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The Operationalization of the Theoretical Antecedents
of Collective Teacher Efficacy

Kathryn A. Larsen

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Master of Arts

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ABSTRACT

The Operationalization of the Theoretical Antecedents of Collective Teacher Efficacy

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Master of Arts

Much research on collective teacher efficacy focuses on outcomes, mainly the benefits to students. However, there is no research that explores how teacher teams enact the theoretical antecedents to collective efficacy set out by Bandura (1977, 1993), namely vicarious learning, verbal persuasion, psychological arousal, and mastery experiences, to make such achievements possible. This qualitative study explores the experiences of two teams of secondary language arts teachers who were collectively efficacious and how they operationalized Bandura's theoretical antecedents of collective teacher efficacy in becoming so. After verification of levels of personal and collective efficacy, team interviews were held specifically addressing the implementation of the four antecedents. Interview transcripts were coded and restoried, highlighting critical incidents in the process of becoming collectively efficacious. The findings for these two teams show an incomplete understanding of collective efficacy. It is often thought that enacting the four antecedents will result in a collectively efficacious team; however, my study demonstrates that teachers must become effective teacher teams before they could develop collective teacher efficacy. My findings indicate that relationships among team members are crucial for successful implementation of other elements. Implications for administrators revolve around their important role in helping teachers develop collegial relationships with each other. Team relationships can also have a significant impact on novice teachers when proper mentoring and support are provided.

Keywords: collaboration, beliefs, relationship, change, teamwork, self-efficacy

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CHAPTER 1

Introduction

Every day the teachers in my school district are reminded of the difficult circumstances their students face. Thomas (all names have been changed) wonders how his mother is going to care for a child who was just dropped off on their doorstep when it has been hard enough for her to take care of the four boys she already has. Annie feels constant pressure to be perfect, and she has been contemplating suicide. Kimberly's mother was recently deported, and she worries that her father will be next. She cries when she thinks about being left in the United States with just her aunt and uncle for support. These students' challenges are not unique. Every teacher knows that his or her students struggle with personal issues related to their home lives or their communities and that these personal struggles have an influence on student achievement. How can we as teachers help our students achieve at high levels, despite the challenges that they face?

It is easy to blame students' struggles to reach high achievement levels on their home lives and the communities in which they live. It is also easy to assume that high socioeconomic status (SES) will lead to high levels of student achievement. However, SES is not always the most important factor in determining student success. Teachers themselves have been shown to be one of the most influential factors in student achievement, but there is debate about how much influence a single teacher can have. Might a team of teachers working together have even more influence on student achievement than a single teacher or even SES levels can have?

The concept of a team of teachers sharing the belief that together they can have an impact on student achievement is known as collective teacher efficacy. Collective teacher efficacy has also been defined as the self-perception that the combined efforts of teachers in a school make an

educational difference to their students more so than the students' socioeconomic status, their home lives, and the effects of their communities (Goddard, Hoy & Woolfolk Hoy, 2004).

In wondering how collective teacher efficacy may benefit all students, I began to study the significant differences that exist among the junior high school English Language Arts (ELA) departments in my own school district. During my study of the data, I noticed that when looking at high growth and high proficiency scores on the 2016 state-mandated, end-of-level English Language Arts test, the highest performing junior high school, which has the second-lowest levels of SES in the district, has a cluster of teachers with high student growth and proficiency scores. Only one other junior high school demonstrates this phenomenon; it happens to be the wealthiest school in the district. I had assumed that the cluster of teachers with high test scores at the wealthier school achieve high test scores because of their students' high SES levels. However, a comparison of the data made me question the assumption that the wealthy school's success is due to simply high student SES.

The highest-performing, low-SES school has a proficiency rate of 65% compared to the district proficiency rate of 49% and the state proficiency rate of 44%. The high-performing, wealthy school has a proficiency rate of 62%. When looking at proficiency rates, these two schools are consistently achieving the highest ELA scores in the district.

Because of my position as the district English content specialist, I have had the opportunity to personally observe each of these high-growth and high-proficiency teachers in their classrooms to determine what these teachers are doing differently from other teachers. As I talked with the two groups of high-growth, high-proficiency teachers, I began to see that even though the groups of teachers at the two schools are teaching very differently, both groups are composed of efficacious teachers who are dedicated to collaboration. However, they have done

more than just collaborate well. They genuinely believe that they are more effective and more powerful when they work together for student success. They have high expectations for their students. They believe that their students can be successful, and they believe that their students' SES levels and home lives do not determine their achievement levels.

When I paid attention to the words these groups of high-achieving teachers chose to use when describing their collaborative efforts, the concept of collective teacher efficacy came to mind. Nobody used the word "I." As they walked me through the process they went through to become more collaborative, every person used the word "we" over and over again. Although the concept of collective teacher efficacy was a relatively new one for me, after talking with these teachers I began to seriously study the idea.

The more I read and understood the premise behind collective teacher efficacy, the more I began to understand that it is possibly the most important factor in determining both of these teams' high levels of student achievement. I then began to wonder what other teachers could learn from these two groups of teachers. Several studies (Goddard et al., 2004; Hoy, Sweetland, & Smith, 2002; Kurz & Knight, 2004; Ross, Hogaboam-Gray, & Gray, 2004; Tschannen-Moran & Barr, 2004) have demonstrated that collective teacher efficacy leads to student achievement, but studies have not shown how groups of teachers actually operationalize the process of becoming collectively efficacious. If other teachers were made aware of what these two groups of teachers have done, could they too follow that process and become collectively efficacious?

Bandura (1993) shows that there are four kinds of experiences teachers need in order to move toward collective teacher efficacy: vicarious learning, verbal persuasion, psychological arousal, and mastery experiences. Vicarious learning is defined (Bandura, 1977) as occurring when teachers are able to watch competent and credible models, who are like the teachers

themselves, exhibiting the behaviors that the teachers would like to see in themselves. Teachers can also learn to be more collectively efficacious through verbal persuasion, by which teachers, administrators, and other colleagues give positive encouragement to one another (Bandura, 1977). Teachers also move toward collective efficacy through psychological arousal which ensures that their emotional state is one of reachable challenge rather than frustration, and by mastery experiences, whereby they meet and master the goals they set for themselves (Bandura, 1977, 1993).

Statement of the Problem

Tschannen-Moran, Woolfolk Hoy, and Hoy began in 1998 to argue that tapping into vicarious learning, verbal persuasion, psychological arousal, and mastery experiences in an effort to move toward collective teacher efficacy would better equip and train teachers for the complex obligation that is theirs. Almost twenty years later, there continues to be a dearth of research on collective teacher efficacy. In particular, there is no published research that demonstrates how a group of teachers works together to become collectively efficacious.

Students everywhere, regardless of their personal challenges, deserve an education that will change their lives. They deserve teachers who embrace collective efficacy and who understand that their beliefs about student success are more powerful than students' SES levels, their home lives, or the communities in which they live. Teachers in my school district have conducted individual research, prepared authentic learning experiences for students, built relationships, implemented standards-based grading, and have put in place numerous other strategies to help students achieve. However, many of these teachers are still falling short. Moving toward collective teacher efficacy, as the two high-achieving groups of teachers have done, may be the factor that results in real and lasting change in student achievement.

Statement of the Purpose

The purpose of this research is to explore the experiences of two groups of teachers as they moved toward collective teacher efficacy. I will also look at how these teachers took the theoretical ideas of collective teacher efficacy and put them into practice. These two groups of teachers believed that they had an obligation to be the best teachers possible for the students they see in their classrooms every day. Because collective teacher efficacy influences student achievement, they were willing to become not just highly collaborative but to learn from models, to encourage each other, to ensure that their levels of emotional comfort remained challenging rather than discouraging, and to acknowledge that they had mastered the goals that they set for themselves. Although these teachers were collaborative throughout the process, they each had a unique and personal experience as they moved toward collective teacher efficacy.

Research Question

The focus of this study is on the process of collaboration and change. Having observed the differences in success among the teaching teams in my school district, my research question is: How did two groups of efficacious teachers operationalize the theoretical antecedents of collective teacher efficacy?

Limitations

One limitation to this study is the small number of teachers participating. Because the study involves only two groups of teachers—who do not even make up the entirety of their departments—it may be difficult to transfer the findings of these participants to other groups of teachers. Additional research is also needed to explore whether a content-specific group of teachers who move toward collective teacher efficacy can influence the attitudes, beliefs, and behaviors of all the teachers in a school. Ideally, collective teacher efficacy includes an entire

faculty. It is not within the scope of this study to determine whether the beliefs of a single team of teachers can enact a change in the beliefs of an entire school faculty.

A second limitation of the study is that in order to explore how teachers operationalize the antecedents of collective teacher efficacy, I must first show that the teachers are collectively efficacious. Based on my observation of these teachers, I believed that they were collectively efficacious. The surveys confirmed that these teachers are indeed collectively efficacious. Other researchers studying collective efficacy will want to administer the survey prior to their study of how the participants actually operationalized Bandura's (1977, 1993) theories.

CHAPTER 2

Review of Literature

Educators in a variety of settings often seek to discover how best to improve their students' achievement and learning. However, it is difficult to know where limited time and mental resources should be directed. In looking at what can be effective in education, research has shown that there is a reciprocal relationship between student achievement and collective teacher efficacy (Tschannen-Moran & Barr, 2004). Collective teacher efficacy is defined as the collective self-perception that the combined efforts of teachers in a given school make an educational difference to their students more so than the students' socioeconomic status, their homes, or their communities (Bandura, 1993; Goddard, et al., 2004). We also know that enhancing levels of collective teacher efficacy can have significant implications for student achievement (Tschannen-Moran & Woolfolk Hoy, 2001). Collective teacher efficacy is a simple idea that could yield powerful results, yet it remains an elusive concept—one that is difficult to enact (Tschannen-Moran & Woolfolk Hoy, 2001).

