	AP	FRL%	Locale	*n*	Part %	Enroll	T Exp.	T Educ.
Patzun Elem[a]	105	109	73	City	18	86	273	3.1	2.6
Mendoza Elem	104	156	47	Rural	7	64	130	2.9	2.4
Primrose Elem	101	148	52	City	8	31	418	3.4	2.5
Ennis Elem	101	130	44	Town	18	72	533	3	2.4
Escuintla Elem[a]	100	141	61	Rural	4	44	123	3.3	2.8
Needles Elem	96	136	44	Town	10	56	295	2.4	2.2
El Rodeo Elem	96	118	65	Town	20	100	275	2.5	2.3
Williams Elem	95	135	48	Suburban	16	44	530	3.4	2.6
Fishers Cove Elem	95	124	50	Town	9	36	549	3.1	2.4
Thousand Oaks	91	142	46	Town	3	9	619	3	2.0
Cardiff Elem	88	137	44	Town	3	10	527	3.7	2.7

Note. School Name is the fictitiously assigned name for each participating school. CTE is the school's average level of collective teacher efficacy based on teachers' combined scores from the CTE scale (Goddard, Hoy & Hoy, 2000) with a high score equaling 126. AP is the school's academic performance based on a combined percentage of students who scored proficient in the end-of-year state assessments for math, reading and science. FRL% is the school's percentage of students who qualify for free or reduced lunch. Locale describes the school's location in relation to the area's population density. N is the number of teaching staff/principal who participated in the study for each school. Part% is the school's percentage of teachers who participated in the study. Enroll is the school's student enrollment. T Exp. is the school's average level of teacher experience based on the following scale: 1 = 1-3 years, 2 = 4-6 years, 3 = 7-10 years & 4 = more than 10 years. T Educ. Is the school's average level of teacher education based on the following scale: 1 = associate degree, 2 = bachelor's degree, 3 = master's degree, 4 = PhD.

[a] Indicates the schools selected to participate in the qualitative phase of the study.

These results also help to answer research question number one, what is the level of collective teacher efficacy in high-achieving Title I eligible schools? The results also allowed the primary researcher to use the measured level of CTE to compare the levels of CTE in the participating schools. As such, these quantitative results provide descriptive data helpful for selecting cases for the qualitative portion of the study. However, these results are not intended to compare the participating schools' CTE levels with other schools outside of this study.

Phase Two – Qualitative Data Analysis

The schools that were selected as cases for the qualitative phase of the study were Patzun Elementary School and Escuintla Elementary School. The primary consideration for case selection was the school's level of CTE. However, other considerations were also used in the selection such as level of participation, level of free or reduced lunch benefits and locale. Furthermore, a couple of the schools with the higher levels of CTE declined to participate in the qualitative phase of the study.

Because both the quantitative data and qualitative data are helpful to provide rich detailed descriptions of the two school cases highlighted in the qualitative phase of this study, some of the quantitative results were included in the school descriptions along with the qualitative findings. Some of the characteristics of these schools contribute to a richness of qualitative data. One school is in a large city (Patzun Elementary) while the other is in a somewhat isolated rural locale (Escuintla Elementary). However, both schools could be considered smaller elementary schools with both schools falling well below the mean enrollment for participating schools. Even though this study is not intended to focus on smaller schools, it is an interesting fact to note that these small schools both have some of the highest percentage levels of students receiving FRL benefits, which is used as a measurement of student poverty, and yet they also have some of the highest levels of CTE. These school characteristics allowed the researcher to study two schools with high FRL student population and high levels of CTE in schools with two different locales. By selecting schools with the highest levels of CTE, and selecting schools from two different locales, the primary researcher was able to procure a rich data sample.

The qualitative results for this study were presented by providing detailed descriptions of the two purposefully selected cases including each school's general description, each school's historical context and the school's sociocultural context. The sociocultural context description for each school was comprised of descriptions of the school staff members' and student relationships, and each school's processes that nurture CTE.

Again, included in this qualitative analysis is some brief historical information for both school cases. The historical context provides background information and clues to how each school has been able to develop relatively high levels of CTE. Again, some researchers recommend that the study of successful schools includes the study of how CTE has developed in schools over times (Cocca et al., 2018; Goddard & Goddard, 2001; Mosoge et al., 2018; Nordick at al., 2019; Parker et al., 2006; Sandoval et al., 2011; Sorlie & Torshiem, 2011). As such, short school descriptions and historical information is provided for both cases below in order to provide some historical context.

These school descriptions and the analysis of the schools' sociocultural context help to answer the second and third research questions for the study. Those questions were as follows.

2. What is the perception of teaching staff and principals of high-achieving Title I eligible schools regarding the sociocultural context of their school that nurtures and sustains collective teacher efficacy?
3. What are the actions and processes of teaching staff and principals at high-achieving Title I eligible schools that nurture and sustain collective teacher efficacy?

As seen in research questions two and three, this study reports the perceptions, and the actions and processes of the school cases that nurture and sustain CTE. Before reporting the results, it is helpful to discuss the intermingling relationship between perceptions and actions. Knoblich and Sebanz (2006) explain that perceptions often lead to actions. They explain further that perceptions and actions are intimately linked cognitively. Likewise, the findings for this study have intimate intermingling connections between staff members perceptions and their actions and processes used. The findings are reported in separate sections that highlight cultural elements related to perceptions, and later cultural elements related to actions. Nevertheless, the separation in the reported findings between perceptions and actions is not strictly and exclusively observed due to the close relationship between the two concepts.

Patzun Elementary School's Description

Patzun Elementary School is in an inner-city neighborhood of a large city in the intermountain west of the U.S. The size, according to student enrolment, is small when compared to the other schools from this study. Patzun has a student enrollment of 273 students, which is 115 students smaller than the mean enrollment for the participating schools. A large percentage of these 273 students qualify for FRL benefits. The FRL % for Patzun Elementary is the highest percentage out of all other participating schools in this study with 73% of the student population qualifying for FRL benefits. Because of the high percentage of students living below the poverty level, some might assume that this school would struggle to help students to succeed. When compared to the other schools in the study, Patzun does have the lowest level of academic performance with an AP score of 109 based on a combined score from the state end-of-year assessments in language arts, math and science. However, Patzun was still identified as one of the top performing Title I eligible schools in the state scoring in the top 25th percentile of all Title I eligible schools, and Patzun had the highest level of CTE (105 points) out of all other participating schools.

Patzun's teaching staff and school leadership had an average level of teaching experience compared to the other participating schools. The school staff members' teaching experience score was 3.1, which represents a teacher's average years of experience being between 7-10 years. The staff members' level of education score was 2.6 which was tied for the third highest level of staff members' education. This was slightly higher than the average for the participating schools and represents an education level of nearly half of the staff having bachelor's degrees and half having master's degrees. One other interesting fact about Patzun's staff is that they had the second highest level of participation in the study. They seemed unified and eager to tell their story. The following historical account of the school might provide some clues as to why the staff seems so unified and eager to participate.

Patzun's Historical Context

The historical change that many of Patzun's staff members have experienced has helped to shape the school's systems, processes, and current school climate. Therefore, it is important to briefly review some historical events in order to gain insights into the current sociocultural setting at the school and how it has developed over time.

Patzun Elementary School has had a significant transformation over the past several years. In the past, the school was labeled by some as a failing school. As such, there were needed changes to help students to succeed. Early in this change process, school leadership struggled to unify the school staff and to navigate the change successfully. A teacher recounts that one school leader while attempting to enact change, successfully established new policies and structures. However, it was done through fear and manipulation. Another teacher reported that this past principal “destroyed the trust” in the school. It was also reported that this principal created a culture of fear and distrust by “Facebook stalking” staff and “micromanaging.” Finally, another teacher stated that, “most of us were afraid of what [the principal] would do to us.” As such, some teachers described the school’s social environment at that time as frightening and dangerous.

This struggling school culture, along with the academic struggles, led to substantial changes. Teachers explained that the change was hard but it was also necessary. Some examples of teachers’ statements about the change process are recorded in Table 4. The benefit of this difficult time was that many staff members recognized that they could do better, and they could make changes to help students succeed. As such, a

Table 4

Patzun School Staff Members’ Quotes Regarding the School Change Process

Participant	Quote	Elements of change process
Teacher 1	The change process was “a learning time” and “not a fun natural [process].”	A learning time Not a fun time
Teacher 1	“We made some really drastic changes and committed to doing them.”	Drastic changes Committed
Teacher 1	“[We had] to make some hard choices.”	Make hard choices
Principal	“Because the school was not successful, [it was like dropping] the atomic bomb on the system and building it from the ground up.”	Building it from the ground up

teacher stated that she recognized that "there's a time when change has to happen" and this was one of those times.

Another part of Patzun's historical change process included the need for new leadership and letting some staff members go. The school seemed to begin settling into a more organized system of support and improved interpersonal relationships when a new school principal began to rebuild trust. With the new principal, staff members recognized that they could trust him, and they began to trust each other. It was reported that the moment the new principal was hired, "we were able to connect [as a staff] and that's where the trust really started coming." Another teacher also stated that, "The leadership was a huge, huge part of [our successful school change]." As reported, the trust between teachers and the new school principal set the stage for progress.

Change in school leadership was not the only personnel changes at the school. Some teachers were let go, or some left due to the new expectations. A teacher reflected that, as positive school changes were implemented, some staff got on board. However, "Naysayers weren't comfortable in the school anymore. So, they slowly left. Or, they changed." In reflection, it was a positive change. One teacher said, "It helped to take some people out [of the school] and they switched administration." It was also emphasized by one of the school teachers that, "It slowly evolved into this environment" over time. These changes slowly built increasing structures of support and the people at the school continued to build trusting relationships.

Patzun Elementary's Sustained Culture and Processes

Finally, the school's ability to sustain the desired culture and processes completes the historical context for this school. Patzun's school leadership and staff members intentionally worked to protect some aspects of their culture. Even though the current principal was not part of the school transformation, he felt like he had been a big part of the sustained success. He contributed some of his success to the school's hiring decisions and he stated that these hiring decisions have "played a big part in sustaining the school culture." He also attributed sustained school culture and success to the processes used to train new hires. He explained, "If somebody leaves and somebody else comes in…[they] morph into the identity of the school." One of the ways this happens is by strategically selecting hiring committee members.

The hiring committee is composed of the same people who helped to rebuild the school culture and strong systems. This hiring committee intentionally hires staff members to replicate or maintain the school model. The hiring committee is composed of school staff members, school leadership, district leadership and parents. The current principal relates that in his own experience of being hired for the principal position that one fellow candidate was overlooked because "this person would come in and try to fix or change [the school]." The principal reiterated that when hiring school leaders and school staff, "we are seeing good success as a school. We don't need somebody to come in and build [the school] back up." He also wants to hire people that have "similar cultural backgrounds" as the students. He says that they value hiring people who are "a byproduct of our community…a reflective member of the community." Finally, Patzun had a strong on-boarding process to help new staff learn the processes and practices to sustain the school. These processes will be described in more detail in another section of this report.

Patzun's Social-Cultural Context

The most significant school cultural theme identified in the qualitative results for this study is, "The contributions of the sociocultural context to nurturing and sustaining collective teacher efficacy." Sociocultural context has been defined as the prevailing ideas and practices that influence how people interact with their environments (Hwa, 2023). Therefore, both perceptions and actions make up a school's sociocultural context. This is also how the results were categorized and reported: *perceptions* and *actions.*

Additional understanding of the structural relationships between this main theme and these cultural categories is provided in Table 5. Two structural questions were also helpful to guide the analysis and results. The structural questions used were as follows.

1. As part of the sociocultural context, what are all the ways in which relationships and its related cultural elements nurture CTE at Patzun school?
2. As part of the sociocultural context, what are all the ways in which actions and processes and their related cultural elements nurture CTE at Patzun school?

The following sections provide examples of how cultural elements in these two areas contribute to the ways the schools nurtured CTE.

The reported sociocultural elements are categorized into two sections: *staff perceptions* and *actions* and *processes.* Staff perceptions were then reported in two subcategories: *relationships* and *school leader characteristics.* Likewise, actions and processes were reported in the following two subcategories: *school actions and processes* and *school leadership actions.*

Table 5

Patzun's Taxonomy of the Theme: The Contributions of the Sociocultural Context to Nurturing and Sustaining Collective Teacher Efficacy

Domain	Taxonomic elements	Level 2 taxonomic elements	Level 3 taxonomic elements
Sociocultural context: Staff perceptions that nurture CTE	Relationships	Closeness	
		Trust	Accountability
			Mutual respect
		Unity	
		Effective communication	Clear expectations
			Open communication
			Internal messaging system
			Vulnerability with student data
			Crucial conversation
		Growth mindset	Teacher
			Student
		Celebrations	
	Leadership characteristics	Being open & vulnerable	
Sociocultural context: Actions & processes that nurture CTE	School actions & processes	Professional Learning Communities (PLCs)/Team Data Meetings (TDMs)	Block planning
			CFA review
			Interim assessment review
		Faculty meeting	PBIS committee
			EBIS committee
		Goal setting	Schoolwide goals
			Teacher goals
			Student goals
		New teacher on-boarding	
	Leadership actions	Effective communication	Efficient
			Clearly stated expectations
		Shared leadership	Committees
			PLCs/TDMS
			Development of goals
		Building trust	Accessible
			Get to know others
			Competence
			Celebrate teachers
			Trusting others
		Mentoring teachers	
		Being visible	
		Student-learning focus	

Staff Perceptions. This section of the paper helps to answer research question number two: “What is the perception of teaching staff and principals of high-achieving Title I eligible schools regarding the sociocultural context of their school that nurtures and sustains collective teacher efficacy?” Staff perceptions were categorized into the following two taxonomic elements: *staff and student relationships* and *leadership characteristics.*

Staff and Student Relationships. Several aspects of relationships were identified through the process of focus-group discussions and semi-structured interviews. The following paragraphs include taxonomic elements that were expressed and emphasized by Patzun Elementary’s staff members as they were describing their school culture. The major relationship elements for Patzun were *closeness, trust, unity, effective communication, growth mindset* and *celebrations*. These elements arose often in the discussions and interviews and were recognized by staff members when asked to identify causes of success and collective efficacy.

Closeness. The adult staff members at Patzun repeatedly expressed a close, friendly, family feel at their school. Staff members mentioned several times in different ways this closeness. For example, teachers made statements like, “It’s a positive culture” and “I have never been in a school where the adults all like each other and are not clickish. I’ve never been in a place like this and it’s lovely…That friendship and comradery among adults is lovely.” The feeling of closeness extends beyond the adult relationships.

School teachers report that the students feel accepted and have a sense of belonging. For example, the principal related that he saw several fifth graders walk by a fourth-grade class and stop. The principal asked the teacher why the students stopped, and the teacher stated that, "they just stop to say hi to me every day." The principal reflected, "that was quite a meaningful thing that so many kids stopped by to say hello every single day…it's a good culture between the teachers and their students." Other teachers reported students returning to see past teachers due to the close relationships built in the school. As such, a teacher remarked, "Kids will come back from middle school to tell us how they're doing and it's the highlight of my week when they visit." As seen by the staff comments, this culture of closeness was emphasized as a significant aspect of Patzun's culture.

Trust. Trust was another major relationship element that school staff members spoke about when describing their school culture. Trust was made up of two subcategories: *accountability* and *mutual respect.* Accountability is related to the idea that everyone is doing their best and taking responsibility. Some teachers reported the importance of being accountable to each other for student outcomes and using academic data in an open and honest way to help with student academic success. One teacher described this trust and accountability with student data this way,

> We're vulnerable, we trust, and we're open. We're able to talk honestly about data and truly converse about improving student outcomes because we're not so busy hiding behind the data. The data-focused culture has created a safe space where we're focused on being better educators to support our kids. We're not hiding.

This accountability seems to stem from a belief that everyone at the school is trying to do their best, and they are willing to learn from each other. They are focused on ways to help students through analyzing student data.

Trust at Patzun is also made up of mutual respect for each other's professional abilities. Patzun's principal stated, "We hire skilled people that can handle the job." A teacher also mentioned that "We all believe that everyone is doing their best and we value each other's input." A second teacher added, "We treat each other like professionals, and we know that each one of us holds information that will be beneficial to us [all]." As seen by these statements, teachers build trusting relationships through a belief that everyone has value and skills, and that everyone is focused on student outcomes. They also hold each other accountable using student data.

Unity. A third major relationship element identified by staff members was unity. Unity was described by staff members as shared responsibility, or unified purpose. An example of unity at this school is seen during formal meetings where staff members helped to remind each other of meeting norms and helped each other to stick to those common norms. However, the primary focus of this school's unity was centered on staff members' shared responsibility to help students to learn. A staff member explained this school focus by stating simply, "It's definitely a very academic focus[ed-school]." As seen in Table 6, the construct of unity had a student and academic focus.

These statements suggest that Patzun Elementary's staff members recognize that their primary purpose is to help students to learn. Furthermore, staff members are unified in helping all students. Not just the students in their own classrooms. One last statement from the principal was,

> They're all our kids…we're all invested. The reading literacy coach, administration, counselors are invested in each kid as their own even if [the

> student] is not directly their student. They still have an investment in the success of that student.

Table 6

Patzun School Staff Members' Quotes Regarding the School Unity

Participant	Quote	Elements of Unity
Principal	"It's a culture focused on academic learning and achievement."	Learning and achievement
Assistant Principal	"We are focused on students and student outcomes. Other things come later. Our main focus is always our students and what we are doing to [help] them to be successful."	Student outcomes & success
Assistant Principal	"Our main focus here is education and academics…and holding students to high expectation."	Academics High expectations
Assistant Principal	"We'll have those crucial conversations sometimes [with each other] just to make sure everyone's doing their best for kids because at the end of the day we're all here for the kids."	We're all here for the kids
Teacher	"It's always 'our kids', it's never my kids versus your kids."	It's always our kids

This unified focus on student learning is echoed by staff members as a meaningful aspect of the school culture as seen in these examples. The unified focus on student learning is likely a significant aspect of the culture that helps to increase CTE and student achievement.

Effective Communication. Effective communication was another important aspect used by Patzun staff members to describe their culture. Effective communication was described by staff members as clear expectations, open communication, use of the internal messaging system, teachers' vulnerability with student data and crucial conversations. The principal emphasized that, "Regular, clear communication is huge." Staff members mentioned that school leadership tries hard to provide clear expectations. One of the teachers specifically stated, "I've been in a few different schools. The communication and clear vision in our school I think is the clearest…I know it's the clearest and most focused school I've been in." Those schoolwide clear expectation also help students to be successful at school. A staff member explained how these clear expectations help students by stating,

> Kids who've been in our little [Patzun] pipeline are now very prepared. They understand expectations. They know the way in which we converse. They know what the expectations are for completing assignments or for having conversations and for using their time while walking in the halls.

These clear schoolwide expectations supported by all staff seem to go a long way to help students and staff to feel successful.

The school's open communication also helps to create a safe and supportive culture. The school principal leads out in establishing this safe open communication. A teacher described this open communication as,

> We have very clear communication. We feel like we can go to [the principal] and talk to him. There's no hidden agendas…We flat out say [to each other] this is where we are struggling. How are we going to fix it? That's up-front communication. There's nothing hidden and we're doing it for the kids, we're doing it for the families, we're doing it for each other and that creates family.