Individual teacher efficacy leads to collective teacher efficacy, and collective teacher efficacy leads to increased student achievement (Bandura, 1993; Goddard et al., 2004; Hoy et al., 2002; Tschannen-Moran & Barr, 2004). Bandura (1993) also showed that there is a relationship between teacher efficacy and collective teacher efficacy. Therefore, it is possible that teachers who are individually efficacious can operationalize the theories behind collective teacher efficacy in order to become efficacious as a group. Bandura theorized four factors that could lead to collective teacher efficacy including vicarious experiences, verbal persuasion, psychological arousal, and mastery experiences. Looking at the benefits of teacher efficacy on the achievement of students, it is appropriate to further investigate what collective efficacy is and

how individually efficacious teachers can come to be a group of educators who work together to demonstrate collective efficacy. In this review, I will first look at teacher teams and their known benefits before highlighting the additional benefits of teams having collective efficacy. The definitions of teacher efficacy and collective teacher efficacy will be explained as will the theoretical antecedents to gaining collective efficacy. As a conclusion, areas for future research will be suggested.

Teacher Teams

Kain (2001) showed that the team environment often determines the levels of professional growth the group is able to experience. A team environment makes learning more interactive and relevant. Regularly meeting with colleagues prevents teachers from continuing the non-productive practices that are more likely to occur when teachers are working in isolation, because conversations among teachers lead everyone in the group to see a broader set of possibilities (Kain, 2001). When teams of teachers are working effectively together, they focus their conversations on teaching, they work together to create curriculum and to discuss assessment, and they are able to share professional research with one another (Kain, 2001). Effective teams of teachers are also able to extend one another's content knowledge, strengthen skills and dispositions, and help one another develop leadership skills (Feiman-Nemser, 2001). Importantly, effective teacher teams encourage a focus on student welfare that drives teaching decisions instead of allowing colleagues to develop techniques that may work but that do not result in high levels of student learning and achievement (Feiman-Nemser, 2001).

In looking at teacher teams, research has shown that teachers who work effectively together have students who make the most significant gains on achievements tests (Strahan & Hedt, 2009; Troen & Boles, 2010). Schools can also expect a number of benefits to emerge

when teachers work effectively together. These include a reduction in teacher isolation, an increase in collegiality, the sharing of resources and ideas, and the opportunity for teachers to capitalize on one another's strengths (Troen & Boles, 2010). Teams can be especially effective when they engage in instructional talk instead of allowing their discussions to be consumed by logistical issues, when they are able to connect team conversations to classroom practice and classroom planning, when the team is able to work together to improve their collaborative practice, and when they have developed a system for ensuring individual and mutual accountability (Troen & Boles, 2010). Teams of teachers may even report that when they work effectively together, the best part of the year was the time they spent thinking and planning with one another (Strahan & Hedt, 2009). Although little research has been conducted on the effects that teacher friendship has on collaboration, it is assumed that interpersonal ties will result in a teacher team's increased ability to work well together (Lima, 1998). Teacher teaming is especially productive when teachers understand that they are more effective together (Honawar, 2008).

Teacher teaming promotes student learning and achievement (Moolenaar, Slegers & Daly, 2012), but teachers who demonstrate collective teacher efficacy go one step further; they are convinced that they "can successfully execute the behavior required to produce outcomes" (Bandura, 1977, p. 193). They believe that together they can have a more powerful influence on student achievement than can any other factor, including the students' home lives and their SES levels (Tschannen-Moran & Barr, 2004). Team members who believe that there is nothing they can do to make a difference for their students—no matter if they are working effectively together—will never achieve collective teacher efficacy (Donohoo, 2016).

Simply working well together as a team does not produce the same beliefs that stem from collective teacher efficacy (Donohoo, 2016). Goddard et al. (2000) have argued that in order to experience collective teacher efficacy, teachers must have the belief that their efforts as a group will have a positive impact on students. The teachers must believe as a group that they can influence even the most difficult and disadvantaged students, and these shared beliefs must become an important feature of the group's culture (Goddard et al., 2000). When these group beliefs are fostered, collective teacher efficacy is the result (Donohoo, 2016). Effective teacher teaming is not necessarily based on beliefs, but collective teacher efficacy is a belief held by all the teachers in a group. Whether the collective teacher efficacy beliefs would correspond with the viewpoints of an "objective observer" do not matter; what matters is that the group of teachers holds these beliefs and these beliefs are the reality that influences their behavior (Tschannen-Moran & Barr, 2004, p. 191). Collective efficacy and the core beliefs of the team that their influence can overcome barriers to learning are especially important for teachers who work in high-poverty school districts, whose student populations are most at risk for school failure. Collective teacher efficacy is also important for teacher teams that include new teachers. When novice teachers feel that they are part of a collectively efficacious group, their individual efficacy is positively influenced (Knobloch & Whittington, 2002).

Collective Teacher Efficacy and Student Achievement

Perhaps the most important feature of collective teacher efficacy is that the beliefs and behaviors of an efficacious group of teachers working together can have a powerful—and possibly the most powerful—influence on student achievement (Hoy et al., 2002; Tschannen-Moran & Barr, 2004). In a groundbreaking study, Bandura (1993) reached two conclusions: that student achievement is significantly and positively related to collective teacher efficacy and that

collective teacher efficacy has a greater effect on student achievement than does race, the home lives, or the socioeconomic status (SES) of students. Bandura also showed that collective teacher efficacy is positively related to differences seen among schools in both math and reading achievement levels. Consistent with Bandura's findings, Goddard et al. (2004) have shown that collective teacher efficacy is significantly and positively associated with the differences in student achievement levels that we see between schools.

Although most schools set high achievement levels for all students as their goal, standardized test scores show that some schools are more able to reach this goal than others. Caprara, Barbaranelli, Steca, and Malone (2006) have shown that previous levels of student achievement predict subsequent achievement, and that there is a relationship between teachers' levels of efficacy and student achievement patterns. Tschannen-Moran et al. (1998) have shown that when teachers work interdependently rather than independently they are more able to enact positive change in their students' lives. Kurz and Knight (2004) have argued that the different effect that groups of teachers have on their students could be explained by collective teacher efficacy.

In the current era of high-stakes testing and teacher accountability, teachers have less control over the curriculum and are not as effective when they work in isolation (Tschannen-Moran & Barr, 2004). When teachers work together and embrace collective teacher efficacy, they are more willing to accept responsibility for their students' academic achievement, and they do not uphold the long-held belief that race, low SES, low levels of academic ability, and the family and home lives of students inevitably lead to low levels of achievement. In fact, embracing the beliefs of collective teacher efficacy can lead to long-term change in levels of student achievement (Tschannen-Moran & Barr, 2004). When the collective efforts of teachers

increase teachers' feelings of empowerment, it leads to student success, which then leads to an increase in student empowerment, thereby breaking the cycle of student and teacher failure (Worth, 2014). It is possible that collective teacher efficacy has the strongest impact on student achievement because teachers engaged in collective teacher efficacy show greater effort and persistence and set more demanding goals for themselves, resulting in higher student performance and achievement levels (Hoy et al., 2002).

Teacher Efficacy

Before we can implement collective teacher efficacy, we must understand teacher efficacy. It is known that teacher efficacy is an important component of effective schools (Kurz & Knight, 2004). Teacher efficacy is defined as a teacher's belief in his or her own ability to execute the course of action required to reach a goal and the belief that he or she has the capability to influence student achievement (Bandura, 1977; Berman, McLaughlin, Bass, Pauly, & Zellman, 1977). Teacher efficacy is also seen when a teacher believes that he or she has a significant influence on how students learn (Kurz & Knight, 2004).

Efficacious teachers feel competent (Tschannen-Moran & Woolfolk Hoy, 2001). They can plan well, they are responsible, and they show persistence and effort even when setbacks occur (Hoy et al., 2002). Efficacious teachers also believe that they can make a difference for even the most difficult students (Hoy et al., 2002). When efficacious teachers believe that they have demonstrated success on a particular task, they will try even harder to achieve challenging goals (Ross et al., 2004).

Individual teacher efficacy. Individual teacher efficacy is important because of the positive influence efficacious teachers can have on themselves and their students. Efficacious teachers have the ability to honestly assess their own knowledge, competence levels, and their

personalities while also considering personal weaknesses regarding their ability to successfully complete a task (Goddard et al., 2004). Individually efficacious teachers know that they can help all students learn and they believe that they can make changes in their own beliefs and practices (Tschannen-Moran et al., 1998). They are also organized, are less critical of their students, and are able to work more persistently with struggling students (Tschannen-Moran & Woolfolk Hoy, 2001).

Teachers base their individual efficacy beliefs on their performance in their own classrooms (Tschannen-Moran & Barr, 2004). Efficacious teachers have well-managed classrooms, and they keep students on task. These teachers also have the ability to adopt project-based learning, and they tend to focus on intrinsic motivation rather than on extrinsic rewards and punishments (Czerniak & Schriver, 1994; Tschannen-Moran & Barr, 2004).

Collective teacher efficacy. Individual teacher efficacy can have important results but does not have the same effects on student achievement and teacher beliefs as collective teacher efficacy (Tschannen-Moran & Barr, 2004). Collective teacher efficacy may be even more powerful than individual teachers' beliefs about their own efficacy (Tschannen-Moran & Barr, 2004) but individual efficacy can lead to high levels of perceived collective efficacy (Bandura, 1993). A group of teachers with efficacious beliefs exhibit high levels of academic optimism (Hoy, Tarter, & Woolfolk Hoy, 2006), work interdependently to be change agents for their students (Kurz & Knight, 2004), and are persistent and resilient when working with even difficult students (Tschannen-Moran & Barr, 2004). Individually efficacious teachers also exhibit these qualities, but teachers who exhibit collective teacher efficacy exhibit these qualities as a group, not simply as a combination of individual teacher's abilities and beliefs about

themselves (Bandura, 1993). Having this set of beliefs about efficacy as a group is what sets these teams of teachers apart from teams that are merely cooperative.

Relationship between teacher efficacy and collective teacher efficacy. Individual teacher efficacy can lead to collective teacher efficacy, and collective teacher efficacy results in teacher beliefs that are similar to those exhibited by individually efficacious teachers (Kurz & Knight, 2004). An essential consideration when teachers are transitioning from simply being individually efficacious teachers to teachers that together exhibit collective efficacy is the group aspect of collective efficacy. Caprara et al. (2006) have shown that an important component of moving toward collective teacher efficacy occurs when a teacher reaches the point where, in describing his or her own personal efficacy, he or she cannot continue without referring to the contribution that colleagues have made to his or her success. Importantly, Goddard et al. (2004) demonstrated that when teachers stop using the word “I” to describe what they are doing for students and start relying on the word “we” instead, the collective nature of the efficacy in the group becomes obvious.

Factors Leading to Collective Teacher Efficacy

The research on collective teacher efficacy is theoretical in nature; it is only anticipated that groups of teachers who engage with these theoretical elements will become more collectively efficacious. As teachers work together to become collectively efficacious, it must be recognized that this is a group effort. Even teachers who are individually highly efficacious, or who are moving in that direction, and who work well as a team cannot enact collective teacher efficacy if they are not working together to operationalize the theoretical antecedents of collective teacher efficacy.

Vicarious learning. Hoy et al. (2002) have argued that vicarious experiences present a critical aspect in the development of collective efficacy. Vicarious experience is defined as occurring when teachers are able to watch competent and credible models, who are like the teachers themselves, exhibiting the behaviors that the teachers would like to see in themselves (Bandura, 1977). When teachers observe the successes of their colleagues at other schools, their belief in their own ability to succeed is increased (Hoy et al., 2002). Observing other people successfully reaching the goal that the observer is attempting to accomplish provides a source of efficacy. The observation of a successful experience allows the observer to reflect on and rate his or her own ability, because the model has provided success criteria and has helped the observer set his or her own teaching goals (Tschannen-Moran & McMaster, 2009).

It has also been shown that schools that respond to their own lack of achievement by implementing a reform that was effective in a neighboring district are involved in a vicarious learning experience that will build collective efficacy (Goddard et al., 2004). Moreover, when teachers hear the success stories of groups of teachers at other schools these vicarious experiences develop not only personal teacher efficacy, but they also enhance collective teacher efficacy because the teachers begin to believe that they can become successful together. The more closely the observer identifies with the model, the stronger the impact on efficacy (Goddard et al., 2004). In addition, groups of teachers or schools wanting to improve their own levels of student achievement may experience at least perceived gains in collective teacher efficacy when they observe the successful programs offered at higher achieving schools (Goddard et al., 2004).

Teachers have opportunities for vicarious learning when they visit the teachers at other schools where student achievement is high and where the high-achieving teachers share teaching

strategies, methods, and samples of student work. This allows the observing teachers to see what has been effective for the high-achieving teachers (Tschannen-Moran & Barr, 2004).

Verbal persuasion. Verbal persuasion is often used because it is easy to implement and is readily available (Bandura, 1977). People can be led, through meaningful discussion, to believe that they can successfully overcome what have previously been challenging situations (Bandura, 1977). Verbal persuasion occurs when colleagues, supervisors, and administrators vocalize encouragement in an attempt to strengthen the belief of a teacher in his or her own ability to achieve a desired goal. Verbal persuasion can also serve to influence a group of teachers toward higher levels of success, especially when challenges or difficulties arise (Tschannen-Moran & McMaster, 2009). Verbal persuasion in school settings can come from a variety of sources, including fellow teachers, administrators, and colleagues at other schools.

It is important to note that efficacy that is strengthened through verbal persuasion is likely to have a somewhat weak effect (Bandura, 1977). When success is based only upon being verbally persuaded that one possesses the skills necessary to engage with and overcome difficult situations, a failure experience can undo the positive effects of the vocalized encouragement (Bandura, 1977). Verbal persuasion does not provide the important foundation that can be provided by an authentic mastery experience. Therefore, although verbal persuasion is easy to put into place and is widely used, it does not always lead to the powerful results that having a successful experience can produce (Bandura, 1977).

Psychological arousal. Psychological or emotional arousal can be perceived as being negative or positive based on whether the person sees the situation as a challenge or a threat (Tschannen-Moran & McMaster, 2009). Moderate levels of arousal, when perceived as a challenge, can improve performance by focusing attention and energy on the task, whereas high

levels of arousal, when perceived as a threat, may diminish an individual's skills and capabilities. Teachers may feel threatened when they are being evaluated, but when they are able to try new teaching strategies within a supportive, collaborative environment the threat is reduced and the situation becomes challenging instead of frustrating (Tschannen-Moran & McMaster, 2009). Teachers who are supported in the challenge may even have feelings of accomplishment and exhilaration, while teachers who are threatened feel fear and frustration (Tschannen-Moran & McMaster, 2009).

People often gauge how anxious and vulnerable they are based on their state of psychological arousal: when individuals have balanced levels of stress, they are more capable of achieving their goals (Bandura, 1977). High levels of stress may even weaken the ability of a group to function, thus lowering the confidence that the group members have in their own abilities (Tschannen-Moran & McMaster, 2009). However, moderate levels of psychological arousal—such as those present when an individual or group feels challenged—may improve the group's ability to accomplish a goal. These moderate levels of arousal allow the group to focus on goal attainment instead of focusing on the high stress levels associated with the task (Tschannen-Moran & McMaster, 2009).

Mastery experiences. Mastery experiences occur when teachers successfully adopt proven instructional strategies, such as the use of graphic organizers, and then see that their students' achievement levels have risen as a result (Tschannen-Moran & Barr, 2004). When teachers see that together with their colleagues and their students they have achieved the level of mastery that they were striving for, that success enhances their feelings of collective teacher efficacy. Once efficacy is enhanced through mastery experiences, it can be generalized to other situations, meaning that performance accomplishments in one situation can result in the belief

that success can be achieved in other situations as well (Bandura, 1977). Groups of teachers who are persistent in their efforts and reach their goals begin to trust that they can master even more difficult tasks (Bandura, 1993). Likewise, the effects of failures are minimized when mastery experiences have occurred (Bandura, 1977). Mastery experiences, or performance accomplishments, are thought to be the most powerful determinant of efficacy, especially for teachers who have been teaching for several years and who have memories of mastery experiences that they can look back on when challenging situations arise (Tschannen-Moran & Woolfolk Hoy, 2007).

Application

When the antecedents of collective teacher efficacy outlined by Bandura (see 1977, 1993), which are vicarious learning, verbal persuasion, psychological arousal, and mastery experiences are deliberately incorporated by a team of teachers, collective teacher efficacy is likely to result (Goddard et al., 2004). Teams of teachers must have these types of experiences before they can accept challenging goals and adopt the level of persistence necessary to achieve high performance levels together (Goddard et al., 2004). Donohoo (2016) has suggested that transferring the theoretical and research-based antecedents of collective teacher efficacy into actual practice involves four steps: (a) planning with a meaningful focus; (b) acting by developing shared knowledge and understandings; (c) assessing by drawing conclusions, celebrating efforts, and debriefing the process; and (d) observing by collectively examining outcomes. These steps toward building collective efficacy, in combination with Bandura's theoretical antecedents, may become the building blocks that create teams of teachers who experience collective efficacy and who enjoy the benefits of working jointly toward common goals.

Future Research

Goddard et al. (2004) have argued that much work still needs to be done in studying the concept of collective teacher efficacy. A limited number of studies of collective teacher efficacy exist (Hoy et al., 2002). My search for research on collective teacher efficacy resulted in only six published studies since 2002 (see Goddard et al., 2004; Hoy et al., 2006; Kurz & Knight, 2004; Prelli, 2016; Ross et al., 2004; Tschannen-Moran & Barr, 2004). Of the studies done, the focus has been varied, such as determining collective efficacy beliefs (Goddard et al., 2004), academic optimism of schools (Hoy et al., 2006), the relationship between goal consensus and collective teacher efficacy (Kurz & Knight, 2004), the influence that a principal can have on teams that are collectively efficacious (Prelli, 2016), the relationship between collective teacher efficacy and prior student achievement (Ross et al., 2004), or showing the reciprocal relationship between collective teacher efficacy and student achievement (Tschannen-Moran & Barr, 2004). However, research has not yet been conducted regarding the relationship between the operationalization of the theoretical beliefs of collective teacher efficacy and the ability of groups of teachers to become collectively efficacious.

Although Bandura's work (1993) has outlined the antecedents to collective teacher efficacy as vicarious experiences, verbal persuasion, psychological arousal, and mastery experiences, others advocate an exploration of those and possible other antecedents of collective teacher efficacy (Tschannen-Moran & Barr, 2004; Tschannen-Moran & Woolfolk Hoy, 2007). In particular, there is no published research on how the antecedents of collective teacher efficacy affect a group of efficacious teachers (Tschannen-Moran & Woolfolk Hoy, 2007) or how a group of efficacious teachers becomes a teacher group that has collective efficacy. Research is needed that depicts the actual experiences of teachers in developing collective efficacy (Donohoo, 2016).

Although collective teacher efficacy is a promising concept for student achievement, the last study on the relationship between collective teacher efficacy and student achievement was published in 2007 (see Tschannen-Moran & Woolfolk Hoy, 2007). It is that 2007 study that calls for additional research that is qualitative in nature. This study attempts to answer that call but also to add to the literature of collective teacher efficacy by coming to understand if and how teachers operationalize Bandura's theoretical antecedents in developing collective efficacy.

CHAPTER 3

Method

In my role as English content specialist for my school district, I have the opportunity to meet and talk with many of the district's English Language Arts (ELA) teachers on a regular basis. Many of our discussions center around the teachers' end-of-level testing data. In looking at recent data, I noticed that there are two groups of ELA teachers at two different junior high schools who together, in their respective schools, consistently achieve high growth and high proficiency scores on the ELA end-of-level test. I began to wonder what they are doing that other teachers are not doing. As I observed their classes and talked with them individually and together, it became clear to me that these teachers are not only achieving student success in their own classrooms, but they are also highly collaborative as a team. I began to suspect that they are also collectively efficacious and began to wonder if these teachers' high level of collaboration is what accounts for their students' success. This led me to question what could be learned from these two groups of teachers.

In this study, surveys were utilized to determine both individual and collective levels of teacher efficacy for these groups of teachers. Group interviews were used to answer my research question, which is: How did two groups of individually efficacious teachers operationalize the theoretical antecedents of collective teacher efficacy? This chapter outlines the research design of the study, describes the settings, participants and the data sources that were used, and outlines the procedures that were followed in conducting the study, as well as the analysis of the data. Reliability and limitations are also discussed.