This type of open communication not only helps others to feel free to express themselves safely. It also encourages staff members to address conflict and disagreement in a positive productive way. For example, one teacher explained how negative comments are processed at the school in this way, "At my previous school there were teachers who would just whine and push back against anything. That's not allowed here. Dissent is allowed, but it's done in a productive way." Staff members remind each other of the norms for communicating productively and they stay focused on their common work to help students to have academic success.

A third element of effective communication is the internal messaging system used when teachers request help or support in their classrooms. The school uses a messaging internet application to communicate on a daily basis. The school principal explained how often the app is used by stating, “I’ve received a message from every one of [the teachers] today…except for one…in our internal message system.” He continued to explain the purpose when he said, “If there’s a kid in class that’s struggling, admin can know about it very quickly.” In this way, teachers feel supported and school administration can respond quickly to teachers’ needs. One of the teachers expressed that, “Telegrams has been a great app for communication.”

An additional aspect of effective communication is how teachers are willing to be vulnerable with their student achievement data. There were a lot of statements indicating that Patzun staff members were accustomed to reviewing student data. Furthermore, they were honest and open about sharing the data because they knew that reviewing the data helped them to better support students. For example, during data meetings, teachers and staff asked each other, “What are you doing in your class to get these results? What’s not working? What is working? It’s honest and open communication.” The principal further explained, “We’re talking about data. We’re having those honest conversations with the kids…We’re having honest conversations about data. [We’re] not shying away from it.” A second teacher stated, “We’re very honest with our data and what we bring to the table.” The open communication and use of student data helped the school to support each other in their efforts to support students.

Finally, school staff and administration also talked about having crucial conversations. These conversations were seen as essential for helping the school to be successful. These conversations occurred between adult staff members, or between students and teachers. The assistant principal provided some detail on how these conversations helped them to stay focused on student learning by saying, “We’re having crucial conversations one-on-one with students. Teachers are pulling students to have crucial conversations with them.” Often these conversations were based on student learning goals and on helping staff members to stay true to school norms and processes. The effective communication identified by school staff members is reportedly an important aspect of the school culture that contributes to staff unity and support, to help establish and maintain school processes and to help students and teachers to increase student learning.

Growth Mindset. School leaders, teachers, instructional staff and students at Patzun spoke about how they worked together to develop a growth mindset. According to Dweck (2008), individuals who develop a growth mindset believe that intelligence can be developed through hard work. Patzun Elementary staff worked hard to improve their instructional skills and they worked hard to help students to develop a similar work ethic and belief. This growth mindset is one of the sociocultural relationship elements that arose from the qualitative data analysis for this study. This cultural element of the school includes the ways people encourage and support each other to learn, including specifically how teachers talk to each other and how teachers talk to students.

Teachers and other staff members support each other in developing a growth mindset. This occurred through teachers asking for more clear feedback from school leaders during observation feedback session. It also occurred when teachers were learning new instructional strategies from each other. Some of the teacher quotes regarding the development of a growth mindset are found in Table 7. As reflected in these statements, teachers sought out opportunities to improve their teaching with peers, coaches, and administration. The school administration, coaches' and mentors' observations were generally seen as support for teacher development. All of these efforts to grow and improve contribute to the schoolwide focus on a growth mindset.

Table 7

Patzun School Staff Members' Quotes Regarding the Teacher Growth Mindset

Participant	Quote	Elements of growth mindset
Assistant Principal	"Our teachers don't just want to get compliments. They really want specific feedback on how to improve their teaching skills."	Teachers want feedback to improve teaching.
Assistant Principal	"[Teachers say] we don't want fluff. We know what we do well. Tell us what we need to improve on."	Tell us how to improve.
Teacher 1	"[With] coaches' support and admin support, [they're] giving us feedback to help us grow. [They] give us positive feedback as well so that we feel like we are doing a good job."	Give us feedback to help us grow. Give us positive feedback so we feel like were doing a good job.
Teacher 1	"Just like our students…we want to have a growth mindset. We want to improve our teaching…I don't like being observed. But, I appreciate the feedback and I implement that feedback right away."	We want to improve our teaching. Implement feedback right away.
Teacher 2	"Reflective practice of teachers continuing to hone their craft, that growth mindset, isn't just a buzzword. It's a thing that we do. We're always looking for what's that next thing? How can we level that up? We use that [mindset] with kids as well…that has been really a part of why [Patzun] has continued to grow over time."	Reflective practice of teachers. Always looking for the next thing.

The teachers seem to be seeking learning and improvements in their teaching skills. However, the teachers and staff members also pushed students to develop a growth mindset as well. A teacher expressed this focus on learning in this way,

> We create a culture of high expectations but also high support…It feels like a school where people are [here] to learn. Teachers are [here] to work and teach and students are [here] to learn and it's expected that they learn.

Other similar statements help to provide additional insight into this cultural element and ways the school personnel helped students to develop this mindset. Some of those statements are shown in Table 8.

Table 8

Patzun School Staff Members' Quotes Regarding the Student Growth Mindset

Participants	Quotes	Elements of student growth mindset
Principal	"We have a culture of learning. Students don't opt out. Students are expected to be engaged."	Culture of learning. Students are expected to be engaged.
Assistant Principal	"One of our main things [here] is…no opt out. Students are not allowed to opt out here."	No opting out.
Teacher 1	"We don't hide students' data from them. They track it and they set personal goals…They want to know how they're doing. They're just motivated."	Students track data. Students set goals. Students want to know how they're doing.

Strategies for Nurturing Student Growth Mindset. Teachers, staff and school administration are strategic, using intentional communication with students as an avenue for nurturing a growth mindset. Some of the communication focuses on learning assessments. One teacher commented on the way they talk about assessments as,

> A lot of times I think testing is seen as icky. We want kids to know that these are all interactions that are good for you. They're all opportunities for you to show what you know and get some praise and to get some feedback…You're assessment is a chance. It's not something to fear. It's a chance to celebrate, to show off what you've learned.

Another staff member shared that students buy-in to the growth mindset around testing.

That teacher stated, “The kids are really proud of [their data]. They will go back to their former teachers and tell them ‘I met my goal!” Students at the school seem to know what their learning goals and targets are and they get excited when they meet those learning targets.

Another way that staff members help students to develop a growth mindset is through cheers and chants that are used to motivate and inspire students to try harder. There are several school cheers that are used to motivate and praise each other. The cheers are used in assemblies and in classrooms. One teacher commented on the cheers by saying, “There are a lot of different [cheers] we use to praise…[My students] know them and they love them.” One of the most frequently reported chants in the school is “level up.” The principal reported,

> I don’t feel like I ever go into [this] class without hearing the words ‘level up’. It’s like [students] are Super Marios in there. It’s like ‘let’s level this up’…I hear cheers in [another teacher’s] class more than any other class. It’s a pervasive part of teacher to student language.

As reported by the principal, “level up” is heard in many classrooms and originates from how you can advance to a higher level in a video game. However, at the school it has a different meaning. A teacher explains level up in this way, “Level up is that concept of ‘what can we do to enhance this?’ How can we edit and revise this and make it better?” She continued,

> Some of [leveling up] is about rigor. It’s really about getting yourself to stretch…We really want to push for an expanded response. Use your fancy vocabulary! Let me hear your academic words…This is a chance to show off. We want to see your best stuff.

Teachers use level up to encourage an expanded response from students. They use it to communicate to students that they can push a little harder and do a little better.

Finally, the principal talked about how he and the school staff view their students and what is important for them to focus on to help students to learn and to develop a growth mindset. He says, “I’m gonna make sure [students] know how to read and make sure [students] know how to do math because that will help [students] believe in [themselves] more than anything.” He continued by stating,

> We’re an anomaly…[we have] a chip on our shoulders. We’re kind of renegades. We’re gonna keep pushing. We’re gonna work hard. We’re gonna push the kids beyond where they’re comfortable because they can do it! They have the capacity to do it.

From these statements, we can see that an important part of the relationships in the school are focused around developing a growth mindset. This mindset is not just developed among the teachers and staff members, the students are also supported and expected to be active learners who work hard.

Celebrations. Finally, the last relationship element that was emphasized by staff members for Patzun Elementary was celebrations. Staff members have several methods for celebrating. Teacher celebrations were emphasized less then student celebrations, and the ways of celebrating teachers was not clearly explored in the data collection process. However, one staff member made a reference to staff celebrations by stating, “Teachers are celebrating each other.”

More references made to student celebrations in the focus-group discussions and interviews could suggest that the student celebrations were more significant. These celebrations were given under various circumstances like improved student attendance, student academics and student behavior. Some of the ways students were recognized are found in staff member statements in Table 9. The celebrations were used to encourage students and to help them continue to work hard. As seen in these statements, students and teachers received recognitions for their work. And, students were encouraged and recognized for academics, attendance and good behavior as reported in the qualitative data.

Table 9

Patzun School Staff Members' Quotes Regarding Celebrations

Participants	Quotes	Elements of Celebrations
Principal	"Students are praised for doing well both behaviorally and academically. There are weekly recognition assemblies praising students for good attendance. [Teachers] recognize students on a weekly basis within the classroom for outstanding behavior, and as students of the month."	Students are praised for behavior and academics. Weekly recognition assemblies. Weekly classroom recognitions for behavior.
Teacher 1	"We have an assemble every Friday that celebrates students in all kinds of different ways…I think celebration is another really big part of our school culture."	Weekly assembly to celebrate students. Celebration is a big part of our culture.
Teacher 2	"We do a lot of celebrating which…builds us up and our students up."	Celebration builds up students and teachers.

School Leader Characteristics

The school principal and assistant principal characteristics were not extensively explored or reported in this study. The only characteristic reported was *being open and vulnerable.* This cultural element is described below.

Being Open and Vulnerable. Being open and vulnerable are leadership characteristic descriptions that reoccurred frequently in the qualitative data. School staff members noticed that the school leadership (principal and assistant principal) was willing to be open and vulnerable by not hiding areas where they need to grow and improve. One of the school teachers described this leadership characteristic in this way,

> When your leaders and your mentors are honest, vulnerable and open, and they share their concerns with you, it [produces] this umbrella effect, an overarching effect that if they're going to be open with you, you feel safe to be open with them. And I think that [creates] a culture of mutual respect. And we're all in this together…we're all trying to meet the same goals. It helps us to just follow [our] leader.

The principal also reflected on the openness and vulnerability at the school by stating,

> Vulnerability, trust, being honest and open, I think these are critical pieces to our sustainability…I was on a teaching team that had these four things and we were able to talk honestly about data and truly converse about improving student outcomes because we were not so busy hiding behind the data…I feel that's been the heart of [our success]. It's the coaching model and the data-focused culture that has created a safe space where we're focused on being better educators to support our kids. We're not hiding…we're not [avoiding] talking about data.

As described by the school principal, an area of openness and vulnerability was found in the school staff members' willingness to review student data, and not blame, or give excuses. The school was very focused on building this culture of openness in regards to student learning and increasing instructional skills among the teaching staff. At Patzun Elementary the school leadership exemplified openness and vulnerability.

In summary, as part of the overarching domain of sociocultural context, the taxonomic element of relationships among principals, teachers, school staff, and students identified with these data contribute to collective teacher efficacy. The sub-elements of the taxonomic element of *relationships* were: *closeness, trust, unity, effective communication, growth mindset and celebrations*. The sub-element of leadership characteristics was *being open and vulnerable.* All of these elements have significant contributions to collective teacher efficacy.

Actions and Processes

This section of the study includes findings that answer research question number three: “What are the actions and processes of teaching staff and principals at high-achieving Title I eligible schools that nurture and sustain collective teacher efficacy. School staff members, including teachers and school leaders, reported school processes’ substantial influence on the sociocultural context of the school. When asked about the critical cultural aspects of the school that contribute to student success and CTE, teachers and school administration identified the school processes as a primary cultural element. The principal explained how the school systems and processes helped to build teacher success and belief when he stated,

> I think that helping teachers do meaningful work goes a long way…A connection between inputs and outputs [is important]….We put in hard work but we see it pay off…. Teachers are seeing that they’re working hard and it’s benefiting their students. I feel like some schools are not able to see that. All schools are working hard but sometimes people are working on the wrong things. Because we have systems in place that help teachers work on the right things…working on things that are beneficial for kids, not just working hard for the sake of working hard…teachers feel supported. They feel valued.

The principal continued to explain the value of school systems, “We have systems in place…The systems support teachers…If something is not going well, behaviorally, or academically the systems catch that and we have a solution in place.” The assistant principal added by saying,

> It is the systems that the school has and how people fit into the systems [that contributes to the school culture]…even if some of the [people] leave, and someone replaces them, I feel the systems are there to help that person adapt to the culture, especially when it comes to our PLCs.

Clearly the school processes support teachers in their work. The taxonomic element of school processes also has sub-elements that help to define the school processes at Patzun. As such, the taxonomic sub-elements that comprise the construct of school processes include: *PLCs/TDMs, faculty meetings, goal setting* and *new teacher onboarding.*

PLCs/TDMs. One of the primary processes that the school prioritizes is professional learning community (PLC) meetings. While referring to the value of PLCs, the literacy coach said, “One of the systems that has supported our continued growth is PLCs.” Because the school focuses so much on using student academic data, the school regularly calls PLCs TDMs which stands for team data meetings. Staff members use the terms PLCs and TDMs interchangeably. According to the principal, TDMs are always focused on using student data to help school staff members identify student academic needs based on different assessments. He explains, “Because [TDMs] are data meetings, there always needs to be a data artifact that’s examined.” The school staff members and administration pride themselves on their openness and comfort level with reviewing and sharing student learning data. The regularity of TDMs and the use of data helps to build a culture where teachers are willing to review student learning data without fear of negative consequences.

TDMs have a very clear sequence from week to week, and they have very clear functions. These meetings generally use three types of agendas. Those agenda types are, *block planning*, or backward-design planning, *common formative assessment (CFA) review, and interim assessment reviews*, or “data dives.” The regular sequence of these types of TDM agendas begins with the block planning agenda.

Block Planning. Block planning is backward design planning for a 6-week period. During block planning, the teachers and instructional coaches answer questions like, “What are the things we want students to be covering over this unit?” Teachers, instructional coaches, and school administration make plans to ensure they “have a vision of how to get there.” The block planning helps teachers to make sure they are teaching all the standards successfully.

CFA Review. Next in the sequence of TDM agendas is the review of weekly assessments. During the second through sixth weeks of TDMs, the agenda includes processes to guide the staff through a review of common formative assessments (CFAs) that occur weekly throughout the 6-week instructional block. These meetings are used to determine which students are successfully learning and which ones need learning interventions. So, some time is also given in these meetings to develop plans to reteach struggling students. One teacher explained the process as,

> We do block planning. We plan for a unit at a time and we identify a learner-centered problem, or big-rock standards. But, we also target a subgroup…[with] the kids that we’re most concerned about. [We ask], who are the kids that might be needing a little extra love in these six to eight weeks to make sure they meet expectations?

As explained, the second type of TDM agenda guides teachers through a process that reviews weekly CFA assessment data and supports them with planning learning interventions.

Interim Assessment Review. The final type of TDM agenda is a review of larger benchmark assessments. These meetings are also referred to as “data dives.” Teachers used interim assessment data in reading and math four times/year. Interim assessment data dives gave teachers time to review these interim assessments in a deeper way. The data analysis was then used to start the TDM process all over again with a block planning agenda following the data dives.

The structures and norms for TDMs also served to help school staff members to be intentional about how they used their time in meetings and in their classrooms. Several school personnel reported the importance of the TDM structures. These statements are found in Table 10. The quotes indicate that TDMs were well structured and had a clear focus on student learning. Agendas helped teachers and instructional coaches to be effective and efficient. Staff members' roles and responsibilities are clearly understood. For example, teachers in each grade level team take turns preparing agendas. There are usually two teachers per grade so one teacher usually sets up the agenda for math and the other teacher sets up the agenda for reading. They also submit their TDM agenda to the instructional coaches 48 hours in advance of the meeting so the coaches can review the agenda. Coaches review the agenda and prepare to support teachers during the meeting by finding helpful resources. The coach or a lead teacher facilitates the meeting and administrators are there to ensure the process continues to run as designed. Furthermore, coaches often model strategies and lessons during TDMs. They also coordinate literacy intervention adjustments with reading staff based on data findings in the TDMs. The principal summarized the significance of TDMs by stating,

> Data discussions start in TDMs, but they don't end in the TDMs…Some schools go through the process to say 'yep we did it'. [At Patzun] it's, 'let's get back together and talk about [student learning] some more…As a team we're going to talk about this further'. The data actually means something to the teachers because if they were just going through the process, it would stop [after the TDM]. But, the fact that it's carried out means that [the plan] is intended to be acted upon intentionally.

As such, the principal explains that TDMs are not just a process that teachers and staff members do, it's an integral part of their instruction.

Table 10

Patzun School Staff Members' Quotes Regarding Team Data Meetings

Participants	Quotes	Elements of TDMs
Assistant Principal	Our PLCs are running really well here. We are focused on students and student outcomes…Our main focus is always our students and what we are doing to help them to be successful. That has a lot to do with our systems…We all have this common goal. It's not about complaining for 45 minutes, or let's talk about random things…our coaches are very prepared…our teachers are handing in data beforehand so that when we're in our PLCs we're focused."	Ran well. Focused on student outcomes. Coaches are prepared. Teachers submit data beforehand.
Instructional Coach	"PLCs are a big block of time…It is really important how we use that time…With lots of students who are MLLs and high poverty, that means that our kids have certain challenges that we need to address…So, being really intentional about how we use our instructional time and thinking about the precise language that we're using with kids, what kinds of words are in their ears and coming out of their mouths, that can come out of their pencils later [are very important]."	Intentional about using instructional time. Think about precise language used with students.
Teacher 1	One of the things that I've enjoyed about [Patzun] is we have a lot of templates in place for PLC meetings and agendas…there's a written record in a way that I haven't seen at other schools. So, that helps keep you more accountable for how you're using time.	Templates for PLCs. Written record.
Teacher 2	"With PLCs you have to agree this is not a complaining session. This is a planning session. This is us getting things done. We stay on schedule."	Not a complaining session. A planning session.

Faculty Meetings (Positive Behavior Interventions and Support [PBIS] and Evidence-Based Instructional Strategies [EBIS] Committees). Faculty meetings were another important school process that was reported as a contributor to their school success and culture. Faculty meetings were used to help teachers improve instructional quality and to promote improvements with schoolwide behavior management. To plan and organize professional development and growth in these two areas, nearly the entire teaching staff were divided into two different committees. The committees were called the *PBIS committee*, and the *EBIS committee*.

PBIS Committee. The PBIS committee focuses on addressing student behavior. One example of a PBIS agenda item at Patzun is the development of decision trees and behavior flowcharts. The school staff members refer to the decision tree as a "consequence hierarchy." The hierarchy provides consistent school-wide consequences for student correction based on the student behavior. Teachers in the PBIS committee help to develop the consequence hierarchy and then they share it out with the rest of the school faculty. Other recent examples of PBIS agenda items included communication systems that allowed teachers to text for help with getting behavior support team members to respond to classroom needs, social emotional learning (SEL) which includes 40 minutes/week of SEL lessons and mindfulness breathing strategies, developing a schoolwide response to attendance concerns and providing modeling for how teachers should log behavior incidents in the school's behavior data reporting system.