Research Design

The study is qualitative in nature. It is a response to a call in the collective teacher efficacy literature for research that is qualitative and that focuses on the real experiences of collectively efficacious teachers (Donohoo, 2016; Tschannen-Moran & Woolfolk Hoy, 2007). I used a narrative approach to report the findings. Although narrative research has been criticized because of its focus on the individual, a narrative approach is the most appropriate way to understand the experience of the participants in this study specifically because a narrative approach seeks to understand questions about groups through the actual experiences of individuals (Marshall & Rossman, 2016). Although there will always be “a difference between life as told, and life as lived” (Marshall & Rossman, 2016, p. 157), narrative research allows for a study that is personal and reflective in nature, but still offers a factual history that is designed to reveal what is meaningful and important to the person and that tells a story with new meaning (Connelly & Clandinin, 1986).

The Institutional Review Board (IRB) of Brigham Young University approved the recruitment of the teachers, and the teachers were active participants in the research and they had the final say in what was written about their experience. Each of the participants volunteered his or her participation and signed a consent form (Appendix A) prior to the beginning of the study. Anonymity was provided by assigning a pseudonym for each teacher and for each school. Because the move toward collective teacher efficacy is a group endeavor, it was important that the participants were aware that each member was involved in the research process and they understood that their interactions with each other were important components. To ensure that the participants' stories are as real as possible, the participants were transparent and vulnerable.

However, anonymity was provided by assigning a pseudonym for each teacher and for each teacher, school, and school district represented in this study.

In order to ensure ethical practices, I acknowledge that I am emotionally involved in the work that I conducted, and I am aware that my very presence in the lives of the participants had an effect on the research (Marshall & Rossman, 2016). The participants knew that a study was occurring, and they knew that they were the most important piece of the study (Marshall & Rossman, 2016). I also acknowledge that I have a long-term relationship with each of the participants.

Context of the Study

Due to my position, I have the opportunity to work with each of the ELA secondary teams in the district. As part of my job, I spend the majority of my time with teachers who are excellent so that I can share what they are doing with other teachers. Because of the high growth and proficiency scores demonstrated by the teachers at Legacy Junior High School and Heritage Junior High School (pseudonyms), I decided to make a formal study of their work. After years of friendship and professional collegiality with these teachers, I conducted formal observations in an attempt to discern what they are doing that is different from what other teachers are doing using an observation tool chosen by the members of the secondary curriculum department of Mountain School District (pseudonym) to guide and standardize our teacher observations during the 2016-2017 school year. The observations provided my formal entrée into these six teachers' working lives.

When I noticed that these two groups of teachers were achieving high-growth and high-proficiency scores, I was pointedly reminded that the two schools where these teachers work are very different from each other. One is the second poorest in the district with the second-highest

number of minority students while the other is the wealthiest school in the district with the lowest number of minority students. Because their SES levels are so different, I began to wonder if something other than student SES might be the biggest influence on test scores at these two schools. I suspected that their high achievement correlates with the high levels of collaboration observed among the teachers and even collective teacher efficacy.

In an effort to explore how two groups of teachers put collective efficacy into practice, teams of teachers from the two junior high schools—which serve students in grades seven, eight, and nine—who have demonstrated that they are high performing and highly collaborative, were invited to participate. This group of high-performing, highly collaborative teachers is made up of three change-agent teachers from the two different ELA departments mentioned previously.

Settings

The settings for this study include two junior high schools in a large school district, Mountain School District, located in the western United States, where I work. This district is the largest school district in the area, serving nearly 80,000 students.

Legacy Junior High School. Legacy Junior High has the second-lowest socioeconomic status of any junior high school in Mountain School District. The school is located in an increasingly diverse community. Hispanic and Latino community members make up about 16% of the population in the city where Legacy Junior High School is located. A similar racial demographic is represented at Legacy Junior High School. The percentage of students at Legacy Junior High School who receive free or reduced lunch, a federally established indicator of poverty, is approximately 50%.

Heritage Junior High School. Heritage Junior High School is the wealthiest junior high school in Mountain School District. The school is located in a very racially homogeneous

community; the student body of the school is 100% white, with the majority from upper-class families. Only approximately 7% of the students qualify for free or reduced lunch.

Participants

Two groups of high-achieving, highly collaborative teachers were selected from the entire group of junior high ELA teachers in Mountain School District. They were invited to participate because they exhibit a unique phenomenon—they have high growth and high proficiency scores on the state-mandated end-of-level ELA test as a group. While there are many teachers in the district who individually demonstrate high levels of growth and proficiency, the teachers selected as participants are achieving high levels of growth and proficiency not in isolation but in conjunction with two other teachers in their departments.

Previous conversations that I engaged in with these teams, prior to the study and in my role as district English content specialist, revolved around why these two groups of teachers felt they have been successful together. They talked about the process they had gone through to build their collaborative abilities. Additionally, in talking with these high-achieving teachers, it appeared to me that the focus was on efficacy, collaboration, and dedication to working together as a professional learning community and a high-functioning team.

I have worked with the teachers from Legacy Junior High School and Heritage Junior High School for many years. We have learned with and from each other at both district-level meetings and state-level conferences. I have spent numerous hours in their classrooms, informally observing their teaching and talking with them about their teaching strategies. I have attended their department meetings, and I have both a professional and personal relationship with each of them.

Group one. Group one consists of three teachers from Legacy Junior High School. The teachers in group one are all Caucasian, middle class, and hold a bachelor's degree in education. Brad is male and has been teaching for four years, has been in the district for his entire career, and teaches grades seven and eight. James is male and has been teaching for 15 years, has been in the district for his entire career, teaches grades seven and eight, and has a master's degree in education. Kent is male and has been teaching for 15 years, has been in the district for his entire career, has a master's degree in educational leadership, is gifted endorsed, and teaches grades seven and eight. Each of the participants teaches English Language Arts, and they do not have any disabilities. This group of teachers has been working together as a team for four years. They are a grade-level team, and they work together to plan all their instruction, their student assessments, and they work together to analyze all of their student data collectively. This team of teachers never works in isolation.

Group two. Group two consists of three teachers from Heritage Junior High School, which is the wealthier of the two schools. Each teacher in group two is Caucasian, middle class, and holds a bachelor's degree in education. Paul and Matt work together as a grade-level team. Grace works closely with Paul and Matt even though she does not teach a common grade level. Grace is the department chair, and has been the guide for the collaboration and adult learning that has taken place on the team. Paul and Matt also collaborate with Grace regularly regarding instructional practices. Paul is male and has been teaching for nine years, has been in the district for his entire career, and teaches grades seven and nine. Matt is male and has been teaching for five years, has been in the district for his entire career, and teaches grades seven and nine. Grace is female, has been teaching for 14 years, has been in the district for her entire career, is gifted

endorsed, and teaches grade eight. Each of the participants teaches English Language Arts, and none of the participants in this study has any disabilities.

Data Sources

In order to uncover both the individual teacher's stories and the story of the teacher teams, a variety of data sources were gathered. First, existing data from previous classroom observations of the teachers was used. In addition, the teachers answered the questions on the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001) and the modified Collective Efficacy Scale (Goddard et al., 2000; Prelli, 2016). They also participated in a group interview with the teachers from their own school. Each is described in further detail below.

Existing observation notes. Observations are not only an accepted form of qualitative data collection (Cresswell, 2014), but they are a basic and essential element of all qualitative studies (Marshall & Rossman, 2016). They can be used as both a data collection and an analytical tool (DeWalt & DeWalt, 2011). I frequently use observations in my role as English content specialist. The observations used for this study had been previously conducted in each teacher's classrooms as a matter of my role in the district for the purpose of identifying the challenges and dilemmas teachers face while also highlighting the ways in which the teacher responds to these challenges (Hancock, Ockleford, & Windridge, 1998). Because of my long-standing relationship and friendship with the teachers in this study, and my desire to learn from each of them, I had met with each of the participants several times during the 2016-2017 school year. I formally observed their classes once. These formal observations took place during one 85-minute class period.

As I conducted these observations, I recorded reflective field notes, which included my own personal thoughts, insights, and noted themes that I recognized as emerging during the

observations (Creswell, 2014). I have access to the notes that I took during these observations, and I used these existing observation notes to inform my study.

Teachers' Sense of Efficacy Scale. Individual teacher efficacy can lead to collective teacher efficacy, and collective teacher efficacy results in teacher beliefs that are similar to those exhibited by individually efficacious teachers (Kurz & Knight, 2004). Therefore, it is important to determine if the participants in this study are individually efficacious. For this study, I selected to use the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001). It was administered at the beginning of the study to verify that all of the teachers are individually efficacious or that they are moving toward individual efficacy (Appendix B).

Also named the Ohio State Teacher Efficacy Scale (OSTES), the Teachers' Sense of Efficacy Scale is a Likert-type scale wherein teachers are asked to indicate how much they can do about a variety of teaching situations, ranging from 1-nothing to 9-a great deal, with higher scores indicating higher efficacy (Tschannen-Moran & Hoy, 2001). Two versions of the measure exist (a 24 item and a 12-item short form) and both have been validated through numerous studies and through comparison with existing scales (Tschannen-Moran & Hoy, 2001; see also Armor et al., 1976; Gibson & Dembo, 1984). I used the 12-item short form. The Teachers' Sense of Efficacy Scale considers a wide range of skills and dispositions important to good teaching, while not asking questions that are so specific that it would prove useless as a tool to compare teachers who teach in different content areas and grade levels.

Like previous instruments, the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001) looks at how teachers cope with student difficulties and how they overcome the challenges of an unsupportive environment. Unlike other instruments, the Teachers' Sense of Efficacy Scale also generates information about how the teacher supports student thinking,

shows creativity, maintains flexibility in teaching and assessing, and is effective with already capable students (Tschannen-Moran & Hoy, 2001). For the purposes of this study, a score of 7.1 or higher indicates that a teacher is individually efficacious.