The PBIS committee was also identifying ways to celebrate students and teachers for good behavior and for academic effort. The counselor expressed her thoughts about the importance of the PBIS committee by stating,

> I think that celebration is another really big part of our culture that goes along with our PBIS system. We have really strong PBIS systems that we're constantly evaluating…we're always looking at [the processes] to see what can be better. Coming into our school as a counselor was amazing because every other school I've been at there's always been talk about needing a school-wide system to address behaviors. There was already a system in place for really positively-focused things to do for student behavior.

Another function of the PBIS committee is to review behavior data, or other data sources to identify needed school improvements related to student social well-being and student behavior.

EBIS Committee. This committee addressed instructional quality. EBIS committee members meet to plan professional development and support schoolwide instructional improvements. For example, committee members help to organize, plan and review peer observations. They discuss how well the observations are going. They structure peer observations so that they occur four times/year-once per term. Peer observations can be with teachers in or out of the school. These observations are used to "watch their peers in action and their motivations vary." Peer observations are often used by staff to enhance a specific skill/practice, or to observe someone else's instruction. Teachers seemed to enjoy the peer observation process as seen in this statement,

> We're supposed to observe each other quarterly. That's something that I didn't have in my previous school. I've always loved observing other teachers…It is really powerful. At the beginning of the year we list the things we we're good at and areas where we want to grow. It's strategic. [We can see when] someone is really good at a particular teaching strategy.

Other topics discussed and developed by the EBIS committee included teacher training on early literacy instruction which was being done schoolwide. They found evidence-based instructional strategies to share in faculty meetings. Some evidence-based strategies that the EBIS team had been working on were identifying student learning targets, establishing success criteria, and using "various forms of student feedback." The committee had also been working on metacognition strategies, collaborative conversations, accountable student talk and "no-opt out" which is the process used to hold students accountable for student work completion. The EBIC committee also helped to develop processes that were used in the school TDMs, or PLC meetings.

Goal-Setting Processes. Schoolwide goal setting for teachers and students goes hand-in-hand with the school data-focused culture. Each year, school staff members, school leadership and community members review data and set schoolwide goals for the school year. These common school-wide goals are written for four different areas (reading, math, culture and an achievement gap goal). The goals "are developed in faculty meeting." During faculty meeting, school staff members review various data sources. Then they determine school and student needs. School administration, teachers, instructional coaches and staff assistants then refine the goals. The school community council is then allowed to review the goals and give feedback and suggestions. One teacher commented that,

> [Common goals] sets the tone for our school and give us that shared focus and keeps us on track…We make intentional goals that we think we can meet and we adjust and modify them throughout the year…[With] our communication and open vision I think this school is the clearest. I know it's the clearest and most focused school I've been in.

Further, each grade level team sets goals for these four areas as well. The grade level goals act as "sub-goals" for the school-wide goals. Teachers set individual student growth goals and professional growth goals. The assistant principal explained that the goals were reviewed often. As staff members analyzed data related to their goals, they made periodic adjustments to their goals. The assistant principal explained the process this way,

> Two or three times a year we're really looking at those goals and going back to them and seeing how we can adjust them as we go…and then we decide to pivot, to increase the goal…we're always trying to move [the goals] higher.

The school often talked about pivoting while using data. They pivot when they review data and adjust goals. This process helped the faculty members to be responsive to students' needs.

Student goal setting is also a meaningful cultural element. Teachers help students to review assessment data and set goals. One teacher described some of the benefits of the student goal setting process in this way,

> Our students are really aware of where they stand academically. We don't hide their data from them. They actually track it and they set personal goals. When we take our assessments, [students] want to know how they're doing. They're just motivated. I think that goes along with our culture. We're all on the same page together. Even the students. They're motivated and excited…The kids are part of [refining our teaching] and helping us become better teachers.

With students being part of the goal setting culture, students are aware of their growth and they feel motivated when they see their data and their progress with their goals.

New Teacher On-Boarding. One final process that has a meaningful influence on the sociocultural context of the school is the new teacher on-boarding process. This process begins when new teachers are hired. The principal meets with the teachers before school starts to review "tools and words that [are] use in the building." For example, the principal goes over a glossary of terms, cheers, chants and methods for communicating with students. He also reviews a CFA template and how it is used. He explains how to put student data in the data template used during TDMs. He reviews the TDM agenda. He reviews how the confidence matrix works.

New teachers also get assigned a mentor (usually a grade level peer). This helps to ensure that new teachers are partnered with an experienced educator as a mentor. New teachers also worked with the instructional coaches. They attend a weekly coach's planning meeting one-on-one with a coach. This meeting is used to help new teachers plan the weekly curriculum. Mentors also helped new teachers with classroom management and school-wide routines.

New teachers were also invited to observe experienced teachers inside and outside of the school. Teachers were also observed and coached by peer assistance and review (PAR) consultants. PAR consultants helped to observe new teachers, provide feedback and at times co-teach. This support is provided to help new teachers to be successful. However, it is also provided to ensure that the processes and systems continue to function well at the school.

School processes, as a primary taxonomic element and a significant part of the sociocultural context, support student learning and teacher development, and they provide structure to sustain and nurture CTE. The level 2 taxonomic elements that make up the school processes and that also contribute to nurturing CTE are: *PLCs/TDMS, faculty meetings, goal setting* and *new teacher on-boarding.* These cultural elements have been described to provide a list of possible mechanisms for developing CTE.

School Leadership Actions

Several leadership elements were found through the data analysis process. Leadership characteristics and actions in this report were categorized in a few elements such as: *effective communication, shared leadership, building trust, mentoring teachers, being visible, and a student-learning focus*. In this section of the report, these cultural elements will be explained in greater detail.

Effective Communication. As alluded to above, and related to openness, is school leaders’ ability to communicate effectively. Because effective communication was such an important leadership skill, it was also categorized as a major cultural element. Two parts of effective leadership communication at the school was described as being *efficient and* having *clearly stated expectations*. These two elements of communication helped to define effective communication for the school.

Efficient leadership *communication* was described as providing sufficient information to school staff members in a timely manner. This means that emails or texts were used when effective. It also means that meeting time was not wasted on redundant, minor details. One teacher provided an example of how the principal practiced efficient communication by stating, “I don’t feel like my time is being wasted…because [the principal] writes a weekly newsletter that has all of the details…we need to know.” This same teacher expressed appreciation that faculty time was carefully used on things that could not be done via emails and chats.

Efficient communication includes how well and how quickly school staff members can communicate their needs to school administration and is also an element of effective communication. The principal has built a communication system which includes a texting application that helps him and his behavior staff to respond quickly to classroom and teacher needs. In reference to the effective response to teachers’ messaging for help, the principal commented, “The expediency in which we can address student needs [allows us to] focus on the task at hand.” Teachers mentioned that this communication system helped them to feel safe and confident knowing that they have school administration support.

Effective communication also relates to *clearly stated expectations* and then addressing issues that arise when those expectations are not met. The school principal explained the importance of clearly communicating expectations when he said, “It’s important to be clear and explicit about expectations…Clarity of expectations and a concrete timeline…some people benefit from that.” He continued, “I try to work for clarity…articulating things clearly…regular clear communication is huge.” Much of the clarity with communication related to school structures, meeting norms and instructional practices. Other principal comments regarding establishing and adhering to those norms and having “crucial conversations” are found in Table 11. The principal valued clear effective communication and he used it to support school norms and processes. As seen in these data, school leadership actions and characteristics included effective communication as described above.

Shared Leadership. Shared leadership was primarily developed in teachers through: *committees* (PBIS & EBIS), *PLCs/TDMs* and *the development of goals*. The school principal built shared leadership opportunities during *school committee meetings* and professional learning community (*PLC*) meetings. As mentioned earlier, the school had two different committees. One committee helped to address student behavior and student social emotional needs. This committee was called the Positive Behavior Interventions and Support (PBIS) Committee. The other committee directly supports instruction and student learning and was called the Evidenced-based Instructional Strategies (EBIS) Committee.

Table 11

Patzun School Principal Quotes Regarding Effective Communication

Participant	Quote	Elements of effective communication
Principal	"We establish and adhere to meeting norms…I'm consistent in my response and expectation of myself and others."	Consistent response and expectations
Principal	"Our committees have meeting norms…[I] remind us of those norms when we're deviating…We determine what commitments we have and we stick to those. We make sure that we're fulfilling said commitments."	Principal reminds others of norms.
Principal	"It's important to care personally and challenge directly. So, build a good relationship. But also, when something is not working the way it should…then directly address [the issue]."	Care personally. Build good relationship. Directly address the issue.
Principal	"If there's something not right I don't let it linger too long. Some things will resolve themselves…other things I know if it's not addressed it's just gonna become something more problematic."	Don't let it linger too long.
Principal	"If you're fair and clear, people are good about meeting expectations."	Be fair and clear.

Shared leadership was seen at the school through teachers and staff members ability to lead and contribute to school initiatives through these school committees and meetings. The principal further explained how these committees provided leadership opportunities,

> We have committee meetings where teachers have an opportunity to develop leadership…and then individuals are able to facilitate those meetings…Everybody on the faculty…determines who will be representatives for each of these committees [EBIS & PBIS]. I allow them to decide which [committee] is going to be of most benefit to them.

The committees provided many leadership opportunities for teachers though teachers' participation in developing professional development and making schoolwide decisions on how to make improvements.

In addition to committee meetings, *PLCs/TDMs* were also used to develop leadership. The principal said, “Because we have two teachers in each grade level…one of the teachers is responsible for developing the [TDM] agenda for one subject and then the other teacher is responsible for developing the agenda for the other.” Through these opportunities to facilitate meetings and develop agendas, teachers contribute to the leadership roles in the school. They are more engaged and have greater ownership of the school development.

Shared leadership was also observed when school administration involved staff members and community members in the *development of school goals*. The shared goal setting process was briefly explained as,

> [Faculty members] are part of the development of our school goals. Then once the faculty has determined that the goals are reasonable and attainable…we have a conversation with our school community council to weigh in, or give input on adjustments that they would recommend.

The principal and assistant principal sought input from teachers, coaches, staff assistants and community members while developing school goals as part of the shared leadership provided at the school. As such, the school administrations’ focus on shared leadership was reflected through the school’s committee meetings, PLCs, and goal setting processes.

Building Trust. The trust that the principal built between himself and others was an important cultural element. This trust contributed to the strong relationships at Patzun Elementary school. Sub-elements that make up the construct of trust at Patzun are *being accessible, getting to know others, modeling competence, celebrating teachers and trusting others*.

One of the ways that school leaders strengthened trust was by *being accessible*. The principal emphasized his accessibility with school staff as part of the process of building trust. He stated, “I make sure I’m available…even out of the school year, I will respond in as timely a manner as possible [to staff members’ emails].” One teacher shared how this accessibility and trust helped staff members by saying, “We feel like we can go to [the principal] and just talk to him.” This focus on being accessible aided in building trust and supported the open communication.

Another way that the principal and assistant principal built trust was by *getting to know others*. The school administrators worked on getting to know the teachers and the students. The assistant principal emphasized this point by saying, “we both know about 95% of our students’ names in the building.” The school leaders tried to know their students in order to better help them. They also spent time building trusting relationships with teachers and staff members by getting to know them. The principal said, “I intentionally get to know the teachers and know what is the best way that they feel supported.” By taking time to know the students, teachers and staff assistants, the school administration contributes to the trust felt by others in the school.

Next, the school administration-built trust through their ability to *model competence*. By providing classroom and school behavior management and effectively addressing student behaviors, the principal and assistant principal built trust. In regard to addressing student behaviors, the principal stated, “[Teachers] rely on us a lot to help with behaviors and academics.” Their abilities and examples when addressing student behaviors contributed to the trust found at the school.

The assistant principal also models competence when he willingly does what he asks the teachers to do. While talking about teaching lessons in front of the teachers, the assistant principal stated,

> We don’t ever like to propose things and then not do it ourselves…I [model] a mindfulness lesson for about five minutes in faculty meetings with the teachers because it’s not fair that I’m preaching it and then not practicing it.

By showing the teachers that they (the principal and assistant principal) are competent and credible, trust is strengthened.

The school principal finds ways to *celebrate teachers* which also contributes to increasing trust. The principal stated that, “We [find] regular ways of celebrating teachers. We celebrate teachers at weekly assemblies. We celebrate teachers in my weekly messages. I always celebrate staff members for the work they’re doing…so they feel listened to, responded to, trusted.” At Patzun Elementary school, teachers as well as students are recognized for their efforts.

One last way the principal helps to build trust is by *trusting others*. He trusts in teachers’ skills and abilities. He gives teachers autonomy and seeks to demonstrate the trust he has in teachers by not micromanaging. The principal said, “There’s no need to be over [teachers’] backs. We have a tight/loose kind of structure. We’re really tight on saying this will happen. And then we’re really loose on how they’re going to make it happen.” He seeks to give clear expectations for the things that must be done a specific way, or the ‘tight’ things. However, for other things he allows for teacher choice. He says he is ‘loose’ on how it is accomplished. Teachers seem to appreciate the trust that school administration shows in them. One teacher commented,

> When we’re doing what we’re supposed to do, you need the trust from the admin that we will do it. Admin will still check in with us. We’re still accountable. But, we’re not constantly looking over our shoulders wondering if [the principal] is going to attack us. That’s why I can go to [our principal] and ask him [anything] without fear of what’s going to happen to me. And that makes a better environment for everyone.

The principal expressed his focus on trusting teachers when he said, “It’s a positive culture…I give teachers a reasonable level of autonomy. We have requirements and expectations. Autonomy means you’re not going to be micromanaged as long as you’re staying true to the expectations we have agreed upon.” He continued by saying,

> Teachers are not being micromanaged. They’re being trusted to use their professional judgement…within reason. We do have vertical alignment. We need to be using the curriculum. We use the pacing [guides]. We need to adhere to basic foundational structures so we’re not getting off track. But [allowing] autonomy and latitude…and trusting their judgement supports teachers in complexity… Sometimes we need multiple minds to problem solve…We realize that [education] has complex problems [needing] complex solutions.

The principal finds ways to give teachers autonomy and to trust in teachers’ abilities and skills. Teachers appreciate the confidence that is placed in them. Through being accessible, getting to know others, modeling competence, celebrating teachers and trusting others the school leadership builds the culture of trust.

Mentoring Teachers. Another leadership action is mentoring teachers and helping them to grow. Teachers were given support in many ways. The new teachers were given one-on-one coaching on the school’s PLC processes, curriculum development, data meeting processes and learning intervention systems by the school principal. Veteran teachers also receive mentoring support from school administration. One teacher commented, “The instructional level is very high here…it’s because of the [administration] and the support we get from them. Coaches and admin come in and give us feedback to help us grow." Regarding observing teachers, the principal said, "We're in the classrooms trying to give feedback as much as possible." Another teacher mentioned, "Observation and feedback is a common practice for administration and coaches in supporting the teachers." The school administration prioritizes teacher observations. However, they also encourage teacher peer observations where teachers observe each other as a form of teacher mentoring.

Being Visible. School administration focuses on being visible. They have a goal to be in classrooms often. The principal explained, "We make it a conscience effort to be in every classroom every two weeks." The school administration also focuses on being present, or visible with parents. An example of this is how the assistant principal does attendance home visits. He commented that,

> We do a lot of home visits. If we don't see [students] in two days, you can pretty much expect me and our counselor to be knocking at [their] door and just checking up on [them]…We're a neighborhood school so we usually just put on our coats and we'll walk to the house…We do a lot of home visits for tardies and absences…We'll say hey if you want, we can wait 10 to 15 minutes while you get [your child] ready and we'll take them to school.

Being visible also relates to being present and helpful. As mentioned earlier in this report, school administration seeks to help with classroom management, instructional skill development, teacher skill development and home visits.

Student-Learning Focus. At Patzun there was a student-learning focus. School leadership helped to establish this focus for school staff members and students. The principal and assistant principal set up systems and processes where teachers became familiar and comfortable with using student learning data to address student needs. A teacher reflected on the process of using student data by saying, "I'm always looking at [student data] and asking, ‘why is this kid on yellow?’…I’ll bring that student’s name to the forefront. I’ll say why did this student fall back so bad? And then we create a plan.” The assistant principal also expressed enthusiasm regarding the use of student data at the school. He stated, “It’s been really cool to see that we’re not scared to talk about data. Data is always in the forefront.” The assistant principal continued, “We talk about who we are going to push to be proficient.” This student-learning focus is a primary element of the school’s TDMs and of the EBIS committee in addition to the overall culture of high-expectations throughout the school. The principal supported these systems as part of his focus on student learning.

According to the participants of the focus-group discussions and interviews, school leadership actions and characteristics at Patzun helped the school to establish common norms and expectations for student learning. These characteristics and actions were also reported to support teachers’ and students’ growth, and to help create a safe and effective learning environment for students.

Escuintla Elementary School’s Description

Escuintla Elementary school is in a rural agricultural area in the state with a population of under 200. Escuintla Elementary is the smallest school in the study with only 123 students and only one teacher per grade. Escuintla has the third highest level of FRL percentage in this study with 61% of the student population qualifying for FRL benefits. Escuintla Elementary has a higher level of academic performance (AP) than all but three schools. As such, Escuintla’s academic performance score was 141 points which is above the mean when compared to the other schools in the study. Escuintla’s level of CTE was not as high as Patzun’s but it was above the average level of CTE for the participating schools with a CTE score of 100 placing Escuintla Elementary at the fifth highest CTE level.

Escuintla’s staff and school leadership had slightly higher levels of teacher experience and teacher education levels than the average experience and education than the other schools in the study. Escuintla’s teacher experience was scored at 3.3 which places the average experience level in the 7- to 10-year range. Although the level of teacher education was only slightly higher than the average, the level of education among the staff was scored at 2.8 which indicates that more of the staff had master’s degrees or better than all other participating schools.

Escuintla’s Historical Context

At Escuintla Elementary School the culture was reported to be a persistent positive service-oriented school culture. Staff members described the culture as a student-focused culture where staff members have trusting relationships. Staff members struggled to identify how the culture originated. However, many staff members asserted that it had existed at the school for many years. For example, the principal stated, “There is a schoolwide [culture], and I honestly feel like it was here before I came, it’s a passion to teach kids.” She continued by saying,

> One of my first visits to the school I sat in a quarterly data meeting…It was a very vulnerable setting because in our school with one teacher per grade there’s nobody to blame but yourself…I remember I left here…I called my husband and said, ‘Oh my gosh. It was just so amazing. I’ve never experienced something like that’…The culture was already here when I came. It’s a rare thing to find. But, it’s pretty special.

Teachers also reported that the culture had been persistent over time. For example, one teacher stated,

> I have a 19-year-old daughter who went to school here, and as long as I can remember, as long as she was in school, the school has had that [trusting unified] feeling. Like me coming into the school as a teacher, I always felt that. I feel like [the culture] has been here before I came.

An experienced teacher who had taught at Escuintla Elementary her whole career agreed that parts of the school culture had been at the school for nearly two decades. That teacher said,

> I've been at this school for almost twenty years…I was trying to think of a time when things didn't go as well. I know sometimes things weren't as good as they are right now. But, I still think everybody has tried really hard to do a little more then what their job requires.

Some staff members asserted that the persistent school culture may, in part, have been associated with the school's ability to retain staff members over a long period of time. One teacher pointed out the significance of staff retention when she said, "In our community, someone has to retire for a position to come open at our school. We don't have turnover. When somebody comes here they don't leave until they're done teaching." The principal also reported the strong teacher retention. She pointed out that she had only hired one teacher in her 5 years as principal. She further explained why she did have just the one hire over that time by saying, "The only reason it happened was our district [started hiring] instructional coaches…[one of our teachers] shifted out of the classroom into this new role. That opened a new position. Otherwise, I still wouldn't have hired a teacher."

The principal also explained that the school culture was so welcoming and supportive that some teachers at the school drove over 45 minutes to get to the school. She added, "[One teacher] still drives over here because she says, 'I just love the school.' She doesn't want to leave. So, she drives over. I have teachers who are willing to drive 45 minutes to an hour." The principal also shared her perspective that the local community members value and try to stay in their community. She said, "When you hire someone locally, they're going to stay." This desire to live and work locally may also have some connection to the persistent culture seen at the school.

Escuintla's Sociocultural Context

Escuintla Elementary's culture as reported by school staff members was a positive, and unique culture. Some of the descriptors used by staff members included words like a family feel, magical and awesome. The principal and teachers added other similar quotes about the overall school culture (see Table 12). Teachers and staff

Table 12

Escuintla School Staff Members' Quotes Regarding Overall Culture

Participants	Quotes	Elements of Overall Culture
Principal	"[It's] very, very good. Very positive…We've all mentioned it in one way or another, it's just that family feel."	Very positive. Family Feel.
Principal	"It sounds cheesy to say [the culture] is magical. But, really it kind of is…Like I said, it's kind of magical. I don't know how or why. I definitely don't take it for granted. I feel very blessed to be here."	It's magical.
Principal	"I feel so blessed at the school for so many reasons. It's just an awesome, awesome place."	An awesome place.
Teacher 1	"It's more of a family feel than a work environment."	A family feel.
Teacher 1	"People are happy to share [successes] with everyone so that everyone can feel the same success."	Happy to share successes.

members enjoyed the school culture. Staff member report that the school culture seemed to be a positive, supportive, and enjoyable place to work.

Similarly, to the reported findings for Patzun Elementary school, this section of the study will use the major theme: *The contribution of the sociocultural context to nurturing and sustaining collective teacher efficacy.* This theme allowed the primary researcher to identify cultural taxonomic elements that influence the level of CTE in Escuintla Elementary school. A taxonomy showing the theme and the related cultural elements is found in Table 13. This taxonomy includes the same two main domains as

Table 13

Escuintla's Taxonomy of the Theme: The Contribution of the Sociocultural Context to Nurturing and Sustaining Collective Teacher Efficacy

Domain	Taxonomic elements	Level 2 taxonomic elements	Level 3 taxonomic elements
Sociocultural Context: Staff Perceptions That Nurture CTE	Relationships	Desire to learn	
		Trust and vulnerability	
		Student-learning focus	
		Personal student-adult connections	
		Kindness and service are contagious	
		Extra unified effort	
		Informal communication and structures	Frequent Conversations Easily Responsive
	Leadership Characteristics	Humble	
		Empathetic	
		Appreciative	
		Supportive & helpful	
Sociocultural Context: Actions & Processes That Nurture CTE	School Actions & Processes	PBIS System	MUSTANG Strong Values Positives/Rewards MUSTANG Strong Cards Practice Slips
		Learning Interventions	
	Leadership Actions	Visible	
		Shared Leadership	

seen in the Patzun description. Those domains include *staff perceptions that nurture CTE* and *action and processes that nurture CTE.*

Staff Perceptions. Similar to this section of the study for Patzun, the results for Escuintla in this section help to answer research question number two: “What is the perception of teaching staff and principals of high-achieving Title I eligible schools regarding the sociocultural context of their school that nurtures and sustains collective teacher efficacy?” Staff perceptions for Escuintla were categorized in the following taxonomic elements: *relationships* and *leadership characteristics.*

Staff and Student Relationships. Through the process of ethnographic research as described by Spradley (1979), Escuintla Elementary School’s staff and student relationships have been categorized into taxonomic sub-elements. These relationship elements are *teachers’ desire to learn, trust and vulnerability, student-learning focus, personal student-adult connections, kindness and service are contagious, extra unified effort,* and *informal communication and structures*. These elements will be described, and school specific examples will be given in this section of the paper.

Desire to Learn. One of the things the principal identified as contributing to this unique culture was the teachers’ desire to learn. She explained that the staff were willing and ready to learn new things. Regarding teachers’ desire to learn, the principal said, “I think there’s genuinely a desire to learn here. The teachers crave it. They want to be better. They want to learn which you don’t get everywhere.” The principal also stated,

> Our kindergarten teacher is in her second year of teaching and she will have a master’s degree by the end of this year. Our second-grade teacher just got his master’s this school year. In the end, everybody except our first-grade teacher who is retiring has their master’s. It’s just that desire to keep learning, and keep

> bettering themselves which is rare to find.

It is important to restate that Escuintla Elementary had a higher rate of teachers completing master's degrees or higher than all other participating schools. This high level of teacher learning along with the teacher retention levels at the school seemed to contribute to the effective culture and success at the school.

Trust and Vulnerability. The school staff members had a strong trust among themselves. The teachers, coaches and aides trust the school administration. And, teachers trust the staff members. Part of this trust was also expressed at the school in the attitude that all school personnel are equals and everyone plays an important part in carrying out the school purpose. For example, the principal said, "No one is above anyone else…I think everybody's on the same playing field." Teachers also recognized reading aides as equals and they recognized aides' level of expertise as seen in this quote, "The aides are very well trained in the literacy stuff. They're trained as well as the teachers…The aides are trained and doing the same thing that I'm doing. So, I know they're getting it right." Trust, as explained in this way by staff members, describes the confidence that everyone has with their collective ability to succeed.

This trust goes deeper than a belief that peers and others are capable. It also relates to staff members' willingness to make mistakes and to learn new things because everyone knows that the culture is one of help and support. This allowed school staff members to be vulnerable. A teacher described this cultural aspect in this way,

> We try to make a safe environment for our students. I also think it's a safe environment for adults. I feel like we can be vulnerable. I can share weaknesses or problems that I have without being nervous…The aide or somebody will walk in my classroom and I'll say, 'I could use some help with these manipulatives.' I had

> an aide say, ‘Well, have you thought of this?’ I loved that she…would feel comfortable giving me advice…I feel [safe asking questions and getting advice] when it comes to our faculty meetings and we share successes and concerns…It’s so nice to be able to be vulnerable and ask for help without feeling belittled.

Another teacher added a similar statement,

> When we’re done [with interventions], I ask the aides, ‘How did that go?’ ‘Did you like [the intervention]?’ ‘Did the students like it?’…So, I just open up to them letting them know I care about what they think…We’re just being vulnerable with each other.

The trust and vulnerability at Escuintla seemed to help create a growth mindset at the school. This safe environment to share and support each other contributed to high levels of collaboration between teachers and other staff members.

Student-learning Focus. The school staff members were very intentional with ensuring student learning. The principal talked about the importance of using instructional time effectively. She said, “[There’s a] passion to teach kids…Every minute counts. In other words, we’re here to learn and we’ve got to get focused. We’re very committed to student learning.” Teachers at the school talked about the importance of helping students to succeed. One teacher said, “Everybody’s working together for the safety and success of the kids.”

The teachers and staff members also talked about the importance of reviewing learning data to adjust reading groups and interventions. The following statement gave some additional information about that process, “We meet [to review] reading groups [and ask ourselves], ‘Who do we need to adjust? Who’s not making progress?’” The teachers and staff members were also very flexible with interventions and instruction. For example, they might move students to do reading groups with different grade-level groups. Or, they might share curriculum materials to ensure that students are getting the instruction that they need.

Another example was seen when the first-grade teacher explained that she had gotten two new students who were struggling academically mid-year. The kindergarten teacher heard about the struggle with these two lower-preforming students. So, she gave the first-grade teacher some learning materials from her lower level class to help those struggling students. The first-grade teacher gratefully responded, “She saved me having to go out and research something that was at a lower level.” This example and others support the teacher reports that the staff members worked together to ensure student learning.

Personal Student-Adult Connections. When asked what was unique about Escuintla Elementary, one teacher responded, “Most of the students are known by name by all of the faculty and staff.” The principal further explained that the adult student relationships extended beyond students’ elementary school years. She stated,

> All of us are local from this community and I do think that makes a big difference. We know all of the kids…on a personal level. So, we care about those kids. You see them at ballgames. You see them at church, or you see them at the grocery store…We still run into [our] kids [in high school]...I go over to watch one of my own children playing and I see students who have been in our school…So, you still keep that relationship. I don’t think you really lose them. [The students] don’t go into the city generally and so they stay here. You still follow them over the years. And, you know their parents, or you have known them for generations.

The student-teacher relationships seem to be stronger in this small community due to the frequent and ongoing interactions between school staff members and students. Furthermore, there are also strong lasting relationships between students’ parents and school staff members in this small community. These relationships are likely to enhance the communication between teachers and parent and teachers and students.

Kindness and Service are Contagious. While conducting teacher focus-group discussions and interviews at this school, many examples of support and kindness were shared by school staff members. Additionally, staff members related stories of how staff members' examples of kindness and support led to others looking for ways to serve. The principal talked about this process in this way, "You see somebody else doing something good, or kind to benefit somebody else and you think, 'I could be doing that.'" The principals continued,

> I remember one of my aha moments is when I saw a teacher washing their hands at the sink…[When she was done] she cleaned up the whole sink surface area…I remember in that moment thinking, 'Gosh, I could do that.' By doing that it helps the custodian. It might free up some of his time. It might help him and make his life easier…It's moments like that that happen routinely where others look for ways to fill in for [each other]…where we see what we can do to serve [others]…I feel like positivity is just as contagious as negativity…It's that service, right? Maybe it's contagious. It's just a matter of showing that you care about somebody and looking out for ways that you could help them, or make their lives better.

Another example of this service-oriented culture is shared by a teacher who got help from other teachers after a late school night activity. She related the story this way,

> We had an activity last night…Teachers we were here from 6:00 pm to 8:00 pm. Eight o'clock comes and I had several people come into my room and help me clean things up…Teachers could have just walked out the door. The time was up. When somebody does something like that it makes me want to do a little bit more.

The teachers also recognize that there are times the culture of kindness and support spreads to the students through the example of others. A teacher reflecting on this cultural aspect mentioned,

> We look out for each other. We make sure we're all taken care of. That happens a lot. But, that also trickles down to our students. Like last night…there were papers all over and a couple of our sixth-grade boys…walked in to do a project and saw

> the huge mess. Before they even started, they just cleaned up the floor…It trickles down from adult to adult. But, also down to our students. It is very awesome.

Finally, the teachers recognized the model set by the principal which in turn helped them to do a little more and to be a little better. For example, a teacher reported,

> [The principal] works here way more hours then what is required…It just makes me think I can do that too. Then hopefully, if I do that too and I'm appreciative, you know and say thank you to an aide who's staying a few minutes extra, or giving ideas in class and the students hear me say thank you to the aide…I think it is a trickle-down effect.

As seen in the examples, teachers and staff members at Escuintla Elementary served each other. The examples of teachers and staff members also reportedly influenced students to help and serve others.

Extra Unified Effort. As was previously reported, the school had a clear focus on student learning. However, one of the more extensively reported cultural elements of Escuintla Elementary School was the way all staff members (principal, secretary, instructional coaches, teachers, and staff members) were willing to go above and beyond their expected assigned roles to support student learning. The principal explained this cultural aspect in this way, "[It's a culture of] stepping in, stepping up, seeing where you can fill in and [finding] who you can help." And "Whenever we have people out of the building, [we] will just say, 'So and so is gone. That's a critical spot that we need to fill. Who can fill it today?' We just try and help each other out." There were several other examples and quotes that support this element of *extra unified effort.* Table 14 includes some of these additional quotes and examples.

As seen in these quotes, the school staff members responded to student needs quickly. And, that responsiveness seemed to include all the school staff. Another

Table 14

Escuintla School Staff Members' Quotes Regarding Extra Unified Effort

Participants	Quotes	Elements of extra unified effort
Principal	"Our bus driver and an aide on the bus will come in and help at breakfast. They'll come in and open milk and help kids to eat. [They] serve milk if it's needed. Our custodian, aside from cleaning, teaches maturation for fifth grade. He steps in to help with [student] behavior if needed. Every aide wears multiple hats…Our PE teacher does lunch recess and she does reading groups in the morning."	Every aide wears multiple hats.
Principal	"It's rare that you find someone just kind of kicking back and just sitting around. Everyone feels the need to serve kids. So [we] find where we can help, where we can serve."	It's rare to find someone sitting around. We find where we can serve.
Principal	"Every adult here needs to play a part in working towards children's success…Our lunchroom, our bus driver, everybody recognizes kids for their good behavior. It's just this team effort of together we'll succeed, or together we'll fail. But, we'll go down together."	Every adult plays a part in student success. Team effort.
Teacher 1	"The custodian interacts with the kids constantly. He was just in our past assembly. We do a play, and he plays one of the characters trying to teach our MUSTANG Strong Values. The same thing with our secretary and the learning coach. [They don't act like] my position is higher than yours type of a thing. They're willing to step in…If I need to walk down the hall for a minute, our secretary will stay in my class. It's really nice…Our special education teacher does preschool and everything in between. She knows all of the kids personally. Even the ones that aren't on IEPs. She takes one of our reading groups…So, many people help. To me that's the biggest [part] of our success. We have so many people that are willing to help no matter what their title is. We've got our principal and our reading coach doing reading groups. Our [special education teacher] takes one, and she takes more than just her assigned students."	Staff don't act like my position is higher than yours. Staff are willing to step in. Many people willing to help no matter their title.
Teacher 1	"I feel like I have support from every other teacher and our staff, you know the secretary and custodian…Everybody wants everyone else to be successful. There's no competition. It's all support."	Everybody wants everyone else to be successful.
Teacher 1	"Everyone's benefiting from someone's little bit of extra work."	Everyone benefits from others' extra work.
Teacher 2	"One of my biggest worries…was the fact that I would be the only kindergarten teacher. I didn't have a team to help me. I had never taught before and I was really nervous about that…Then I got here and everyone just jumped in. Our learning coach was amazing. I went to first, second, third grades asking for help…It was never a problem because…it boils down to how much everyone cares about the kids. No one here forgets what we're here for. Everyone here knows we're here for the kids and we want the kids to succeed. In order for the kids to succeed, we're gonna help each other because we all have that same goal. The biggest thing is how welcoming it is and all the support I got from everyone…So, that fear was just gone because I had more support than probably some kindergarten teachers get within their own team."	Everyone jumped in. Everyone cares about the kids. We want kids to succeed. In order for kids to succeed, we're going to help each other.
Special Education Teacher	"Our school does things differently than a lot of other schools…I'll take kids that are not my Sped kids, that are not on my load. But, I take them. I always keep a Sped kid [in the group] that we're watching. But, I think that's why we're able to have so much [staff support]."	Sped teacher takes students not from her case load.

aspect of the extra effort is how staff members do not seem to be concerned with hierarchy, or position in the school. Reading aides give advice, bus drivers help in the lunch room and the principal helps at recess. The extra effort from other staff members helped to create a supportive and efficient school.

One last example of how extra effort was seen at Escuintla was shared by a teacher, “Our fourth-grade teacher…had a very challenging student move in with a behavior and an academic plan…The teacher stated, ‘I could not have done it without all of the help and support that I’ve had here.” The school responded to this extreme challenge by teaming together and providing high levels of student support. The school principal formed a team of staff to support the student’s plan. This team “mapped out a schedule” where the student was in a small group or a one-on-one setting for the whole day for several weeks. The team also found curricular resources to match the struggling student’s academic level. The work load was shared to help support each other. The principal mentioned, “[We] used the team effort instead of just one person to avoid burning out.” The team included two or three aides, the teacher, the special education teacher, the principal and the secretary. A teacher continued to explain the roles of office staff by pointing out,

> The [principal] and the secretary played a huge part…our secretary right at the very beginning [was very helpful] while they were figuring [the schedule] all out. I’d come through the office and [the student] would be sitting there with [the secretary]. To make all of that happen, other people had to give up an aide…People had to fill in or step up…Or adjust in order for fourth grade to survive. To have a secretary and a principal jump in and have them sitting with [the student] - that’s what we’re saying about it not being their exact job description. But, boy that makes it nice to work here to know that if I’ve got a situation, everybody’s willing to sacrifice a little bit and be flexible to help.

The unique culture of going beyond expected roles and responsibilities seemed to helps create a unified and supportive work environment. The principal concluded by stating, “We know how unique we are. We know how lucky we are…We understand that it’s a unique situation where everybody’s willing to do whatever we have to do to make it work.”

This school culture of going above and beyond expected roles and responsibilities is reportedly one of the more significant cultural aspects according to the school staff members. When combined with the kindness and service cultural elements described earlier, plus doing whatever it takes to help students to succeed contributes to increased levels of CTE and student academic success.

Informal Communication and Structures. One final cultural element that staff members reported as being meaningful was the informal communication and structures that occurred regularly throughout the school. When asked about the different informal methods for communicating in the school, one teacher said, “We interact [informally] way more than formally.” The informal communication and structure may, in part, be a result of the smallness of the school building, the small numbers of staff members and a result of the strong staff relationships. For example, the principal commented about the ease of communicating in this small school by saying, “In the mornings I’ll just run down [the hall] and ask questions…because in a small school building you can walk right out your door. You can hear if somebody’s having a problem. There is only one hallway.” Another teacher, while explaining the ease with communicating at the school simply stated, “It’s the smallness and the open doors.” Yet another teacher expressed gratitude for the smallness of the school when she said,

> [The special education teacher] and [the principal], our instructional coach and the secretary, I love how I see them in my classroom, each of them every day…It's nice to know they're there…Somebody's in and out of my classroom all the time. It's easy to talk with adults and I don't feel like anybody's hiding in their workspace or office…Maybe it's the smallness of the school. There's only one faculty room. There' almost nowhere to go eat anything for lunch [in town]. Even when we don't have a faculty meeting, you walk in from the bus and everybody's just standing in a group talking about [what] went well. Or, I had this challenge. Then more people join the group and [we ask], are we having a faculty meeting?

The principal shared a very similar appreciation of the gatherings in the hallway. She added,

> Almost every day we'll come in from the bus [after school] and just kind of gather right there in the hall and start talking. The other day there were three of us, and then there were five us all talking right there. [A teacher] came walking down the hall and said, 'What? Did you guys just have another faculty meeting?' We just started laughing…This is that meeting that just happens. It wasn't a formal meeting. It was just people wanting to [get together] and just talk. We kind of joke about it being our therapy session.

The staff members reported that the school was small and intimate. They saw that as a positive school characteristic.