Modified Collective Efficacy Scale. Collective teacher efficacy can be measured for both a school faculty and for a small teacher team using the modified Collective Efficacy Scale (Goddard et al., 2000; Prelli, 2016). Prelli (2016) showed that the Collective Efficacy Scale (Goddard et al., 2000) can be modified to measure the collective efficacy beliefs of teachers at a team level. She did this by adding statements to the Collective Efficacy Scale (Goddard et al., 2000) that are “parallel to the original statements but specific to whether the teachers were rating the perceptions of faculty or team” (Prelli, 2016, p. 177). The original scale and the scale modified for team use were found to be statistically significantly correlated in their ability to determine levels of collective teacher efficacy (Prelli, 2016).

Both the original and the modified Collective Efficacy Scale (Goddard et al., 2000; Prelli, 2016) are Likert-type scales that present statements in which teachers determine their level of agreement ranging from 1-strongly disagree to 6-strongly agree. All items in the Collective Efficacy Scale (Goddard et al., 2000) are focused on teacher perceptions of the group, not the individual (Goddard, 2002). I modified and then administered the Collective Efficacy Scale (Goddard et al., 2000) to both groups of participants, much as Prelli (2016) did so as to be fit for small team use (Appendix C). The modifications required that wherever the word school is used in a question, the term be changed to team. The modified Collective Efficacy Scale has 21 total questions, and a score of 600 or higher indicates that a team of teachers is collectively efficacious.

Group interviews. Two group interviews, one for each team, were conducted. In both interviews, the team of teachers was asked open-ended questions (Appendix D) that emerged from my existing observation notes, the analysis of the teachers' answers on the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001), and the modified Collective Efficacy Scale (Goddard et al., 2000; Prelli, 2016). Open-ended questions allow the participants to voice their own experiences without forcing the possibilities for response (Creswell, 2014). The interviews were also dialogic in order to generate new meaning for the teachers (Marshall & Rossman, 2016). I respected the way the participants framed and structured their responses.

Limitations of group interviews include the fact that people often rely on others' opinions and understandings to inform their own thinking (Marshall & Rossman, 2016). Group interviews also limit the power that an interviewer has over a group, as the group may use their interview time to discuss irrelevant or context-specific issues that do not pertain to the research being conducted (Marshall & Rossman, 2016). However, group interviews stimulate recall of group circumstances and produce greater depth of story (Marshall & Rossman, 2016). Group interviews also have the potential to generate thinking that goes beyond what each individual can contribute on his or her own (Carey & Asbury, 2016). Group interviews are the most appropriate form of interview for this study because the focus is on the experience of the group together rather than only on the experiences of each individual in the group. The qualitative data generated by the group interviews was not used in place of the quantitative data provided by the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001) or the modified Collective Efficacy Scale (Goddard, et al., 2000), but was used to explicate and expound; the quantitative data was used for comparison and validation purposes.

Procedures

The timeframe for the study was October 2017 through March 2018. Creswell (2014) has argued that the criteria for a high-quality qualitative study include: narrating the participants' story, the development of an accurate chronology of events, a description of the setting and the people participating in the story, as well as close collaboration with the participants who are sharing their stories. I employed elements of each of these. The study began with the retrieval of the existing observation data set and also included administration of both surveys, conducting group interviews, and the analysis of all data.

Analysis of existing observation data. The field notes that were collected during prior classroom observations of each teacher's 85-minute class period and other informal observations done as part of my job in the district were used. These field notes included information from conversations regarding how the school year was going, and about what the teachers were individually and collectively doing to ensure student achievement. The notes from these discussions were labeled as a personal reflection. They were originally printed and also stored in a Google doc. I accessed them online and in printed form. All printed documents were stored in a locked room.

I read through these notes to look for patterns and themes. I made notes regarding these patterns and themes, and then used these notes to guide the questions that I created for the group interviews. My existing observation data indicated that the teachers were incorporating Bandura's theoretical antecedents regarding collective teacher efficacy (1977, 1993) into their work as a team, so my interview questions focused on discovering what the teachers actually did to operationalize the theoretical antecedents of collective teacher efficacy.

Administration of the surveys. At the beginning of the study, I administered the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001) and the modified Collective Efficacy Scale (Goddard et al., 2000; Prelli, 2016) to the two groups of teachers on a Monday afternoon, when the teachers were together in their weekly collaboration meetings. Each group completed the surveys on their own and in my presence. The teachers answered the questions on the Teachers' Sense of Efficacy Scale first, handed them in to me, and then answered the questions on the modified Collective Efficacy Scale.

Creation of the questioning protocol. I developed the questioning protocol for use in the group interviews. Once I obtained the completed surveys, answers on the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001) and the modified Collective Efficacy Scale (Goddard et al., 2000; Prelli, 2016) were reviewed along with the existing observation data to form questions regarding the teachers' sense of collaboration, self-efficacy, and collective efficacy as reflected in the scores and observed actions. I began the interviews by asking if the work the teachers had done together to become highly effective and collaborative was deliberate.

Additionally, I included two questions regarding each of Bandura's antecedents of collective teacher efficacy (1977, 1993), which are vicarious learning, verbal persuasion, psychological arousal, and mastery experiences. This was done in order to determine the influence that each of these four theoretical antecedents had on the teachers' journeys toward collective teacher efficacy. Before asking the questions, I defined each of the theoretical antecedent and then asked if each of the antecedents was indeed a noteworthy step in the teachers' experience in developing collective teacher efficacy. I then asked them to give specific examples of how vicarious learning, verbal persuasion, psychological arousal, and mastery experiences helped them to become collectively efficacious.

Conducting interviews. The group interviews were formally scheduled and took place two weeks after both surveys were administered, in October of the 2017-2018 school year. The purpose of conducting the interviews after the surveys were already completed was an effort to prevent the interview conversations from biasing the teachers' answers on the surveys. I used the following interview protocol:

1. One week prior to the interview, questions for the interview were shared with the group. This allowed time for the participants to consider how they work together.
2. I then met with each group for the scheduled interview, using the list of questions generated. Questions were presented one at a time and then opened up for discussion until I had asked each of the questions.
3. The interviews were audio recorded, and notes were taken during the interviews which allowed for follow-up questions. In order to explore how the participants have operationalized the theoretical antecedents of collective teacher efficacy, elaborating and probing questions were needed to clarify and expand the participants' answers (Creswell, 2014).
4. I ended the interviews by formally thanking the participants, assuring them that their responses would be kept confidential (Creswell, 2014).

The interviews for the separate groups were held in one of the teacher's classrooms, which provided a private setting for the interviews. The interviews took place after school and lasted for approximately one hour. Each was audiotaped and transcribed for analysis. The transcribed interviews and my notes were stored online and in print form. The files were securely stored.

I conducted the interviews, which were dialogic in nature so that the participants could generate new meaning together. I shared the talk time with my participants, and even though I had already generated specific questions to explore, I respected the way the participants structured their responses as the interview unfolded through follow-up questions (Marshall & Rossman, 2016). By structuring the interviews in this way, participants were able to engage in a deep discussion about what they had done to become collectively efficacious—specifically, how the theoretical antecedents of collective teacher efficacy had become a reality for them.

Data Analysis

The majority of the data was collected from the group interviews. The existing observation notes, which were reviewed to inform the questioning protocol for the group interviews, also provided important data, as did the teachers' answers on both surveys. Each of these data sets informed the other in a variety of ways.

Reviewing existing observation notes. My existing observation notes and my reflective field notes on the discussions that I had with each teacher following the observations was reviewed to look for themes and important ideas. This review of the existing notes was then used to inform the questions that I created for the group interviews. I read through my existing observation notes several times, making note of themes and patterns. The themes and patterns indicated that the teachers were utilizing Bandura's theoretical antecedents, even if they did not know that was what they were doing.

Scoring the Teachers' Sense of Efficacy Scale. The teachers' answers on the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001) were scored using the predetermined mean to show levels of teacher efficacy. Higher mean scores on the Teachers' Sense of Efficacy Scale demonstrate higher levels of individual teacher efficacy (Tschannen-Moran & Hoy, 2001).

Data was analyzed by scoring the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001) for the two groups of teachers to determine the level of efficacy the teachers possess. For the purpose of this study, a score above 7.1 indicates that my participants are individually efficacious. When scoring, it was important to conduct a factor analysis to determine how the respondents have answered the questions. Three factors are moderately correlated to teacher efficacy: efficacy in student engagement, efficacy in instructional practices, and efficacy in classroom management (Tschannen-Moran & Hoy, 2001). To determine efficacy, the unweighted means of the items that load on each factor are computed (Tschannen-Moran & Hoy, 2001). Since the short form was used for this study, these are efficacy in student engagement: items 2, 3, 4, and 11; efficacy in instructional strategies: items 5, 9, 10, and 12; and efficacy in classroom management: items 1, 6, 7, and 8. A mean score for engagement is 7.2 out of 9. A mean score for instruction is 7.3 out of 9, and a mean score for management is 6.7 out of 9 (Tschannen-Moran & Hoy, 2001). A mean for the entire Teachers' Sense of Efficacy Scale is 7.1 out of 9 (Tschannen-Moran & Hoy, 2001). I looked at these scores in relation to the existing observation field notes and the interview transcripts. I anticipated that the qualitative data gathered from the group interviews would support the teachers' answers on the Teachers' Sense of Efficacy Scale. These scores informed me of each teacher's sense of individual efficacy.

Scoring the modified Collective Efficacy Scale. Eleven of the items on the Collective Efficacy Scale (Goddard et al., 2000) align with the level of agreement (or number) the participant chooses for the corresponding statement. Ten of the items are reversed scored, meaning that a one corresponds with a six, a five corresponds with a two, and so on. The scale is scored in the following steps:

1. First reverse scores on the following items: 3, 4, 8, 10, 11, 12, 16, 18, 19, and 20.

2. Then add the scores for all 21 items; the greater the sum, the higher the collective efficacy.
3. Average all the individual teacher scores to find a collective efficacy score of the team.
4. The collective efficacy score can then be converted to a standardized score with a mean of 500 and a standard deviation of 100, using the following formula: $SdS \text{ for CE} = 100(CE - 4.1201) / .6392 + 500$.
5. Next, compute the difference between the team's collective efficacy score and the mean for the sample used by Goddard and Hoy (CE-4.1201).
6. Then multiply the difference by 100 and divide the product by the standard deviation of the normative sample (.6392).
7. Add 500 to the calculation, resulting in a standardized score for the collective efficacy of the team. This score will standardize the team scores against the normative data (Goddard et al., 2000).