In addition to informal communication methods, the school also has informal systems. Many schools hold formal meetings with clear agendas to review student data and to respond to student learning. Often, these meetings are called professional learning community meetings (PLCs). However, Escuintla staff members reported a process that is less formal. When asked about PLC meetings, the principal explained that the school has struggled to find a PLC structure that works for them. In the past, the principal, instructional coach, and special education teacher would meet the younger grade teachers in one-on-one meetings on early Fridays one week. Then, the next week they would meet in one-on-one meetings with the teachers from the older grades. The meeting discussions focused on student learning and needs. They would ask searching questions like, which students need more help? Or how should we adjust intervention groups? The principal continued to explain,

> We've talked about bringing back PLCs again…So, typically PLCs happen with the team teaching on the same grade level…We only have one teacher per grade level because we're a small school. So, we haven't done those formal-type scheduled meetings this year. However, the conversations still happen.

The principal also explained additional challenges with running PLC meetings when there is only one teacher per grade level. She said, "In regards to PLCs…we have tried…Sometimes it's kind of hard because you're not teaching the same curriculum. You're not looking at the same data."

Even though the school does not hold regular formal PLC meetings to review student data and to adjust instruction, the staff members find ways to meet and discuss student academic data and to make instructional adjustments to ensure student success. The principal asserted,

> That conversation happens regardless if it's a PLC or not. As far as a formal PLC…it just doesn't work the same for us as it does in a school where you would have multiple teachers on the same grade level. It doesn't flow as naturally.

On face value, the informal nature of communication and structures might seem like a negative characteristic. However, at Escuintla Elementary, the informality seemed to lend itself to a more responsive way to address student needs. The principal pointed out how she can respond to adjusting small group instruction easily by just walking down the hall. She explained, "Passing down the hall, or in the library [it's easy to address student needs].... The library is where most of our aides run groups. And so, you come in here and you can catch four to five different aides and have that conversation if needed." The principal continued to explain how the ability to respond quickly to student needs occurs,

> For example, we needed to change reading groups…There wasn't a perfect time [to meet]. So, I found a person not involved in the meeting and put them in the classroom to sub for 30 minutes. I pulled the teacher and the reading aides and said, 'you guys go collaborate and we'll cover the class.' I was subbing for 30 minutes and another aide who wasn't involved with something for 30 minutes [covered the other class] so they could have that collaboration meeting.

The school finds ways to communicate and to address student needs without a formal meeting. However, as seen in the school state testing results, the students are still able to experience a level of academic success.

Principal Characteristics. Another element of staff perceptions is principal characteristics. Principal characteristics also had sub-level taxonomic elements. Those elements included: *humble, empathetic, appreciative,* and *supportive and helpful.*

Humble, Empathetic and Appreciative. The principal sought to give her staff members credit for the school success. When talking about the school's success, the principal stated, "I don't want to take credit…I can't take credit for all of it…It's a team effort anyway." She was quick to attribute successes to her team. In this way she exhibited humility.

She also talked about seeing people as people. She tried to always remember that people deal with different life experiences. She explained her desire to be empathetic by saying,

> It's important to see people as people whether that's adults or kids…When you get to know somebody, their background or their story, it makes you understand the situation a little better…Sometimes we don't know the background of what people are going through. So, just be careful. Be patient. The same goes for students.

The principal practiced empathy which helped her to be patient with others. She also made attempts to listen to others to gain a deeper understanding of others' situations.

The principal also showed appreciation towards others. One teacher explained the principal's appreciation this way, "One big thing is our principal always starts our faculty meetings with successes or celebrations." Another teacher continued, "We will come in and have a random written note on our desk, or an email saying how much she appreciates us. She just notices the things that we do." Her focus on humility, empathy and appreciation seemed to help her build trusting relationships with students and staff members.

Supportive and Helpful. A lot has already been written in this study about the supportive and helpful school culture. It is worth noting that the principal reportedly led out in this area by modeling helpfulness. The principal said that being helpful was a significant part of her school vision. She continued, "That's part of my vision, I find ways to fill the needs of the school." Her vision of meeting school needs was clearly seen when she described her typical day,

> Monday through Thursday from 10:00 – 10:30, I tradeoff between second or third grade…We do Read Naturally with kids for that half hour of time…Then I go in the lunchroom. I help with lunch. Most days I end up on the playground helping with recess duty because then there's two eyes on the playground instead of one.

The principal continued explaining her schedule by saying, "Yesterday, I was the librarian. Our librarian was absent so I went and read stories to our kindergarten and second grade."

The teachers shared other examples of the principal modeling helpful behavior, one teacher shared, "It really helps for your administration to be positive and more of a support then a critical person." The teacher continued by saying,

> When I was so lucky to get a job here, I immediately felt comfortable. Everybody made me feel really welcome. A big part of that was our principal…We know she has our backs. She's in our corner. We know that 100%.

Another teacher added that, "We hear, 'How can I help you?' a lot. 'Thank you for…', we hear that all of the time." The way the principal looked for opportunities to jump in and help her staff set an example and built teachers' trust and appreciation.

Actions and Processes. This section of the study once again helps answer the third and last research question for Escuintla Elementary. The third research question is, "What are the actions and processes of teaching staff and principals of high-achieving Title I eligible schools that nurture and sustain CTE?" The primary taxonomic elements of this domain are: *school actions and processes* and *leadership actions.* These taxonomic elements are described below.

School Actions and Processes. The school processes that were emphasized by school staff members were the school's behavior management system which they call the *PBIS system*, and the structured way that the school staff members implement student *learning interventions*.

PBIS System. As reported in the prior section of this study, Escuintla had few formal processes and meetings. Formal PLCs were not happening at the school. However, the school had a very strong positive behavior interventions and supports (PBIS) system. These systems help schools to establish clear rules and expectations. Effective PBIS systems also ensure that the rules are modeled and taught effectively. These systems help school staff members to emphasize the positive with what is known as a positive to negative, or positive to corrective ratio. This ratio helps schools to teach desired values and rules in a positive manner by school staff members recognizing and praising students for the desired behavior more often than corrections are given. Escuintla Elementary School used all parts of this system effectively. The principal expressed her perspective of the effectiveness of PBIS as, "We really embrace PBIS quite well." In fact, PBIS was so foundational for the school that when the principal was asked about the school mission and vision she said,

> Our mascot is a mustang. So, we use this phrase or saying, 'That's Mustang STRONG!' We all know that the saying means we have good behaviors…We start every assembly…I'll say, 'We are' and the kids say back, 'Mustang Strong!'…We repeat this three times…We recognize a kid from every class during a monthly assembly for demonstrating one of the Strong values...We do morning announcements everyday…I remind the students we are looking for students who are Mustang STRONG…We teach the STRONG values, one value per month throughout the year…In the end it's, 'We are Mustang STRONG!

The school rules and values were expressed in the phrase "We are Mustang STRONG." Mustang STRONG is an acronym for the different school values and rules taught in assemblies, common class rules and announcements. Mustang STRONG stands for self-control, team player, respectful, optimistic, noble, and grateful. These values were also rewarded in class and during school assemblies. The principal explained how the values were taught in school plays. She explained, "Every month we do a character ed assembly to introduce our new Mustang STRONG value…We use a scripted play called Marvin and Jesse to teach these values each month." As seen in these examples, the school taught values and expectations through the Mustang STRONG framework.

In addition to teaching the school rules and values, school staff members reinforced desired student behavior by recognizing and rewarding desired student behaviors. Part of the emphasize for recognizing positive behaviors came from the district superintendent. One teacher explained the emphasis from the superintendent as,

> Our PBIS has contributed to us trying to be more positive…Our district wants us to do five positives before you try to do a correction. I think when your administration is trying to promote that I think that trickles down.

One of the ways the whole school rewarded desired behavior was by using what they called Mustang STRONG Cards. The front of the card had the values listed on it. On the back of the card was a space to record the student's name and how the student lived the STRONG values. When teachers turned in the cards to the office for exceptional things students had done, the students got called down to the office and they got to place their name on a "Tic-Tac-Toe" board. When students' names formed seven in a row on the board, the students earned a reward. Some of the rewards included candy bars, ice cream parties, etc. All of the students who earned a prize for having seven names in a row also got their names put in a drawing which occurred during an assembly at the end of each quarter. Students whose names were drawn won bigger prizes like a $10 coupon to the book fair, a hydro-flask water bottle, or a pass to the local swimming pool or movie theater. Two bikes were also given as drawings at the end of the school year.

The principal pointed out another significant recognition when the cards were turned into the office. She said, "Anytime a student earns a Mustang STRONG Card, we make phone calls home to parents to let them know the good things that are happening." The staff members' recognition of desired behaviors was a valuable part of the school's PBIS system and contributed to the overall school culture.

The school also had a systematic way to respond to undesirable student behavior.

They developed a system that they called practice slips. As the name of the slips suggests, the way the school staff members responded to behavior infractions was by giving students opportunities to practice the correct desired behavior. The school principal said, “It’s a teaching opportunity. Not to be punitive.” Practice slips were used to help students to be accountable for work completion and to practice desired behavior in a nonpunitive way.

The practice slips were part of a clear consistent school-wide response to student behavior. The process relied on office and staff help. For example, each grade had an assigned time of day just before recess when the principal, behavior coach, or instructional coach check-in with each classroom to see if there were any practice slips that needed to be completed. If students refused to do work earlier in the day, or they violated the school rules in some way, students were given a practice slip to complete during part of their recess time. The principal and coaches split up the different grades and worked with students to complete their work.

The process for using the slips was a consistent school-wide process. When a teacher wanted help with student behavior, the teacher filled out a practice slip and set the slip in a box near the classroom door. That way the principal or coaches just had to look in the box to see if any students needed to complete practice slips. The principal shared an example of how the slips work,

> I remember one time we had kids in the bathroom who were throwing water all over the mirrors and just making a mess and so we did a practice slip. I took them down to the bathroom…and got the paper towels and Windex. They cleaned it. I took another minute to explain, ‘If you don’t do this behavior you don’t lose recess time’…That behavior didn’t occur again. So, maybe the lesson was learned.

The consistent response to student behavior in an instructive way that supported the school values and rules helped to establish a safe and supportive environment for both teachers are students.

Learning Interventions. The processes that school staff members implemented to respond to student learning needs were not always formalized. However, the consistent way students received needed intervention was consistently implemented. Teachers shared different ways that the interventions were adjusted, or different ways to review the data. For example, one teacher reported,

> I have an ELL student who missed the entire first quarter of school. Their family was in Mexico…She's way behind. She can't write or anything. While I'm teaching math, our learning coach comes and gets her out and does one-on-one instruction…So that helps me out because it helps a student out…[The student] also has reading group. But, that hasn't been enough. So, then we have an aide who takes her in the afternoons and does one-on-one [instruction] working with her letter sounds…Again, somebody had to move [their schedule] around and make it work…So, she gets pulled three times a day to try and catch her up.

This teacher and the staff members prepared multiple intensive interventions for this student because that is what the staff members believed was needed. Another teacher explained how her students received learning interventions in a different way,

> I have a math aide who is just phenomenal…As I am doing my math lesson, I keep a sticky note with me and I jot down anybody who is not understanding, or having a little more difficulty then others. [The aides] pop in every day…and they just take [the students]. That is a daily occurrence.

This teacher simply wrote the students' names and their needs on a sticky note. The assigned staff assistant then took the student(s) and provided extra support.

The student learning data was also reviewed in different settings and situations. But, it was reviewed regularly. For example, when asked about the location where data was reviewed to address student academic needs, a teacher responded, “[The special education teacher] comes down to my room and says we’ve got to meet with the second grade, with you and with these aides. And then we meet.” In this example, the conversation started with the special education teacher who then organized an immediate meeting to respond. Another example shows that the reading staff will take the initiative at times. Here a teacher said, “[Staff assistants will come to us and say, ‘This [student’s] not fitting in this group. They are way ahead.’ We don’t wait long if it’s not fitting. We swap kids around within groups.” So, teachers, staff assistants and others can initiate conversations about students’ needs and in turn the team responds.

Even though the processes and steps taken to address student needs was not a formal school process, the consistent way that all students’ needs were addressed was a schoolwide process. At the school, staff members reiterated that they were all very responsive to student academic needs. A teacher stated, “We have individualized reading groups…We try to [meet students’] individual needs by putting them at a level where they can grow and be challenged.” The principal reinforced this idea by sharing, “I often said, ‘regardless if you have an IEP or not, we’re going to treat you like you do.’ Everybody here is put in small group instruction.” As seen in these examples, the lack of a formal PLC did not stop the school staff members from effectively addressing student learning needs.

School Leadership Actions. School staff members and the principal herself reported the following actions as being meaningful: *visibility* and *shared leadership*.

Visible. Visibility for the principal meant that she was out of her office and helping others as much as possible. She wanted to be in classrooms with students. The school teachers commented on how the principal was helping in the classrooms and throughout the school. For example, a teacher said,

> One thing I love about [our principal] is she always puts herself in the classroom…If we need a sub [she's] in the classroom. If somebody's gone…and we need someone to fill in she jumps in. She is constantly keeping herself in the classroom so she doesn't forget what it's like to be a classroom teacher. That makes a big difference for us as teachers knowing that she's willing to do that.

Other teachers shared similar thoughts. Additional teacher quotes about the principal's visibility are found in Table 15. The teachers recognized and appreciated how the principal was in the classroom and helping. The principal's effort to be visible gave her

Table 15

Escuintla School Staff Members' Quotes Regarding Principal Visibility

Participant	Quote	Elements of principal visibility
Principal	"Trying to get to my emails is kind of [what] I dread. I'd rather be involved with kids then sitting at my computer. In fact, when I took this job, I remember thinking, 'If I have to sit in an office at my desk all day, I'll go crazy."	Principal would rather be involved with kids.
Principal	"I went into education for the kids and that's why I'm here. It's not because I wanted to have a desk job and sit behind a computer…I try to keep relevant and keep connected to the kids and the staff."	Principal went into education for the kids. Principal did not want a desk job.
Principal	"I went down to fifth grade today. I've been in every class today to be honest…I just want to be involved. I want kids to know that I'm here. A kid's not going to talk to me if I don't have a relationship with the kid. I think it's really important to be seen…Seen as a contributor to the school."	Principal was in every class. Principal wants to be involved. Principal wants kids to talk to her. Principal says it's important to be seen/to be a contributor.
Principal	"Today, I was going in to fifth grade spontaneously stopping in…So, I stopped and I took pictures…I was involving myself…I feel like I just involve myself [in classrooms]."	Principal involves herself in classrooms.
Teacher 1	"[The principal] will come in and do a reading group. The kids are able to interact with her. She's just in there as one of the helpers."	Principal comes in to do reading groups. Kids interact with her.
Teacher 1	"With our administrative and office staff, I see them every day."	I see administration every day.

credibility and built relationships.

The principal also enjoyed being with her staff members and the students. She preferred being out of her office to doing paper and computer work. By being with the students, by interacting with them, she had a better chance of having a positive influence with them. The principal clearly preferred to be working out of her office with students and teachers. She volunteered to run intervention groups. She helped in the lunchroom and on the playground. At times she rode the bus with her students, and she was in classrooms every day. Being visible was something she enjoyed and by being with the staff members and the students, her relationships with others at the school were strengthened.

Shared Leadership. The principal valued involving others in the decision-making process. She recognized that by allowing teachers to have a voice and to help in the decision-making process, teachers were generally happier and had higher levels of engagement. She said, "I have a shared-leadership vision." She explained,

> I've worked in a school before where it was…like a dictatorship…People are unhappy with decisions being made [with] no input from others…I remember at that point thinking, 'This is kind of taking the joy away from the job'. And, so I've always tried to keep in mind the teachers' perspective…So, a lot of times I ask for input when making decisions…If possible, I try to involve teachers, or aides, or whoever…I try and involve them in the decision-making process…I think you get a lot more buy-in when you have ownership from others.

The principal shared that she was not a person who needs to control all of the decisions for the school. She was much more interested in helping her staff to share ideas and to work together. She expressed her intent in this way,

> I didn't go into this position because I love power. That's not my personality… It's not really important for me to have the power, or have the final say. I think

> it's important to get opinions from everyone and have that discussion. [I look for] a team effort in making decisions and talking out ideas.

One teacher shared a similar sentiment by saying, "We are successful because everybody has input." The principal has provided ways for her teachers to share their thoughts and ideas when it comes to schoolwide decisions. In this way, she gave the teachers some level of shared leadership.

The principal characteristics and actions have a significant influence on a school's culture and success. At Escuintla Elementary, the principal modeled humility, empathy and appreciation. She also led out with the support and helpfulness in her everyday acts. She was visible by visiting and helping in every classroom, and by volunteering and stepping in to help in many ways. Finally, even though it was not clearly stated by staff members, the principal's focus and support of reviewing student data and responding to student academic needs shows that she has a student-learning focus. These leadership attributes were also seen in the school staff members as they developed a school-wide culture of service, going beyond the expected responsibilities and building close relationships. These cultural aspects are a significant part of what makes Escuintla Elementary a successful school with high levels of CTE.

Inter-Case Comparisons and Connections with CTE

This section of the study reviews some of the similarities and differences between these two school cases. This section also reviews how some of the school sociocultural aspects, staff member actions and school processes relate to CTE.

Inter-Case Comparisons. There are some similarities between these schools.

However, there are also some clear differences. For ease of comparing the cultural elements, they have been compiled in Table 16 for each school. The similarities will be reviewed first. As the similarities are discussed, it can be assumed that these similarities may provide possible mechanisms for increasing CTE. It is important to note that this study is not intended to find statistical relationships between research variables and CTE. However, because both school cases have strong evidence suggesting that they have high levels of CTE, and they have high levels of student academic success as compared to other Title I eligible schools, the sociocultural context which includes school characteristics and school staff member actions may be considered as possible mechanism for increasing CTE.

Case Similarities and Common Sociocultural Elements. There are many similarities between these two schools when looking at the sociocultural elements. In this section of the study, many of these commonalities will only be listed because they will be described in greater detail in the discussion section. These common elements should be closely examined in order to identify strong mechanisms for CTE. As such, they are also referred to as primary characteristics of the schools. Those common central elements are:

- Closeness and Unity
- Trust and Vulnerability
- Effective and Frequent Communication
- Student-learning Focus
- Growth Mindset/Desire to Learn
- PBIS System
- TDMs and Learning Interventions
- Shared Leadership
- Visibility

Table 16

Sociocultural Elements from Both School Cases

Common primary elements	Patzun elementary school level 2 elements	Escuintla elementary school level 2 elements
Relationships	Closeness	Personal Student/Adult Connections
	Trust	Trust & Vulnerability
	Unity	Extra Unified Effort
	Effective Communication	Frequent Informal Communication & Structures
	Growth Mindset	Desire to Learn
		Student-learning Focus
	Celebrations	
		Kindness & Service are Contagious
Leadership Characteristics	Open & Vulnerable	
		Humble
		Empathetic
		Appreciative
		Supportive/Helpful
School Actions & Processes	PLCs/TDMs	Learning Interventions
	Faculty Meetings (EBIS & PBIS)	PBIS System
	Goal Setting	
	New Teacher Onboarding	
Leadership Actions	Effective Communication	
	Shared Leadership	Shared Leadership
	Building Trust	
	Mentoring Teachers	
	Visibility	Visibility
	Student-learning Focus	

Even though it is not listed in Table 16 as a common school cultural element, it is of interest to note that both schools had very high teacher retention rates. These high retention rates likely contributed to the feelings of efficacy at the school because teachers had more time to became very familiar with the different cultural expectations and processes to support student learning at their schools.

Additionally, it is important to note that trust and vulnerability were reported as both relationship elements, leadership characteristics and as leadership actions. The school staff members from both schools expressed the connection between being vulnerable and the effect that vulnerability had on building trusting relationships. When teachers were willing to be vulnerable to each other while sharing student data, or by sharing instructional strategies, this seemed to increase the level of trust between teachers and staff members. Similarly, when school leaders allowed themselves to be vulnerable through modeling or listening to others' ideas this also contributed to the level of trust in the schools.

Case Differences and Unique Sociocultural Aspects. There are a few unique sociocultural aspects found in these schools that may also provide clues for how these schools developed and maintained high levels of CTE. Additionally, it is important to note that the data collected from these schools is incomplete. Just because one school emphasized a particular sociocultural aspect while the other did not does not mean that the school not reporting that aspect does not possess that specific element. It simply means that the school staff emphasized different elements during the data collection process.

Patzun Elementary reported having clear, structured systems that support the teacher collaborations, onboarding, and curriculum development processes at the school. The clear structures, norms, agendas, chants, and meetings also seemed to support the work of student learning and provided clear expectations for teachers. This level of organizational structure is unique to Patzun when comparing the two schools.

Escuintla reported having structures for PBIS and interventions. Furthermore, it could be assumed that the school had many other structured systems. The reported difference is in the uniquely frequent informal discussions and prompt intervention adjustments that occurred at Escuintla. In some ways, it seemed that there were trade-offs between the highly structured processes at Patzun and the frequent exchange of information found at Escuintla. Patzun's structures helped to ensure that all staff members follow the specific expected steps to reach the desired outcomes. However, they seemingly relied heavily on formal meetings. At Escuintla, the process was reportedly free flowing and quick. However, it required a high level of shared expertise and trust. Both schools successfully met student academic needs. They differed in how they accomplished that goal.

Common Curricular Planning. Another notable difference found in the reported data from the schools is Patzun Elementary School's emphasis on instructional strategies and common curricular planning. The TDMs, PBIS and EBIS committees at Patzun provided a structure for staff members to work together to identify instructional strategies and plan for curriculum development. These committees also provided a forum to review data and to create schoolwide goals that guided the schoolwork. If there were concerns with behavior, or student learning, the data was reviewed in these committees and collaborative meetings. Actions steps and professional development training were then organized in these meetings as well. Additionally, Patzun staff members spent much more time explaining their student goal setting processes than Escuintla staff members. At Patzun it was reported that students know their academic goals, they ask for assessment results to be able to track their progress and they like to report their successes to others.

In contrast, Escuintla had a unique culture of service and went beyond assigned or expected roles. The principal led out with kindness and service and going beyond her assigned roles as mentioned earlier. Teachers also picked up on the service and going above and beyond expectations. One of the most telling examples of this service and not worrying about fixed expectations was seen with the special education teacher's willingness to participate in interventions for all students, not just students in her IEP caseload. However, this was also seen with the custodian acting in the plays that taught school values, or in the bus driver's willingness to help open milk at breakfast. This cultural aspect was reportedly widespread and meaningful at this school.

Teacher Onboarding. Patzun had clearly stated onboarding system. At Patzun, the on-boarding process included principal meetings where structures and systems were taught. Instructional coaches, mentors and consultants provide additional support. Escuintla did not report having a structured onboarding process. However, at Escuintla, the strong relationships and extra effort to serve others provided the support that new hires needed and appreciated. The staff members came together to teach and support the new hires.

By reviewing both similarities and differences at these schools many sociocultural elements provide meaningful possibilities for school improvement. As seen in these reports and by analyzing these reported sociocultural elements from both schools, it is possible to find ways for school leaders and researchers to increase CTE in all schools.

CHAPTER V

DISCUSSION

Researchers and educational leaders have long reported the challenges that students from non-mainstream families face within the current educational system. Substantial statistical data indicates children living in poverty experience an achievement gap when compared to other children (McFarland et al., 2019). However, other research suggests that the achievement gap might be more closely associated with low teacher expectations and low levels of teacher efficacy than student abilities (Goddard & Skrla, 2006). This study successfully identified several high-achieving Title I eligible schools providing evidence that schools serving student populations with high levels of poverty can have academic success. These schools also nurture and sustain CTE, which provides trusting, close, supportive relationships where teachers thrive and work for most of their careers. The data found in this study provide strong evidence that aligns with past research showing that student achievement and CTE can be developed in Title I schools (Goddard et al., 2000). As such, educational leaders and teachers must be aware of their schools' sociocultural systems (beliefs and actions) to ensure that the correct level of structure, expectations and support are provided for all students to have academic success. Both of these schools' sociocultural settings included remarkable descriptions of the culture, relationships and actions of the staff members that provide insight into the development of CTE.

Because school systems often struggle to support high academic success for non-mainstream students, it is extremely important for researchers and educational leaders to find ways to develop CTE and similar cultural structures in schools. This study successfully identified many mechanisms for developing CTE in Title I eligible schools. As such, it gives deserved attention to the work these successful Title I eligible schools are doing. This study highlights the achievements of these schools where student success is high and where the schools' cultures nurture and sustain CTE.

School's sociocultural settings are made up of staff members' perceptions which lead to actions. Because schools' sociocultural contexts are comprised of perceptions and actions, this study explored the perceptions and actions that contributed to the schools' culture, and that nurtured CTE. This section also provides emphasis on high level common "central" school characteristics to guide the discussion. These core characteristics are emphasized as strong mechanisms for CTE.

Teachers' and Principals' Perceptions

This study investigated teacher and principal perceptions of what CTE looks like within high-achieving Title I elementary schools. Findings demonstrate that these Title I schools have in common the following central elements of CTE: relationships and core leadership characteristics. Relationships were very important for both schools. The common cultural elements for both schools were *closeness, trust and unity, effective and frequent communication, student-learning focus, growth mindset/desire to learn*, and *vulnerability*

Across these Title I schools, the faculty, principal, and other staff members expressed a sense of closeness, trust, and unity amongst themselves. Staff members at both schools felt connected with each other, especially when it pertained to student learning. Teachers found many ways to encourage and support each other. Through the close, trusting, and unified interactions among teachers and principals, robust relationships were formed that contributed to the strong overall cultures. The common aspect of trusting others may be closely associated with CTE because having collective efficacy includes the idea of having confidence that the school community can successfully support student learning (Bandura, 1997). In this way, it might not be surprising that both schools identified trust as a major taxonomic element.

These unified cultures also developed resilient social networks where school team members provided high levels of support and encouragement. These social networks in turn provided high levels of social capital where resources and ideas flowed freely among staff members. Escuintla had an exceptional culture where administration, teachers and staff served each other in unique and exceptional ways. Similarly, at Patzun the teachers emphasized teamwork over competition. These supportive cultural elements contributed to increased CTE (Aldridge & Frazier, 2016; Belfi et al., 2015; Calik et al., 2012; Skaalvik & Skaalvik, 2007). The high levels of teamwork, comradery and support were also likely contributors to teacher retention which was a common school characteristic.

Effective and Frequent Communication

Another primary relationship element that the schools had in common was effective and frequent communication. For example, both schools had frequent and open communication when reviewing student learning data and when developing student learning interventions. Teachers were willing to engage in collaborative discussions in these vulnerable situations. They trusted each other to provide support and they realized that the work of student learning was more important than their discomfort. CTE research indicates that effective communication aids in CTE growth (Nordick et al., 2012). As such, this focus on effective communication in the school cases helped to strengthen CTE.

Student-Learning Focus

Both schools were unified in making student-learning their primary focus and purpose. These schools modeled unity and purpose when they ensured that their time and efforts supported students' learning. The schools both reviewed student data and then they ensured that learning interventions were provided that aligned with that data. Both schools praised and celebrated student learning through formal and informal processes. They recognized students at assemblies and in announcements. They also were unified in providing other systems that supported students with social emotional needs.

Growth Mindset/Desire to Learn

Teachers expressed a desire to learn and improve at both schools. Teachers' willingness to learn and improve were ways that a growth mindset (Dweck, 2008) was realized at the school. Teachers explained that they wanted to participate in peer observations and that they wanted to receive observations and feedback from school leadership to grow and improve. Teachers also modeled this growth mindset by willingly participating in data meetings and common curriculum planning. Student goal setting processes, effective teacher professional development and advanced teacher degrees all contributed to increased CTE (Bandura, 1997; Calik et al., 2012; Fancera, 2016).

Vulnerability

Vulnerability was emphasized by both schools. Closely related to trust is a willingness to be vulnerable with others. In both schools, teachers showed a willingness to review student academic data with others which placed them in a vulnerable position. In this way, both schools modeled vulnerability when they willingly used student data collaboratively to improve student learning.

Common Leadership Characteristics

No clear core leadership characteristics were found in common between the two school principals. Even though the common principal characteristics were not clearly identified, it is important to acknowledge that the principals' characteristics had a significant influence on their overall school cultures. For example, both principals modeled the supportive and unified cultures of their schools previously described in the relationship section. Both principals helped to establish and maintain the effective communication evident in the schools.

Furthermore, both principals helped to build the trust experienced by their staff members by encouraging teachers to feel safe during learning and growth opportunities. Even though it was not explicitly stated by staff members, both of these principals had a very clear student learning focus. These common perspectives that identified core school relationships and leadership actions just described were significant mechanisms for increasing CTE at Patzun and Escuintla (Nordick et al., 2019).

Teachers' and Principals' Actions and Processes

To identify the core school actions, and the core leadership actions used at both schools, it is helpful to identify the common actions and systems seen in both schools.

Common School Actions

Both schools had schoolwide student behavior systems (PBIS), and they both had processes for using data to create student learning interventions.

PBIS Systems. Both schools had very strong schoolwide student behavior management systems. They both called their systems positive behavior interventions and support (PBIS) systems. Both schools had similar elements as part of their PBIS systems. They taught clear student expectations. The expectations were taught in both schools as part of their social emotional learning (SEL). Each school's PBIS system had consistent ways of recognizing students for good behavior. Students were recognized in assemblies and in prize drawings at both schools. The recognitions were for good behavior, good attendance and for hard work. Both schools had clear consequences, especially when dealing with students' responsibility to learn.

Research indicates that effective behavior management along with celebrations increase CTE (Bandura, 1997; Francisco, 2019). The work that these schools were doing to improve student behavior helped to protect instructional time, it contributed to the growth mindset and student learning focus, and it gave teachers increased levels of confidence when addressing student behavior concerns. As such, the PBIS systems helped to nurture CTE in both school cases.

TDMs and Learning Interventions. Team data meetings (TDMs) at Patzun and learning interventions at Escuintla were not exactly the same processes. However, they were both reported together as elements of core school actions because they had many similar functions and processes. Both schools used these systems to analyze student learning data in a collaborative setting. An important part of these processes is the collaboration between teachers, instructional staff members and reading/math intervention staff members. Both teacher collaboration and a student learning focus contribute to increased levels of CTE (Bandura, 1997; Calik et al., 2012; Moolenaar et al., 2012).

Common Leadership Actions

Many leadership actions contributed to increased levels of CTE. Because of the intertwined close association between relationships and actions, many sociocultural elements positively influenced relationships and actions. Additionally, it should be said that principal actions had strong contributions to many relationship elements already reported. However, the core leadership actions found in common between the two schools were *shared leadership* and *visibility*.

Shared Leadership. Shared leadership was also a common cultural aspect found at both schools. Both principals provided opportunities for teachers to lead by serving on committees, or by sharing their thoughts and insights in meetings. In this way, both schools' administrators worked on shared leadership which also increased CTE (Calik et al., 2012; Nordick et al., 2019).

Visibility. Both school principals were very active and visible throughout the school. Visibility for the school principals meant that they were accessible, they were in classes often and they modeled helpfulness. They also expressed how important it was for them to be visible as school leaders. Both principals working on being visible seemed to help staff members to build a better relationship with the principal.

These school cases provided many sociocultural elements that increased CTE. However, the core sociocultural elements in common for both schools were related to relationships, leadership characteristics, school actions and leadership actions. Because these elements were in common between both schools, they may provide a clear direction for educational leaders' and school administrators' for developing CTE in schools.

Implications for Administrators, Teachers, and Students

The primary purpose of this study was to identify mechanisms for increasing CTE. Increasing CTE has meaningful implications for administrators who are searching for ways to increase teacher confidence and improve school cultures. These improved school cultures support teacher development and job satisfaction. The identified relationships, leadership characteristics, school actions, and leadership actions supported the development of higher levels of CTE. In addition, these factors of CTE have the capability to help all students, including those in Title I schools, to experience higher levels of academic success (Bandura, 1997).

When considering ways to improve school cultures and CTE, principals need to understand the role that they play in fostering CTE. As discovered in this study, principals act as social architects in intentional or unintentional ways. They set the school expectations through explicit words, actions and processes. Some of the most important ways these principals shaped their school cultures were by building supportive and trusting relationships where vulnerability and growth were emphasized. Likewise, they built structures and systems that were focused on student support and learning. Some of those structures included schoolwide behavior management systems, teacher collaboration systems and student data analysis processes that led to improved student learning. The principals helped to build and shape these cultures by getting out of their offices and serving their staff members and in many other ways. Principals could develop similar relationships, structures, and actions to increase CTE in their own schools by using these school cases and the identified mechanisms for CTE.

This study identifies many sociocultural elements related to effective relationships, leadership characteristics, school processes and leadership actions that are beneficial for school leaders to consider while developing schools with high levels of CTE. For example, building a culture of trust, unity, and continual growth, leading by example and being visible, and developing school systems that support student behavior, teacher collaboration and student learning are a few effective sociocultural elements for leaders to consider. For a more complete list of meaningful CTE mechanisms identified in this study, Appendix M and Appendix N are provided as a reference. Appendix M and Appendix N also include a cross reference between the CTE mechanisms, prior CTE research and Professional Standards for Educational Leaders (PSEL) (National Policy Board for Educational Administration, 2015) to show how those CTE mechanisms relate to prior CTE research and how they can be applied to an existing school leadership standards model.

Implications for Educational Research

This study not only has implications for educational leaders. It also makes meaningful connections to existing CTE research and provides researchers with new possibilities for CTE research variables. These connections to existing CTE research and the identification of new CTE mechanisms provide many implications for educational researchers.

This study supports existing CTE research that explores the connection between CTE and school cultures, or relationships found between adults and students in schools. For example, this study supports prior research that suggests that praise and recognition increase CTE (Bandura, 1997; Francisco, 2019; Nordick et al., 2019). This study also strengthens prior CTE research that suggests that other relationship characteristics increase CTE like positive, close relationships in schools (Aldridge & Frazier, 2016; Belfi et al., 2015; Calik et al., 2012; Nordick et al., 2019; Ross et al., 2004), effective communication (Nordick et al., 2019) and building trust (Nordick et al., 2019). These caring and supportive relationships between school employees and students also contribute to the existing research that shows that positive school climates and job satisfaction increase CTE (Aldridge & Frazier, 2016) and seem to help increase teacher retention (Skaalvik & Skaalvik, 2007).

This study also strengthens prior CTE research related to many school actions and processes. For example, this study corroborates prior research that indicates that goal-setting processes (Aldridge & Frazier, 2016; Bandura, 1997), addressing student behavior in schoolwide behavior management systems (Bandura, 1997), having effective professional development processes (Calik et al., 2012; Ross et al., 2004) and effective teacher collaboration processes (Calik et al., 2012; Moolenaar et al., 2012) all increase CTE.

In regards to leadership actions, this study provides additional evidence that leadership actions have a positive effect on CTE. Prior research that suggests that shared leadership (Calik et al., 2012; Nordick et al., 2019), fostering a unified focus on student learning (Bandura, 1997; Nordick et al., 2019; Ross et al., 2004), having a clear school mission/vision (Calik et al., 2012) and fostering effective communication (Nordick et al., 2019) are all strengthened and supported by this study. All the sociocultural elements that act as CTE mechanisms and that support prior research are listed in Appendix M and N.

This study not only supports prior CTE research. It also provides many opportunities for future CTE research. All sociocultural elements that are listed on Appendix M and N and that have no connections to prior CTE studies provide many new research opportunities. These new research opportunities will be further discussed in the future research section of this paper. Finally, because of the many ways that this study strengthens prior CTE research and provides new mechanisms to explore in future CTE research, there are many meaningful implications for research as well as implications for educational leaders.

Limitations

One limitation for the quantitative phase of this study was the low participation rates from some school staff members on the CTE survey. Additionally, for some schools, participants began to take the CTE survey but never finished. These participants' results were removed from the data set because of incomplete data. For some schools, the removal of incomplete surveys increased the concern of low participation rates. The concern of low participation rates for emailed surveys is not an isolated concern. In fact, all forms of survey response rates have been declining over the past several years (Sammut et al., 2021). Furthermore, researchers have found that email surveys produce lower responses rates than other forms of survey delivery methods (i.e., mailed surveys, phone survey; Kaplowitz et al., 2004; Sammut et al., 2021). For example, in a study that used different types of survey delivery methods to determine improved methods for survey response rates, Kaplowitz et al. found that emailed surveys only had a response rate of .207 while mailed surveys had a response rate of .464. Similarly, a meta-analysis of emailed survey response rates found that the average response rate for emailed surveys was 39.6% (Sammut et al., 2021). While low survey response rates create some concern for researchers, surveys remain an important data collection tool.

In this study, it is important to be aware of the schools with low rates and to understand that the low participation rates might more closely reflect an individual's, or small portion of the school population's thoughts about school CTE levels than an overall school belief. This is a limitation because CTE is a school-wide social construct which relies on several school community members' input to more accurately measure CTE. To report more accurate data, and because the mean email survey response rates as reported by Sammut et al. (2021) are 39.6%, only schools with response rates above 40% were considered as school cases for this study.

One of the limitations for the qualitative phase of this study was due to recommendations from the institutional review board (IRB) that provides approvals and oversight for this study. The IRB gave strong recommendations that there be no more than two data collection sessions for each participant. The IRB restriction on data collection might have limited the depth of data.

Even with these limitations, the level of data collected was telling and meaningful. The data provides good sociocultural descriptions for the school cases, and the data provides many mechanisms for ongoing CTE research.

Future Research

School leaders and researchers can benefit from this and similar studies where school's sociocultural contexts are examined to determine how CTE is developed in schools over time. Research looking at successful schools with high levels of CTE can also provide additional clues and a greater understanding of the perspectives and actions that contribute to strong effective school cultures and CTE. By identifying successful Title I schools and using qualitative research methods as seen in this study, researchers can continue to find ways that CTE develops in schools. For example, the school cases in this study had strong sociocultural environments that nurtured and sustained CTE and student academic success. As such, there are many aspects of these schools' cultures that should be used in future research as mechanisms for increasing CTE. The CTE mechanisms made visible through this study that can be considered for future research include how principals can be visible for teachers and students as a means of fostering

CTE. This type of data can be collected through mixed-methods research such as principal observations and teacher verbal accounts. In addition, studying leadership characteristics in relation to promoting teacher trust and teacher/student connectedness in relation to teacher retention in either elementary or secondary schools could add to the literature on CTE. Investigating how teachers use and interpret student data in ways that could improve trust and relationships among teachers is another aspect made visible here that warrants further research.