Goddard et al. (2000) chose 452 teachers from 47 randomly selected elementary schools in Ohio to answer the questions on the Collective Efficacy Scale. In the Goddard et al. (2000) study, this data was analyzed and the results showed that the factors measured by the Collective Efficacy Scale provide criterion-related and predictive validity evidence for the scores on the scale. When other groups of teachers answer the questions on the scale, their scores can then be standardized against the scores of the Ohio sample (Goddard et al., 2000). Higher scores demonstrate higher levels of collective teacher efficacy. A score of 800 is higher than 99% of the schools in the sample, a score of 600 is higher than 84% of the schools in the sample, while a score of 500 is average; a score of 400 is lower than 84% of the schools in the sample, and a

score of 200 is lower than 99% of the schools in the sample (Goddard et al., 2000). This range of scores is similar in its reporting system to that used to report scores on such standardized tests as the Scholastic Aptitude Test and the Graduate Record Examination (Goddard et al., 2000).

I modified the questions on the Collective Efficacy Scale for my work with the two teams of teachers in this study by changing the word faculty in the questions on the scale to the word team. Prelli (2016) showed that this modification resulted in statistically relevant scores for small teacher teams. The results of the modified Collective Efficacy Scale were used to determine how collectively efficacious these two groups of teachers really are. For the purpose of this study, a score over 600 indicates collective teacher efficacy.

Coding interview transcripts. Codes are labels that give meaning to the inferred information collected during a study (Miles & Huberman, 1994). Codes are attached to words, sentences, or even whole paragraphs in order to give the information meaning (Miles & Huberman, 1994). The codes are then used to categorize the pieces of text. Once the text is categorized, conclusions can begin to be made from the data (Miles & Huberman, 1994).

The transcribed interviews were coded during my first pass using a priori codes, which were Bandura's four antecedents of collective teacher efficacy: vicarious learning, verbal persuasion, psychological arousal, and mastery experiences. I did not casually add, remove, or redesign these a priori codes during the coding process (Miles & Huberman, 1994). On my second pass through the data, I performed open coding in an effort to discern additional themes that emerged. For each group of teachers, only one additional theme emerged: the importance of effective teacher teams. The codes were applied to blocks of information in the transcripts. These blocks of information were sentence, multi-sentence, or even a paragraph in length (Miles & Huberman, 1994). Multiple codes were sometimes applied to each block of data (Miles &

Huberman, 1994). I utilized code-checking to add clarity and as a reliability check (Miles & Huberman, 1994). To accomplish this, I employed an outside coder to code ten pages of the clean transcript, using the codes and definitions from my code book. By following this process, our inter-rater agreement reached approximately ninety percent.

Creating the event listing matrices. Based on the coded data, I identified critical incidents in the process of collective efficacy development. I did this by looking at each section of the data that had been labeled with the same code, and then I chose the ones that I felt were most important based on the comparison to the teachers' answers from the surveys and group interviews, as well as my own thoughts and impression as I made connections (Miles & Huberman, 1994). Overlap in these three data sources directed me to the important and even critical information. I also categorized critical incidents as those the teachers verbally identified as being important to them.

Once the critical incidents were chosen, and the notes regarding the critical incidents were complete, I displayed my data using an event listing matrix (Miles & Huberman, 1994). Because my research purpose is to demonstrate how two groups of teachers operationalized the antecedents of collective teacher efficacy, I needed to understand the critical incidents that the teams experienced. The matrix created a visual display of this information (Appendix E). The matrix also helped me show that "events long ago in time have consequences for the present" (Miles & Huberman, 1994, p. 111) and that "distant events can have consequences on close events" (Miles & Huberman, 1994, p. 111). By putting the critical events in order, I was able to look at how the critical events were connected (Miles & Huberman, 1994).

The matrix moves from left to right and includes categories for the a priori codes and effective teacher teaming, a definition of each code, and a quote from the transcribed interviews

that served as an exemplar of the codes. Use of the event listing matrix allowed me to take the information as presented in the interviews and organize it in the order the events of the story actually occurred, since individuals typically tell their stories in a non-sequential, non-logical manner (Creswell, 2014). This resulted in a linear storyline for each team.

Restorying the data. Restorying is a form of narrative data analysis that allows the researcher to retell participants' experiences (Ollerenshaw & Crenshaw, 2002). Putting the critical events in an event listing matrix guided my restorying process, allowing me to follow a plotline that contains elements of a story such as setting, characters, actions, problem, and resolution (Creswell, 2014). Two separate stories—one for each participant group—were written. I began each by describing the setting (the schools), the characters (the teachers), and then the events that led the teachers through their experience with collective teacher efficacy. This process culminated in a finished story that provided a logical sequence of not only events but personal experiences (Creswell, 2014). Restorying was a critical step because the narrative itself allowed me “to understand a complex chronology in its full richness” (Miles & Huberman, 1994, p. 111). After completing the restorying process, I purposefully constructed vignettes that captured and conveyed the essence of each critical piece of the participants' stories. The process of restorying allowed me to capture the essence of how and why experiences were important and even critical for the participants.

Member checking. Reliability of the finished stories was ensured through triangulating the data, which validates the data by employing multiple methods in an effort to offer the most accurate picture of the findings. I triangulated the data by using corroborating evidence from the three teachers in each team and by using the four types of data (past observations, the scores on the Teachers' Sense of Efficacy Scale, the scores on the modified Collective Efficacy Scale, and

the group interviews). The existing data from the classroom observations, and the data obtained from the teachers' answers on the two surveys also informed the questioning protocol. The questioning protocol was then used to guide the group interviews. The teachers' answers on the Teachers' Sense of Efficacy Scale and the modified Collective Efficacy Scale corroborated the level of both individual and collective efficacy that exists, and the data from the group interviews was used to demonstrate the process that the two groups of teachers went through in order to become collectively efficacious. In triangulating the data, I attempted to ensure the accuracy of the study because the information was taken from multiple sources, individuals, and processes (Creswell, 2014).

The teachers involved actively participated in the research process. They engaged in member checking to ensure that the narrative accounts were accurate (Creswell, 2014). After completion of the first-draft stories, each participant was given a printed copy of the group story, and the participants had the opportunity to revise anything that was not accurately portrayed. I then rewrote the stories based on the participants' edits and feedback. I completed a second member check with the second-draft stories, and the participants verified in writing that the stories were accurate and complete (Creswell, 2014).

Comparing the vignettes. Once member checking was complete and the restorying process was finalized, I condensed the stories into vignettes that highlight the process that each group experienced as they operationalized the antecedents of collective teacher efficacy. I then wrote a final analysis section that specifically outlined the commonalities and differences and that "highlights specific themes that emerged during the story" (Creswell, 2014, p. 518).

Limitations

This study has some limitations. First, the number of participants is small. Because I am not looking at what teachers in an entire school did to become collectively efficacious, my findings are not transferable to a large population of teachers. Ideally, collective teacher efficacy is a belief held by an entire school faculty. Simply looking at the work of three teachers at two schools shows only what a small group of teachers has been able to accomplish together. It is also possible that the teachers may have misrepresented themselves on either of the surveys, as both the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001) and the modified Collective Efficacy Scale (Goddard et al., 2000) are self-report items, and teachers may misrepresent themselves in order to seem more or less efficacious. Even with these limitations in place, this research process allowed me to develop and explore the participants' collective story.

CHAPTER 4

Findings

Tschannen-Moran and Woolfolk Hoy (2007) wondered if there may be other antecedents to collective teacher efficacy in addition to the four theorized by Bandura (1977, 1993), which are vicarious learning, verbal persuasion, psychological arousal, and mastery experiences. In this chapter, the results from the study will be shared in which I demonstrate that an additional antecedent to collective teacher efficacy—effective teacher teams—did indeed emerge for both groups. Additionally, although the teacher teams did not initially deliberately decide to follow Bandura’s antecedents, what the teams did to become collectively efficacious aligned with Bandura’s theory.

I begin by outlining the results of the surveys, offering evidence of the current state of efficacy of the individual teachers and of the two teams. After establishing the efficacy of each team, the new finding of an additional antecedent to collective teacher efficacy, effective teams, is presented. This is followed by the operationalization of Bandura’s four antecedents to collective teacher efficacy. Each finding begins with a definition of the concept before a presentation of vignettes that highlight the process for each team in developing the element of collective teacher efficacy in question. The vignettes are based on critical incidents that allow a more in-depth look into the process the teams followed as they became effective teacher teams and as they operationalized each of Bandura’s theoretical antecedents. Each vignette demonstrates how the teams aligned their work—whether deliberately or unintentionally—with the antecedents of collective efficacy. Following each vignette, I present an analysis that offers clarification of the teams’ experience. A discussion of the findings will follow in chapter five.

Establishing Efficacy

Individual teacher efficacy leads to collective teacher efficacy (Bandura, 1993; Goddard et al., 2004; Hoy et al., 2002; Tschannen-Moran & Barr, 2004) so, before I could tell the stories of how these two teams of teachers became collectively efficacious, I needed to determine if the teachers were indeed individually and collectively efficacious. Two separate surveys were used to show the individual efficacy of the participants and the collective efficacy of the two teams of teachers—the Teachers’ Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001) and the modified Collective Efficacy Scale (Goddard et al., 2000; Prelli, 2016) respectively. The outcomes are found in Table 1 and were used for validation purposes only.

The mean score that is used to determine an individual teacher’s level of efficacy on the Teachers’ Sense of Efficacy Scale is 7.1 out of 9 for the entire scale (Tschannen- Moran & Hoy, 2001). The results of this scale show that most of the teachers are individually efficacious. It also shows that the level of individual teacher efficacy appears to increase with years of experience for these teachers. This is not surprising since Klassen and Chiu (2010) have demonstrated that teacher self-efficacy increases from year zero to year 23 of teaching experience.

Although the two newest teachers on both teams are not yet individually efficacious, their scores indicate that they are moving toward becoming individually efficacious. In addition, based on end-of-level mandated state test scores, the existing observation data, and the group interviews, I believe that the two teachers who did not meet the mean score for efficacy are underestimating their individual ability, as they have among the highest scores on the state-mandated test for English Language Arts in Mountain School District. It is also likely that the

new teachers felt more collectively than individually efficacious, because the effects of collective efficacy are often more evident for novice teachers than they are for veteran teachers (Tschannen-Moran et al., 1998).

Table 1

Scores on the Surveys

	Legacy Junior High School			Heritage Junior High School		
Teacher Name	Kent	James	Brad	Grace	Paul	Matt
Number of Years Teaching	15	15	4	14	9	5
Mean Score on The Teachers Sense of Efficacy Scale	8.16	7.66	6.66	7.66	7.41	6.91
Standardized Team Score on the Modified Collective Efficacy Scale	622.01			684.59		

The modified Collective Efficacy Scale is used to measure teacher perceptions of the efficacy of the team, not just the individual teacher (Goddard et al., 2000; Prelli, 2016). A score of 500 on the modified Collective Efficacy Scale is average, while a score of 600 shows that a team is more collectively efficacious than 84% of the teams studied in the normative sample (Goddard et al., 2000; Prelli, 2016). For the purposes of this study, a score of 600 or higher shows that a team is collectively efficacious. The modified Collective Efficacy Scale scores indicate that both teams are collectively efficacious, as their scores are above the standardized team score of 600 needed to show collective teacher efficacy.

Effective Teacher Teams

Effective teams of teachers are able to extend one another's content knowledge and strengthen skills and dispositions (Feiman-Nemser, 2001). Teams can be especially effective when the team members are able to work together to improve their collaborative practice and when they have developed a system for ensuring individual and mutual accountability (Troen & Boles, 2010). The teams in this study defined effective teacher teams as groups that are collaborative, that form shared beliefs, and that build positive interpersonal relationships. Becoming an effective team proved to be an important factor in each of the groups' abilities to both operationalize the antecedents of collective teacher efficacy and become collectively efficacious. They spoke of relationships as foundational components to their success as a team, recognizing that they "cannot work in isolation" (Paul) and alone, "can't make any progress" (Kent).

Teams that operationalize Bandura's four theoretical antecedents of collective teacher efficacy are likely to become collectively efficacious (Goddard et al., 2004), and yet this study finds that teams must also be effective *before* they can begin a trajectory toward collective teacher efficacy. Kent and James, the teachers at Legacy Junior High School, believe that they became effective as a team once Brad, a teacher whose beliefs fit with theirs, joined the team; then the group was able to operationalize each of Bandura's (1977, 1993) theoretical antecedents of collective efficacy and to collaborate at high levels. Grace, Paul, and Matt, the teachers at Heritage Junior High School, also believed that establishing an effective teacher team, which for them occurred with reorganization and training, was necessary before they could begin their trajectory toward collective teacher efficacy.

I share the following vignettes to highlight that effective teacher teams are a foundational component of a group's ability to become collectively efficacious. The vignettes are presented to both solidify the finding that effective teacher teams must be in place, and to provide a glimpse into both groups' experience with establishing an effective teacher team.

Legacy Junior High School. *Kent and James began collaborating together 12 years ago and were able to become an effective collaborative partnership, but they both knew that they could be more successful if their entire grade-level team shared two core beliefs that were instilled in them by their principal: that they should know what their students needed to learn and that they should use data to determine whether their students were indeed learning. Kent and James were also determined to use student data to prove to themselves and to each other that their students were receiving an equitable education. As Kent says, "I believed my kids should have at least as good an education as the kids whose teacher lives across the hall." This shared belief drove Kent and James to compare student data daily and to push each other to become better teachers. For nine years, Kent and James worked well as a partnership, but the grade-level team that they were part of was not functioning at high levels. The third member of their team was never willing to engage in the kind of collaborative work that Kent and James were doing. Kent even talks about deliberately creating a climate that may have felt hostile to the teachers who did not want to work with James and him. This hostile environment prevented collegial working relationships from forming. Kent admits that, "It's not easy for people if you don't value data. If you don't feel like during contract hours we're going to do everything for kids." A demanding and even intimidating environment caused two teachers who were part of Kent's and James's grade-level team to look for teaching positions elsewhere, thus freeing up a position for another teacher to join Kent and James. Four years ago, Brad joined the team and*

the three teachers quickly began to work effectively together. After observing Kent's and James's collaborative work with student data, Brad immediately began to understand that he needed to use data himself to ensure that his students were receiving the same level of education as Kent's and James's students. Gaining a new teacher who shared their beliefs about collaboration and about the need to use student data to inform their practice allowed Kent and James to begin to make real growth as a collaborative team. As James says, "Until you come to a common vision of what we're trying to do or accomplish, you can't make any progress." Kent and James were both able to experience higher levels of professional achievement once Brad joined the team, because the three of them believed in the need for collaboration. Brad was willing to spend the time necessary to keep pace with Kent and James, arriving every day at 5:00 a.m. so that he could gather the student data needed to engage in the team's collaborative data-based discussions and collaborative work that day. As a result of collaborating together and sharing a common belief about the need for student data, this team developed strong working relationships with each other. They used data to both push each other to become better and to guarantee that the students in each of their classrooms were receiving an equitable education. Kent and James say it is "luck" that Brad joined their team. James says, "This is the most important for me. I cannot be as good a teacher without other people. I have my own abilities, but they are finite. By myself I will stagnate."

Kent, James, and Brad became a highly collaborative team because Brad was willing to be mentored, and Kent and James were able to provide him with the support he needed as a new teacher. Brad was immediately enthusiastic about Kent's and James's dedication to student data, and unlike the teachers before him, willingly participated in Kent's and James's data-driven collaborative efforts. A shared belief about the importance of data was the most unifying factor

for this team. This shared belief helped the group build collegial relationships with each other. Kent and James were already friends, but they were unwelcoming and did not form friendships with previous teachers because these teachers' beliefs about data did not align with Kent's and James's beliefs. Brad's belief in the power of data was solidified soon after he joined Kent's and James's team, and he respected their dedication to it. It was this immediate shared belief that allowed Kent and James to trust Brad and to completely let go of the hostility that had compromised their relationships with other teachers. Because they were able to successfully collaborate around a shared belief, Kent and James came to see Brad as not only a respected colleague but also a friend. The culture that Kent, James, and Brad were able to establish together was based on their belief that they were better when they were collaborating, and their shared belief that data was important. It was also based on the need to develop collegial relationships and even friendship with each other. Kent and James were no longer actively developing a hostile culture intended to push team members out. Instead, this team was working together toward common goals, and the hours they spent learning from each other and working productively together led them to become friends.

***Heritage Junior High School.** Grace and Paul are two veteran teachers who have been colleagues for nine years and who will readily share that until three years ago, their team was not effective. There were two teachers in the group who did not believe in the need for collaboration and who created contention among the team members. One of these teachers was the department chair, and the leadership necessary for this team to become effective was not in place. When Matt joined the group five years ago, he immediately noticed that the teachers on the team were fighting instead of helping each other. Matt describes the contention that he observed in his first meeting with his new team by saying, "I walked in, and it was a literal fight.*

People were yelling at each other and I thought this can't be normal, but it was for a few years." The contention that plagued this team did not begin to lift until the two teachers who did not want to collaborate with the other teachers in the group retired. One of these teachers was the department chair, and her departure created a vacancy that Grace was asked to fill. Even though the contention levels decreased when these teachers retired, the team still did not know what to do to work effectively together. They knew they should collaborate, but they didn't know how. Their frustration about wanting to change but not knowing how to change was exacerbated by their principal who continued to ask them to become a high-functioning PLC (professional learning community) without giving them any guidance on how to make that happen. This team knew that they should not be working in isolation, but they had as Grace says, "no clue" what effective teacher teams actually did. Even after the two non-collaborative teachers retired, Grace, Paul, and Matt were frustrated with their collaborative efforts until a new assistant principal was assigned to their school and joined in their weekly meeting. During this meeting, she bluntly told them that what they were doing wasn't working. She also sent them to a conference that helped them gain shared beliefs about what collaboration should be and what they needed to do to become an effective teacher team. This conference proved to be a catalyst for the team as during the conference they finally understood that a lot of hard work needed to happen. They realized that they could no longer work in isolation. While at the conference, the team was given a structure for effective teacher teaming. As Paul says, we were "able to wrap our heads around the vision and see what it should look like and what it should be like. That was it for us." After this team learned what they needed to do to become an effective team, everything changed. The two contentious teachers had retired, Grace was the new department chair, they had a mentor in their new assistant principal, and everyone understood what a

structure for successful collaboration looked like. They shared a belief regarding what their team should become, and they began to build collegial and friendly relationships with each other. The relationships they have built as a team are the foundation for everything that they have been able to accomplish since becoming an effective teacher team. Instead of wasting time fighting with each other, Paul now says that he and Grace are like “brother and sister.”

Learning how to collaborate with each other was crucial for this team. Even though Grace, Paul, and Matt wanted to work together, they did not know how. During the professional conference, the team came to a shared understanding of what it means to collaborate. The conference also helped them develop a shared set of core beliefs: a consensus on essential standards, the goal to be able to show that students were proficient on the standards, and a desire to work together instead of in isolation. As they worked to align their practice with these new shared beliefs, they came to a point where they were no longer frustrated due to not working toward a common goal. As they worked toward implementing their shared goals, they began to respect and trust each other as colleagues and also as friends. Collaborating effectively with each other and working together toward their shared goals helped this team develop a culture of trust. They were no longer fighting with and contradicting each other, and as their culture of trust deepened, this team’s relationships with each other became the basis for all their subsequent work. The friendships that they now have with each other are a key motivator for this team’s continued success. Because they like each other, they do not want to let each other down.

As indicated in the vignettes, both teams wanted to work better together, but they struggled to collaborate, and they did not initially share beliefs. Such discrepancies and struggles prevented them from forming collegial relationships with each other. Simply pushing teachers out or even waiting for them to retire, as the teacher teams in this study did, will not result in an

effective team. Once these teams were reorganized and they changed the way they worked together, they began to trust each other, mentor each other, learn together, change, and develop professional relationships, and even friendships, with each other.