Even though effective behavior management has been studied in conjunction with CTE, formal positive behavior interventions and supports (PBIS) systems have not. It might be interesting to conduct future studies that look specifically at the relationship between the use of formal PBIS systems and CTE. Some the of the other school actions and processes that have no prior CTE research include teacher onboarding processes, teacher peer observations, processes that help to build student accountability for learning (no opt out), and the use of student learning data and interventions in schools.

Finally, one of the challenges that school leaders have is that CTE is a stable school characteristic that requires the shaping of teacher perceptions over time. Ongoing mixed-methods research in school settings is needed to continue to explain the processes used to increase and develop CTE. Future CTE research that looks at the processes for developing CTE in schools helps to find additional mechanisms that build and develop CTE in schools and provides fine details regarding how those mechanisms are applied in school settings.

Summary

This study successfully identified high-achieving Title I eligible elementary schools which also have high levels of CTE. Two of these exemplary schools served as cases for the primary researcher to explain how these schools nurture and sustain their high levels of CTE through a mixed-methods research study. The underlying intent of this study was to observe closely what happens in these successful schools to provide educational leaders with school improvement ideas, and to provide researchers with ideas for ongoing CTE studies. This study successfully provided sociocultural descriptions of the school cases which in turn provided some important details regarding what these schools were doing, and how they were developing and sustaining CTE.

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APPENDICES

Appendix A

Quantitative Phase Information Email: Collective Teacher Efficacy and Effective Title I Schools

You are invited to participate in this research study by Suzanne H. Jones, an Associate Professor in the School of Teacher Education and Leadership at Utah State University.

The purposes of this research study are:

1. To measure the level collective teacher efficacy (CTE) and student achievement in high-achieving Title I schools.
2. To describe the sociocultural context of a few of these schools, and describe the processes and strategies that a few of these schools use to nurture CTE.

As such, this study is a mixed methods study with two phases; a quantitative phase and a qualitative phase. You are being invited to participate in the quantitative phase of this study because you are a teacher, or a school administrator in a school that has been identified as a high-achieving Title I elementary school. This study will seek to measure the level of collective teacher efficacy and the level of academic achievement in your school. Additionally, if your school meets the criteria for the qualitative phase, some teachers and school administration may be invited to participate in the qualitative phase of this study as well.

Your participation in this study is voluntary and you may withdraw your participation at any time for any reason.

If you take part in this study, you will be asked to complete a short demographic survey that should take less than five minutes. You will also be asked to complete the Collective Teacher Efficacy survey which includes 21 questions and should take approximately 25 minutes total. This survey will be used to measure the level of collective teacher efficacy in your school. CTE is a social construct that describes the overall school staff members' belief that they can collectively and successfully help students to learn. The school's level of CTE will be correlated to the school's level of academic achievement in order to determine the relationship between CTE and academic achievement.

The possible risks of participating in this study include loss of confidentiality and the possibility of fatigue from completing a survey. In order to minimize these associated risks and discomfort, the researcher will use two brief surveys that should take less than 30 minutes to complete. If you have a bad research-related experience, or suffer any research-related injury during your participation, please contact the principal investigator of this study right away at 801-520-9240 or suzanne.jones@usu.edu.

Benefit. Although you will not directly benefit from this study, it has been designed to help school leaders to identify best practices to increase CTE and academic achievement in Title I schools.

We will make every effort to ensure that the information you provide remains

confidential. We will not reveal your identity in any publications, presentations, or reports resulting from this research study. However, it may be possible for someone to recognize the specifics you share with us.

We will collect your information through a Qualtrics online survey. Online activities always carry a risk of a data breach. However, we will use systems and processes that minimize breach opportunities. This survey and video data will be securely stored in a restricted-access folder on Google Drive, a cloud-based storage system.

You can decline to participate in any part of this study for any reason and can end your participation at any time during the survey. However, since your responses will be completely anonymous, you will not be able to withdraw after we have already collected your data.

If you have any questions about this study, you can contact Dr. Suzanne Jones by email: Suzanne.jones@usu.edu, or by phone (801) 520-9240. Thank you for taking the time to read about this study and for your consideration. If you have any concerns about this study, please contact Utah State University's Human Research Protection Office at (435) 797-0567, or irb@usu.edu.

By continuing to the survey you agree that you are 18 years of age or older, and you wish to participate. You agree that you understand the risks and benefits of participation, and that you know what you are being asked to do. You also agree that you understand how to contact the research team with any questions about your participation, and are clear on how to stop your participation in this study if you choose to do so. Please be sure to retain a copy of this form for your records.

Appendix B

Qualitative Phase Information Email: Collective Teacher Efficacy and Effective Title I Schools

This invitation is for the second/qualitative phase of the Collective Teacher Efficacy and Effective Title I Schools study. You are invited to participate in this research study by Suzanne H. Jones, an Associate Professor in the School of Teacher Education and Leadership at Utah State University.

The purposes of this research study are:

1. To measure the level collective teacher efficacy (CTE) and student achievement in high-achieving Title I schools.
2. To describe the sociocultural context of a few of these schools, and describe the processes and strategies that a few of these schools use to nurture CTE.

As such, this study is a mixed methods study with two phases; a quantitative phase and a qualitative phase. Due to your school's high levels of CTE, high level of student achievement and high population of low-SES students, you are being asked to participate in the second, or qualitative phase of this study. The criteria that your school has met for participating in the qualitative phase include the combined characteristics of:

- High-achieving Title I schools that have been identified as having one of the largest student populations that qualify for free, or reduced lunch.
- High-achieving Title I schools that have been identified as having one of the highest academic performing student populations in the state.
- High-achieving Title I schools identified as having one of the highest levels of CTE in the state.

Your participation in this study is voluntary and you may withdraw your participation at any time for any reason.

If you take part in the qualitative phase of this study, you will be asked to participate in one of the following ways:

- School Principals – Participating principals will be asked to participate in a series of one to three 60-minute semi-structured virtual interviews in which the primary researcher will ask questions that will help to describe how your schools' processes, culture and actions nurture and sustain high levels of CTE.
- Teachers – Participating teachers will take part in a virtual 90-minute teacher focus group discussion, which may be followed-up with one or two 60-minute virtual interviews with the researcher to help describe how their school's processes, culture and actions nurture and sustain high levels of CTE.

The possible risks of participating in this study include loss of confidentiality and the possibility of fatigue from participating in virtual interviews, or virtual focus group discussions. In order to minimize these associated risks and discomfort, the researcher will limit all focus group discussions to 90 minutes and all interviews to 60 minutes. If you have a bad research-related experience, or suffer any research-related injury during your participation, please contact the principal investigator of this study right away at

801-520-9240 or suzanne.jones@usu.edu.

Benefit. Although you will not directly benefit from this study, it has been designed to help school leaders to identify best practices to increase CTE and school academic achievement in Title I schools.

We will make every effort to ensure that the information you provide remains confidential. We will not reveal your identity in any publications, presentations, or reports resulting from this research study. However, it may be possible for someone to recognize the specifics you share with us.

We will collect your information through video-recorded virtual focus group discussions and video-recorded virtual interviews. Online activities always carry a risk of a data breach. However, we will use systems and processes that minimize breach opportunities. This survey and video data will be securely stored in a restricted-access folder on Google Drive, a cloud-based storage system.

You can decline to participate in any part of this study for any reason and can end your participation at any time during the survey. However, since your responses will be completely anonymous, you will not be able to withdraw after we have already collected your data.

If you have any questions about this study, you can contact Dr. Suzanne Jones by email: Suzanne.jones@usu.edu, or by phone (801) 520-9240. Thank you for taking the time to read about this study and for your consideration. If you have any concerns about this study, please contact Utah State University's Human Research Protection Office at (435) 797-0567, or irb@usu.edu.

By selecting the proceed button you agree that you are 18 years of age or older, and you wish to participate. You agree that you understand the risks and benefits of participation, and that you know what you are being asked to do. You also agree that you understand how to contact the research team with any questions about your participation, and are clear on how to stop your participation in this study if you choose to do so. Please be sure to retain a copy of this form for your records.

Appendix C

Online Demographic Survey

Demographic Survey

1. I identify as:
   - [ ] Female
   - [ ] Male
   - [ ] Other

2. I identify as:
   - [ ] African American
   - [ ] Asian American
   - [ ] Latino/Hispanic
   - [ ] Native American/Alaska Native
   - [ ] Pacific Islander
   - [ ] White
   - [ ] Multi-ethnic

3. My primary job title at this school is:
   - [ ] Principal
   - [ ] Kindergarten Teacher
   - [ ] First Grade Teacher
   - [ ] Second Grade Teacher
   - [ ] Third Grade Teacher
   - [ ] Fourth Grade Teacher
   - [ ] Fifth Grade Teacher
   - [ ] Sixth Grade Teacher

4. I have worked at this school for:
   - [ ] 1-3 Years
   - [ ] 4-6 Years
   - [ ] 7-10 Years
   - [ ] More than 10 Years

5. Combined number of years I have taught in the classroom, and/or worked as a school principal:
   - [ ] Less than one
   - [ ] 1-3 Years
   - [ ] 4-6 Years
   - [ ] 7-10 Years
   - [ ] More than 10 Years

6. The highest level of education I have completed is:
   - [ ] Associates Degree
   - [ ] Bachelor’s Degree
   - [ ] Master’s Degree
   - [ ] PhD
   - [ ] Other

Appendix D

Semistructured Initial Interview Protocol (Principal)

Semi-Structured Initial Interview Protocol (Principal Interviews)

Informant's Identification Number:	Interview Date:
School Case Identification Number:	Interviewer:
Ethnographic interview principles to remember (Spradley, 1979): • Concurrent Principle: Ask structural questions concurrently with descriptive questions. • Explanation Principle: Structural questions often require an explanation. • Repetition Principle: Structural questions must be repeated many times to elicit all included terms. • Context Principle: When asking structural questions, provide the informant with contextual information. • Cultural Framework Principle: The ethnographer must phrase structural questions in cultural as well as personal terms. • The Use Principle: The meaning of a symbol can be discovered by asking how it is used rather than asking what it means.	
Possible Grand Tour Questions (Spradley, 1979)	Field Notes
• What would I see and hear as I walked through your school? Through the office, the cafeteria, the halls, classrooms, libraries, teacher lounge, teacher collaboration spaces, etc.? • What does a new teacher need to know about your school? • What is a typical day look like at your school? What happened yesterday? • What happens at your school to influence student learning? How do the teachers influence student learning? You the principal? Students? Parents? District Staff? • What do the people say? What do they think? What do they do? • How would you describe your school culture? Cultural beliefs? What influences the culture and beliefs?	
Possible Four Sources of CTE Associated Questions (Bandura, 1994)	Field Notes
• Does your school/school community recognize teacher success? What do you do to recognize teacher accomplishments, successes and progress toward school goals (mastery experiences)? • Do teachers collaborate at your school? How do teachers collaborate at your school? How do they associate with, or observe other successful teachers or other successful schools (Vicarious experiences)? • Do teachers work to improve instruction at your school? How do you encourage teachers to improve instruction? Or, how do teachers encourage each other to improve instruction? • Does your school support teacher's SEL, or mental wellbeing? How does your school support teachers' wellbeing (Physiological States)?	
CTE Scale Associated Questions (Goddard, Hoy & Woolfolk Hoy, 2000)	Field Notes
• When students struggle with learning at this school, what do teachers do to help with academic success? • How do teachers at this school work together to prepare themselves to be effective teachers? • How do teachers here work with difficult students? • How do teachers here obtain materials, supplies, and equipment needed to effectively teach? • How do families, parents, and community partners support student learning? • How does this school provide student safety and social emotional support?	

Headmaster Transformational Leadership Scale Associated Questions (Balyer & Ozcan, 2012)	Field Notes
Vision Building: • What is your school vision? • Does this vision include aspects of student learning? • How do you effectively communicate the school vision? Individualized Consideration: • How do you help teachers to feel valued and respected? • How do you help teachers to feel that their efforts on school improvement and increasing student academic achievement are appreciated and valued? • How do you help teachers to feel that their voices are heard? Intellectual Stimulation: • How do you encourage teachers to try new teaching strategies? • How do you encourage teachers to reflect on their own learning? • How do you encourage teachers to develop ideas to improve student learning? Innovative Climate: • In what ways are you trying to improve student learning? • How are teachers trying to improve student learning?	

Appendix E

Semistructured Initial Focus-Group Protocol (Teachers)

Semistructured Initial Focus-Group Protocol (Teachers)

School Case Identification Number:	Focus Group Date:
	Interviewer:
Ethnographic interview principles to remember (Spradley, 1979): • Concurrent Principle: Ask structural questions concurrently with descriptive questions. • Explanation Principle: Structural questions often require an explanation. • Repetition Principle: Structural questions must be repeated many times to elicit all included terms. • Context Principle: When asking structural questions, provide the informant with contextual information. • Cultural Framework Principle: The ethnographer must phrase structural questions in cultural as well as personal terms. • The Use Principle: The meaning of a symbol can be discovered by asking how it is used rather than asking what it means.	
Possible Grand Tour Questions (Spradley, 1979)	Field Notes
• What would I see and hear as I walked through your school? Through the office, the cafeteria, the halls, classrooms, libraries, teacher lounge, teacher collaboration spaces, etc.? • What would a new teacher need to know about your school? • What is a typical day look like at your school? What happened yesterday? • What happens at your school to influence student learning? How do the teachers influence student learning? The principal? Students? Parents? District Staff? • What do the people say? What do they think? What do they do? • How would you describe the school culture? Cultural beliefs? What influences the culture and beliefs?	
Possible Four Sources of CTE Associated Questions (Bandura, 1994)	Field Notes
• Does your school/school community recognize teacher success? What does your school community do to recognize teacher accomplishments, successes and progress toward school goals (mastery experiences)? • Do teachers collaborate at your school? How do teachers collaborate at your school? How do they associate with, or observe other successful teachers or other successful schools (Vicarious experiences)? • Do teachers work to improve instruction at your school? How are teachers encouraged to improve instruction? Or, how do teachers encourage each other to improve instruction? • Does your school support teacher’s SEL, or mental wellbeing? How does your school support teachers’ wellbeing (Physiological States)?	
CTE Scale Associated Questions (Goddard, Hoy & Woolfolk Hoy, 2000)	Field Notes
• When students struggle with learning at this school, what do teachers do to help with academic success? • How do teachers at this school work together to prepare themselves to be effective teachers? • How do teachers here work with difficult students? • How do teachers here obtain materials, supplies, and equipment needed to effectively teach? • How do families, parents, and community partners support student learning? • How does this school provide student safety and social emotional support?	

Headmaster Transformational Leadership Scale Associated Questions (Balyer & Ozcan, 2012)	Field Notes
Vision Building: • What is your school vision? • Does this vision include aspects of student learning? • How is the school vision effectively communicated? Individualized Consideration: • What is done here to help teachers to feel valued and respected? • What is done here to help teachers feel that their efforts on school improvement and increasing student academic achievement are appreciated and valued? • What is done here to help teachers to feel that their voices are heard? Intellectual Stimulation: • What is done here to help encourage teachers to try new teaching strategies? • What is done here to help encourage teachers to reflect on their own learning? • What is done here to help encourage teachers to develop ideas to improve student learning? Innovative Climate: • How are teachers trying to improve student learning?	

Appendix F

Semistructured Follow-up Interview Protocol (Principal and Teachers)

Semistructured Follow-up Interview Protocol (Principal & Teachers)

Informant's Identification Number:	Focus Group Date:
School Case Identification Number:	Interviewer:

Ethnographic interview principles to remember (Spradley, 1979):

- Concurrent Principle: Ask structural questions concurrently with descriptive questions.
- Explanation Principle: Structural questions often require an explanation.
- Repetition Principle: Structural questions must be repeated many times to elicit all included terms.
- Context Principle: When asking structural questions, provide the informant with contextual information.
- Cultural Framework Principle: The ethnographer must phrase structural questions in cultural as well as personal terms.
- The Use Principle: The meaning of a symbol can be discovered by asking how it is used rather than asking what it means.
- The Contrast Principle: The meaning of a symbol can be discovered by finding out how it is different from other symbols.

Structural Question Examples and Considerations (Spradley, 1979):

Domain Analysis & Universal Semantic Relationships:

Semantic Relationship Name	Semantic Relationship Structure	Structural Question Example
Strict Inclusion	X is a kind of Y	Are there other/different kinds of Ys? What are all the other kinds of Ys?
Spatial	X is a place/part of Y	Are there other parts of Y? What are all the other places for Y?
Cause-Effect	X is a result/cause of Y	What are all the causes of Y? What are other results of Y?
Rationale	X is a reason for doing Y	What are some more reasons for doing Y?
Location for action	X is a place for doing Y	What are all the places for doing Y?
Function	X is used for Y	What are some things used for Y?
Means-end	X is a way to do Y	What are all of the ways to do Y?
Sequence	X is a step/stage in Y	What are some steps/stages in Y
Attribution	X is an attribute/characteristic of Y	What are all of the characteristics of Y?

Kinds of Structural Questions (Spradley, 1979):

- Cover Terms/Domain Structural Questions: Are there different kinds of _______? Are there different ways to _________? What are all the different steps to __________?
- Included Terms Structural Questions: Is X a kind of _____? Is X a way to do ______? Are ____ ____ ____ these all the same kind of thing?
- Substitution Frame Structural Questions: You find ____ in the library. Can you think of other things that go in the library?
- Card Sorting Structural Questions: helps to verify included terms by listing all the possible terms and asking informant to find which belong.

Contrast Verification Questions (Spradley, 1979):

- Contrast Verification Questions: Ask questions to verify that the contrast exists.
- Directed Contrast Questions: Which of these ______ require you to do ________ and which do not?
- Dyadic Contrast Questions: Can you tell me any differences between this set of terms?
- Triadic Contrast Questions: Which two of these are alike and which one is different?
- Contrast Set Sorting Questions: Would you sort these into two or more piles in terms of how they are alike or different? Now, can you tell me why you put these cards in this pile?
- Twenty Questions Game: Ask me questions regarding these included terms to see if you can guess which of these terms I am thinking of (Yes, or No questions only).
- Rating Questions: Which types of ____ work best (easiest, most difficult, most interesting, worst, etc.)?

Structural Questions & Contrast Questions	Field Notes

Descriptive Questions	Field Notes

Appendix G

Domain Analysis Worksheet

Domain Analysis Worksheet (Spradley, 1979)

1. Semantic Relationship: ____
2. Form: ____
3. Example: ____

Included Terms	Semantic Relationship	Cover Term
Structural Questions:		
Included Terms	Semantic Relationship	Cover Term
Structural Questions:		
Included Terms	Semantic Relationship	Cover Term
Structural Questions:		
Included Terms	Semantic Relationship	Cover Term
Structural Questions:		

Appendix H

Paradigm Worksheet

Paradigm Worksheet (Spradley, 1979)

Contrast Set (Included Terms)	Dimensions of Contrast			
	Contrast #1 (Yes/No)	Contrast #2 (Yes/No)	Contrast #3 (Yes/No)	Contrast #4 (Yes/No)

Appendix I

Steps Used for Thematic Analysis

Steps Used for Thematic Analysis (Spradley, 1979)

1. Make lists of cultural domains along with reviewing the interview notes to search for additional domains to find relationships between the different domains. These relationships may be cultural themes.

2. Generate a list of unidentified domains using some universal semantic relationships (i.e., kinds of objects, kinds of events, kinds of goals, places for doing things, etc.). Use these hypothetical domains and generate tentative possibilities for themes that can be tested and identified later.

3. Generate sketch maps of schools' layout, important locations in the schools, and activities or events that take place in those locations based on informant descriptions of the schools. These sketch maps can generate additional domains and potential themes.

4. Collect and list examples provided by informants to develop rich descriptions of the culture and to aid in finding themes.

5. Inventory other data collected during the process (i.e., field notes, pictures, lesson plans, etc.). Again, this data can provide additional insight for finding themes.

6. Conduct a componential analysis of all the targeted domains, then look for similarities between the dimensions of contrast to provide information regarding the relationships between domains to help the researcher find additional themes.

7. Make a schematic of the culture to help see the relationships between domains.

8. Consider the following universal themes as possible themes in the participant schools:
    - Social conflict
    - Cultural contradictions
    - Techniques of social control
    - Managing difficult relationships
    - Acquiring and maintaining status
    - Solving problems.

Appendix J

Staff Characteristics Componential Analysis

Staff Characteristics Componential Analysis

School & Staff Defining Characteristics (Componential Analysis)

Please note that missing dimensions of contrast for staff members does not mean that they are non-existent. It means that it was not emphasized by participants during the data collection process.

	Contrast Set									
	Escuintla Elementary					Patzun Elementary				
Dimensions of Contrast	School	Teachers	Coaches	Instructional Staff	Other Staff	School	Teachers	Coaches	Instructional Staff	Other Staff
Small School/Small Community	X									
Large Population of English Learners	X					X				
High Rates of Student Poverty	X					X				
Reported High Rates of Student Absenteeism						X				
Positive School Culture	X					X				
Welcoming/Safe	X					X				
Rare & Special School Culture	X					X				
Culture of Mutual Respect	X					X				
Friendly Family Feel	X					X				
Open/Trusting Culture	X					X				
Emphasis on Unity/Team Success	X					X				
Student Learning Focus	X					X				
Data-Focused Culture	X					X				
Culture of Responsibility/Accountability	X					X				
Intentional Shaping of Student Culture	X					X				
High Staff Retention	X					X				
High Level of Teacher Support	X					X				
High Emphasis Placed on Culture of Constant Improvement/Change						X				
High Emphasis Placed on Level of Structure/Systems						X				
Reported Emphasis Place on Living Locally (from the Community)		X	X	X	X					
Reported Emphasis Placed on Building/Maintaining Relationships w/Students		X	X	X	X		X			
Reported Emphasis on Building/Maintaining Relationships w/Adults		X	X		X			X		
Reported Emphasis on Helpful/Nurturing (Service Oriented)		X	X	X	X			X		
Reported Emphasis on Open Communication (Regular Interactions)		X	X	X	X		X			
Reported Emphasis on Highly-Trained Staff		X	X	X			X	X		
Reported Emphasis on Going beyond assigned roles		X	X	X	X					
Reported Emphasis on Seeking Feedback to Improve (Growth Mindset)		X					X			
Reported Emphasis on Desire to Learn		X					X			
Reported Emphasis on Responsive to Student Needs		X	X	X			X	X	X	
Reported Emphasis on Help Maintain School Systems							X	X		
Reported Emphasis on Using Goal Setting for Improvement							X			

Appendix K

School Leadership Characteristics Componential Analysis

School Leadership Characteristics Componential Analysis

<table>
<tr><th colspan="3">School Leadership Defining Characteristics</th></tr>
<tr><th colspan="3">Please note that missing dimensions of contrast for principals does not mean that they are non-existent. It means that it was not emphasized by participants during the data collection process.</th></tr>
<tr><th rowspan="2">Dimensions of Contrast</th><th colspan="2">Contrast Set</th></tr>
<tr><th>Escuintla Elem</th><th>Patzun Elementary</th></tr>
<tr><td>Lives Locally (Tied to the Community)</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Communication</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Builds/Nurtures Relationships</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Service Orientation</td><td>X</td><td></td></tr>
<tr><td>Reported Emphasis on Kindness</td><td>X</td><td></td></tr>
<tr><td>Reported Emphasis on Empathy</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Teacher Support</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Celebrations/Giving Recognitions</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Being Approachable</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Being Fair/Honest</td><td></td><td>X</td></tr>
<tr><td>Reported Emphasis on Being Humble/Vulnerable</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Building Trust</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Being Experienced/Competent</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Coaching/Mentoring Teachers</td><td></td><td>X</td></tr>
<tr><td>Reported Emphasis on Sustaining Common Norms & Expectations</td><td></td><td>X</td></tr>
<tr><td>Reported Emphasis on Being Visible/Present</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Seeking Continual Learning</td><td></td><td>X</td></tr>
<tr><td>Reported Emphasis on Leading By Example/Models Desired Behavior</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Practicing Shared Leadership</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Prioritizing Student Learning</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Being Data-Focused</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Being Organized/Builds Systems</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Managing Student Behavior</td><td>X</td><td>X</td></tr>
<tr><td>Reported Emphasis on Building Schoolwide Behavior Management Systems</td><td>X</td><td>X</td></tr>
</table>

Appendix L

Methods of Student Support Componential Analysis

Methods of Student Support Componential Analysis

Methods of Student Support

Please note that missing dimensions of contrast for student support does not mean that they are non-existent. It means that it was not emphasized by participants during the data collection process.

Dimensions of Contrast	Contrast Set	
	Escuintla Elementary	Patzun Elementary
Reported Staff Building Positive Relationships w/students	X	X
Reported Use of Student Recognitions	X	
Reported Use of Ratio of Interactions (Praise:Corrections - 5:1)	X	
Reported Use of Positive Phone Calls Home	X	
Reported Use of Prize Drawings for Good Behavior	X	X
Focused on Student academic success	X	X
Reported that Every Adult in School Help's Children	X	X
Reported Flexible Staff Assignments & Schedules to Meet Student Needs	X	
Reported Staff Going Beyond Expected Job Description to Help Students	X	
Reported Methods for Holding Students Accountable for Learning	X	X
Reported Using Academic Data to Find Student Needs	X	X
Reported Making Adjustments to Instruction to Meet Student Needs	X	X
Reported Providing Small Group Instruction/Intervention	X	X
Reported Providing One-on-One Instruction When Needed	X	
Reported Student Goal Setting & Monitoring of Progress		X
Reported Using of Chants/Cheers to Motivate Students		X
Reported Intentional Use of Instructional Time	X	X
Reported Using Common Instructional Strategies Schoolwide		X
Reported Collaborative Lesson/Instruction Planning		X
Reported Having a Common Classroom Behavior Management System	X	X
Reported Schoolwide Behavior Management (PBIS)	X	X
Reported Teaching Student Rules/Expectations	X	X
Reported Wellness/Calm Down Room	X	
Reported Behavior Coach Support	X	
Reported Using Wait Strategies to Calm Students	X	
Reported Building Relationships & Communicating with Struggling Students	X	X
Reported Teaching Social Emotional Learning (SEL)	X	X
Reported Giving Students Choices (Level of Control)	X	
Reported Gathering Student Behavior Data	X	X
Reported Use of Behavior Data to Improve System	X	X
Reported Individual Student Behavior Plans	X	
Reported Staff Communicate with Families in Home Language	X	
Reported Parent/Family Nights	X	X
Reported Home Visits		X

Appendix M

School Sociocultural Elements' Connections to CTE Research (Perceptions)

School Sociocultural Elements' Connections to CTE Research (Perceptions)

Sociocultural Elements	School Sub-level Sociocultural Elements (Potential CTE Mechanisms)	Connections to Prior CTE Research	PSEL (Standards for Educational Leaders)
Relationships	Recognitions, Celebrations & Praise	Bandura, 1997 Francisco, 2019 Nordick et al., 2019	PSEL 3.b., 3.c., 3.d., 3.e., 5.b., 5.c., 5.d., 5.e., 7.a., 7.e.
	Positive, kind, close, supportive, inviting cultures	School Climate & Job Satisfaction (Aldridge & Frazier, 2016) Strong Social Networks (Aldridge & Frazier, 2016; Calik et al., 2012; Nordick et al., 2019) Social Capitol (Belfi et al., 2015)	PSEL 1.c., 2.d., 2.e., 3.a., 3.e, 5.a., 5.b., 5.c., 5.d., 5.e., 6.h., 7.a., 7.e.
	Unity	Nordick et al., 2019 Ross et al., 2004	PSEL 1.a., 2.d., 5.f., 6.h., 7.a., 7.c., 7.d., 7.e.
	Effective Communication	Nordick et al., 2019	PSEL 2.e., 5.f., 7.c., 7.e., 9.g.
	Trust (Confident in others' abilities, accountable to each other, feel safe/trust that others have your best interests in mind, etc.).	Nordick et al., 2019	PSEL 1.c., 2.b., 5.a., 5.b., 6.h., 7.a., 7.b., 7.c., 7.d., 7.e., 7.g., 7.h.
	School Chants & Cheers	None	PSEL 2.b., 3.b., 3.c., 5.b., 5.c., 5.d., 5.e., 5.f., 7.a.
	Growth Mindset	None	PSEL 1.c., 2.b., 3.b., 3.c., 3.e., 4.f., 4.g., 6.c., 6.d., 6.e., 6.f., 6.i., 7.a., 10.a.
	Extra Effort/Service Beyond Formal Expectations	None	PSEL 2.c., 3.c., 7.e., 10.a.
	Vulnerability	None	PSEL 2.d., 7.e., 7.g.
	Missing	Student Collaboration (Bandura, 1997; Putney & Broughton, 2011)	
	Missing	Mastery Goal-Oriented Social Networks (Devos et al., 2012)	
Leadership Characteristics	High Expectations	Bandura, 1997 Calik et al., 2012	PSEL 1.c., 2.c., 3.c., 3.d., 3.e., 5.b., 6.f., 7.c., 10.a.
	Humility (willing to listen and accept others ideas)	None	PSEL 2.d., 7.e.
	Helpful (willing to pitch in)	None	PSEL 3.c., 6.h., 7.e.

Sociocultural Elements	School Sub-level Sociocultural Elements (Potential CTE Mechanisms)	Connections to Prior CTE Research	PSEL (Standards for Educational Leaders)
	Empathy	None	PSEL 2.d., 2.e., 3.a., 3.d., 5.a., 5.b., 5.d., 6.h.

Note: Missing signifies that the CTE research variable was not found in the schools' qualitative data set. None – signifies that there is no prior CTE research using the sociocultural element as a research variable.

Appendix N

School Sociocultural Elements’ Connections to CTE Research (Actions & Processes)

School Sociocultural Elements' Connections to CTE Research (Actions & Processes)

Sociocultural Elements	School Sub-level Sociocultural Elements (Potential CTE Mechanisms)	Connections to Prior CTE Research	PSEL (Standards for Educational Leaders)
School Actions & Processes	Goal Setting	Aldridge & Frazier, 2016 Bandura, 1997	PSEL 2.c., 3.b., 3.c., 3.e., 4.a., 4.b., 4.f., 4.g., 5.c., 6.d., 6.i., 7.a., 7.d., 7.g., 7.h., 10.a., 10.d., 10.g.
	PBIS Behavior Management Systems (Clear Expectations, Expectations taught effectively, Recognize desired behavior & Consistent consequences)	Classroom Management (Bandura, 1997)	PSEL 3.a., 3.b., 3.c., 3.d., 3.e., 5.a, 5.b., 5.c., 5.d., 5.e., 5.f., 7.b., 7.c., 9.e., 9.k.
	EBIS, PBIS Committees (Effective Professional Development)	Effective PD (Calik et al., 2012; Ross et al., 2004)	4.a., 4.b., 5.e., 5.f., 6.a., 6.c., 6.d., 6.g., 6.i., 7.a., 7.b., 7.f., 7.g., 7.h., 10.j.
	PLCs/TDMs (Teacher Collaboration)	Calik et al., 2012 Moolenaar et al., 2012	PSEL 1.b., 2.b., 3.e., 4.a., 4.b., 4.f., 4.g., 6.a., 6.c., 6.d., 6.f., 6.g., 6.i., 7.a., 7.b., 7.c., 7.d., 7.f., 7.g., 7.h., 9.g., 10.g., 10.j.
	Effective Teacher/Staff Onboarding	None	PSEL 4.b., 5.f., 6.a., 6.b., 7.f.
	Teacher Peer Observations	None	PSEL 4.a., 6.a., 6.b., 6.c., 6.d., 6.e., 6.f., 6.i., 7.a., 7.f., 7.g., 7.h.
	Holding Students Accountable for Work Completion (No Opt Out)	None	PSEL 1.b., 1.c., 2.b., 2.c., 2.d., 3.b., 3.d., 3.e., 4.f., 4.g., 7.b., 7.c., 7.d.
	Use student learning data & interventions	None	PSEL 1.b., 2.c., 3.b., 3.e., 4.a., 4.f., 4.g., 5.c., 6.f., 7.a., 7.b., 7.d., 7.g., 7.h., 9.g., 10.g.
Leadership Actions	Shared Leadership/Teacher Choice & Voice	Shared Leadership (Calik et al., 2012; Nordick et al., 2019) Teacher Sense of Control (Skaalvik & Skaalvik, 2007)	PSEL 1.b., 6.c., 6.f., 6.g., 6.i., 7.a., 7.b., 7.f., 7.h., 10.j.
	Unified Student Learning Focus	Bandura, 1997	PSEL 1.a., 1.b., 2.c., 3.e., 4.a., 4.f., 4.g., 5.c., 6.f., 7.a., 7.b., 7.c., 7.d.
	School Vision	Clear Vision (Calik et al., 2012)	PSEL 1.a., 1.b., 7.b.
	Effective Communication	Nordick et al., 2019	PSEL 2.e., 7.c., 7.e., 9.g.
	Effective Hiring Practices	None	PSEL 6.a.
	Principal Visibility	None	PSEL 7.d.
	Modeling of Desired Behavior by Principal (Lead by Example)	None	PSEL 2.b., 2.f., 5.f., 6.f.
	Mentor Teachers	None	PSEL 4.a., 5.f., 6.a., 6.b., 6.e.
	Missing	Principal Provides Needed Materials (Francisco, 2019)	

Sociocultural Elements	School Sub-level Sociocultural Elements (Potential CTE Mechanisms)	Connections to Prior CTE Research	PSEL (Standards for Educational Leaders)
Other/School Characteristics	Teacher Retention – persistent culture	Stress & Teacher Burnout (Skaalvik & Skaalvik, 2007)	PSEL 6.b., 6.h., 7.e.
	High Level of Teaching Experience	Cocca et al., 2018	PSEL 6.b.
	High Levels of Teacher Education	Fancera, 2016	PSEL 6.d, 6.i.

Note: Missing signifies that the CTE research variable was not found in the schools' qualitative data set. None – signifies that there is no prior CTE research using the sociocultural element as a research variable.

CURRICULUM VITAE

DONALD R. MENDENHALL
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Education

- ***PhD (Educational Leadership)*** completed May 2024 | Utah State University, Logan UT
    - Dissertation Title: Collective Teacher Efficacy and Effective Title I Eligible Schools: A Mixed-methods Approach
    - Committee Chair: Dr. Suzanne Jones

- ***Administrative/Supervisory Endorsement*** completed May 2007 | Utah State University, Logan UT

- ***MEduc (Curriculum and Instruction)*** completed May 2004 | Weber State University, Ogden UT
    - Master's Thesis Title: Motivating Students: Traditional Versus Self-paced Instruction
    - Committee Chair: Dr. Penee Stewart

- ***BA (Technology & Engineering Technology)*** completed Dec 2004Southern Utah University, Cedar City UT

District & School Administration

- ***Ogden School District Career and Technical Education (CTE) & Work-based Learning (WBL) Coordinator*** from July 2023 – Present
    - Work with district and state CTE departments to meet state CTE guidelines, complete reports and support all district CTE teachers with budgets, instruction, and curriculum needs.
    - Supervise WBL teachers to support student interns and to organize student intern applications and portfolios.
    - Coordinate and establish WBL experiences for K-12 students by building industry and community partnerships to provide career fairs, industry site visits, industry guest speakers and internships.

- ***Ogden School District School Administration*** from July 2006 – June 2023
    - Polk Elementary School Principal – Opened a newly renovated school and collaborated with teachers and parents to establish a schoolwide vision, develop a school portrait of a scholar, developed a behavior management system (PBIS), an AVID schoolwide instructional focus, clear and effective systems to support student social and emotional needs, developed early literacy systems based on LETRS literacy training, and clear ELEOT-focused teacher observation and feedback system. I also worked closely with all grade level collaborative team meetings and establishing norms, agendas and routines for these meetings through shared leadership methods.
    - Taylor Canyon Elementary School Principal – Helped the school to continue the work they had begun on AVID instructional strategies, early literacy programs, school-wide PBIS management systems, and the district gifted and talented program housed at the school along with establishing and supporting grade level collaborative team meetings.
    - Highland Junior High Assistant Principal – Helped the junior high school to establish new PBIS behavior management systems which included a consistent response to classroom disruptions and to improve student truancy and tardies. I also worked closely with the language arts department and CTE department on their collaborative team meetings.
    - Heritage Elementary School Principal – Similar to the other schools, I establish effective PBIS systems, literacy systems, and grade level collaborative team meeting. I also worked on collaborative literacy curriculum planning with each grade level team.
    - Shadow Valley Elementary School Principal – Again, I established collaborative grade level team work, PBIS systems, and other curriculum systems. We worked on providing small group instruction with the Daily Five framework. I also worked on supporting and strengthening the school environmental science curriculum focus.
    - Ogden High School Assistant Principal – Worked on teacher observation and feedback to improve instruction. I also worked closely with the arts, business, music and performing arts departments in their professional learning community meetings. I also supervised many school sports and other school events.

Teaching

- ***Ben Lomond High School (Ogden School District)*** from July 2001 – July 2006
    - Taught 10-12th grade students in ESL, Project Lead the Way Engineering, computer aided drafting and applied physics classes.

- ***Roy High School (Weber School District)*** from July 2000 – July 2001
    - Taught 10th – 12 grade students in cabinetmaking and construction classes.

- ***Central Middle School (Ogden School District)*** from Jan 1999 – July 2000
    - Taught 7th – 9th grade students in a career exploration course and in construction.

Research Experience

- ***Doctoral Researcher (Utah State University)*** from 2018 – Present

    - Researched many primary sources regarding learning theories, different research methodologies, educational leadership and collective teacher efficacy.
    - Examined the literature of Lev Vygotsky, Albert Bandura, James Spradley, Roger Goddard and others.

- ***Master's Researcher (Weber State University)*** from 1999 – 2005

    - Researched many primary source regarding motivation theory, self-paced learning instructional theory, and curriculum and instruction.

Conference Presentations

- ***Utah Rural Schools Association (URSA) Conference*** 2021

    - Presentation Title: Tools to Look and Listen in Classrooms to Enhance Instruction and Document School Improvement Efforts.
    - Presentation was on the use of teacher video reflection in the observation feedback process. Other technology tools like CANVAS were highlighted to explain how to build teacher collaboration and document teacher growth using these tools.