Both teams were able to become effective once non-collaborative and even contentious members were no longer part of the group. When both teams reached a point where every member on the team shared the same beliefs, their collaborative work had a purpose. Although the shared beliefs were different for each group, with the team at Legacy Junior High School focusing on analyzing student data, and the team at Heritage Junior High School focusing on becoming an effective team, their newfound ability to work together toward a shared set of beliefs and goals resulted in the development of strong relationships among the members of both teams.

Operationalizing the Antecedents of Collective Teacher Efficacy

The following vignettes explore the manner in which the groups operationalized Bandura's (1977, 1993) antecedents of collective teacher efficacy. Both teams experienced each of the four antecedents, but they were unique in their approach.

Vicarious learning. Vicarious learning (Bandura, 1977) occurs when teachers are able to watch or learn from competent and credible models, who are like the teachers themselves, exhibiting the behaviors that the teachers would like to see in themselves. When teachers watch and learn from competent and credible models, they begin to believe that they too can accomplish what the model teachers or teacher teams have accomplished (Hoy et al., 2002).

Prior to becoming an effective teacher team, Kent and James had conducted research and observed other teachers. Once they began to work collaboratively with Brad, this team sought out a specific teacher to learn from. In contrast, the teachers at Heritage Junior High School did

not learn from models until they attended a professional conference. The vicarious learning that occurred at the conference was their catalyst for change. The vignettes that follow highlight both teams' ability to learn from others.

Legacy Junior High School. *Once Brad joined Kent and James, the three teachers began to share their research-based learning. Kent credits this team's focus on learning from research with helping them to "identify best practice from what sounds like good ideas" when they are learning from other teachers. Their study of the state-mandated testing data also helped as it spurred the three teachers to seek out the teachers in the district who were performing better than they were on this test. They identified one teacher who was, in James's words "killing it" on the test and arranged to meet with her. The three of them spent two hours with her as she modeled exactly how she was teaching writing in her own classroom. She showed them her graphic organizers and shared with them all of her lesson plans for what she calls a writing "boot camp" that she conducted with her students every year. She walked the team from Legacy Junior High School through her entire writing program, and told them exactly what she was doing to encourage student success on the state-mandated test. Having observed this teacher model her instruction, Kent, James, and Brad began to completely rethink their current instructional practices. As a result of this collaboration, they went back to their own school and created a new and highly successful writing model for their students. James gives credit to this teacher stating, "She's the basis for our writing model. We went to her. We had something that was working fairly well already, but she was beating us. We worked with her for two hours, and she explained what she did and how it worked. That was an excellent collaboration."*

This team judged the other teacher as credible due to her high test scores. Then not only did they ask her to explain the instructional tools she used, she modeled the teaching of it for

them. Additionally, this teacher is similar to them because she is in the same district and she teaches the same state standards in her own classroom. She also teaches at the junior high level, and her students are from similar backgrounds. Because of the new writing model that they developed with this other teacher, Kent, James, and Brad say that they saw significant increases in their growth and proficiency scores on the state-mandated test. James also states that their belief in their own ability to succeed increased as they watched this teacher model her successful teaching strategies (Hoy et al., 2002). This competitive, all-male team not only believed in their ability to improve their own scores on the state-mandated test after they vicariously learned from the one teacher who was outperforming them, they also wanted to beat her. They continued to believe that one day this would happen.

***Heritage Junior High School.** Three years ago, the team of teachers at Heritage Junior High School attended a PLC conference together. During this conference, they learned what collaborative and effective teacher teams do, and they learned what they needed to do to become an effective team themselves. They credit the learning they did at this conference with being an important turning point for their team. Grace even says that this conference was “the catalyst” for the changes they were able to make in the way their team worked together. Prior to attending this conference, Grace, Paul, and Matt had been asked by their principal to work together to decide what their students needed to learn and to be able to use data to show that their students had actually learned. This is the basic principle underlying the work of a PLC. Until they attended this conference, the teachers on this team did not know how to do what was being asked of them. They were frustrated because they wanted to work more effectively together, but they didn’t know how. While at the conference, Grace, Paul, and Matt learned about groups of teachers who were considered to be models of successful teaming. As the*

conference progressed, each of the Heritage Junior High School teachers began to see themselves as able to do what the model teams were doing. As Paul says, “We saw what it should be like.” During the conference, Grace, Paul, and Matt felt years of frustration falling away. They had wanted to work more collaboratively together, and now that the conference had provided a model for them they finally knew what to do. Following the conference, the team also began to study the book provided at the conference, Learning by Doing: A Handbook for Professional Learning Communities at Work (DuFour, DuFour, Eaker, Many, & Mattos, 2016). The book includes numerous scenarios that describe real teacher teams who are working effectively together. The book clearly outlines how teams should begin their collaborative work by determining their mission, vision, values, and goals. Although the principal at Heritage Junior High had asked Grace, Paul, and Matt to do just this, they did not know what mission, vision, value, and goal statements were or should be until they attended the conference and studied the accompanying book. Grace credits the learning that occurred at the conference and the learning that resulted from studying the PLC book for driving this team’s ability to begin their work together. She states, “We determined our mission, vision, values, and goals based on the team model provided in the book. We still revisit the book regularly.”

When the team of teachers from Heritage Junior High School saw the models of teacher teams that were presented at the conference and when they read about the models in the PLC book, they could see themselves doing what these model teacher teams were doing. The teacher teams featured during the conference and in the book reminded the teachers at Heritage Junior High School of themselves, because several of these teams started out as dysfunctional and then were able to create their own mission, vision, value, and goal statements to guide them as they became collaborative. Grace, Paul, and Matt also saw these teams as credible because they were

secondary teachers who were able to make the changes that Grace, Paul, and Matt wanted to make themselves. Importantly, when Grace, Paul, and Matt saw the success of the model teachers, they began to believe that if these other teams could work well together, so could they. The model teams inspired Grace, Paul, and Matt to picture what they wanted their own team to become. Because of the changes that Grace, Paul, and Matt saw the model teams make, they began to believe that they too could make the changes necessary to develop a culture of trust and friendship for their own team.

Both of the teacher teams learned vicariously from competent and credible models who they saw as being like themselves (Bandura, 1965, 1977). The team at Legacy Junior High School learned face-to-face with a colleague from the same school district. The team from Heritage Junior High School learned from teachers who they never met in person, but who they saw as having similar experiences to their own. Both teams were able to envision themselves doing what the models they were learning from were doing, which is an important component of vicarious learning (Bandura, 1976, 1977; Hoy et al., 2002). They were also able to operationalize vicarious learning as they took what they had learned from their chosen models and brought their learning back to their own schools. Specifically, the Legacy Junior High School team's experience helped them refine their instructional practices. The Heritage Junior High School team's vicarious learning helped them know exactly how they should be working together as an effective teacher team. Both groups not only were able to see themselves doing what their models had achieved, they also committed to make the changes necessary in their own beliefs and practices so that they could make their new learning a reality.

Verbal persuasion. Verbal persuasion occurs when teachers, administrators, and other colleagues give positive encouragement to one another (Bandura, 1977). Verbal persuasion is

easy to implement, but a failure experience can quickly undo the positive effects of vocalized encouragement (Bandura, 1977). Verbal persuasion can also serve to influence a group of teachers toward higher levels of success, especially when challenges or difficulties arise (Tschannen-Moran & McMaster, 2009).

Brad was the recipient of verbal persuasion when he began his work with Kent and James. What Brad perceived as a failure became a turning point in his teaching career, because Kent and James supported him through this challenge. In contrast, the team at Heritage Junior High School was bluntly told that they were failing to meet the expectations of their administrators. What could be perceived as a failure experience by this team became a stimulus for change, because their administrators encouraged them to make needed changes as they continuously pointed out the team's success as they improved.

***Legacy Junior High School.** Brad recalls a pivotal moment that occurred during his first year of teaching, when he had just started working with Kent and James. Brad thought that he and his students were “doing fine.” However, Brad’s self-assessment of his teaching changed drastically when he joined Kent and James in their first collaborative meeting about student data. While looking at data, Brad was immediately aware that his students’ scores were drastically lower than Kent’s and James’s. He explains his poor results by saying, “I hadn’t worked less. I had probably worked more hours and I worked as hard as I could, but I was bad at it and it was important that year that I realized that I was bad at it.” Brad reacted to his low student data by not giving up and not believing that he would become a good teacher. He was able to learn from this experience because Kent and James encouraged him to make changes to his practice that resulted in improved student learning. Brad recalls that his conversations with Kent and James were not “like a gentle, ‘You can do this Brad.’ It was, ‘Crap, I have to do*

better.’’ For Brad, two things happened at once. The data told him that he needed to improve. The second had to do with, as Brad says, “the talk that Kent and James reacted with and how we reacted as a team.” Instead of disparaging Brad, the team had numerous serious, yet positive, conversations about student data during which Kent and James offered nothing but reassurance to Brad. Kent and James did not tell Brad that he was a bad teacher and that he should give up, and instead of making Brad feel badly about his skill as a teacher, Brad says Kent and James would say things like, “What do we do next?” This teams’ encouraging conversations based on student data propelled Brad to higher levels of success, and Brad become an exceptional teacher and a strong and respected member of the team.

Verbal persuasion should lead individuals, through meaningful discussion, to believe that they can successfully overcome what have previously been challenging situations (Bandura, 1977). Even though Kent and James agreed that Brad’s scores were low, instead of criticizing him, they focused on what the team could do together. The tone of the conversations about data were always positive, even though Brad was facing a challenge in his teaching. Kent’s and James’s vocalized support of Brad influenced the way that Brad engaged in self-talk. Instead of internalizing the idea that he could never improve, he told himself that he could become a great teacher with Kent’s and James’s help. This experience was the beginning of Kent’s and James’s mentoring work with Brad. It set the tone for the way they would continue to teach him and verbally persuade him, even after Brad became an extremely effective teacher himself.

Heritage Junior High School. *After experiencing the first dysfunctional weekly meeting with Grace, Paul, and Matt, the new assistant principal was brave enough to tell them that what they were doing was not working. As Grace says, “Our administrator called us on it. She was the first person who said, ‘You guys aren’t doing what you need to do. This is inoperable.’”*

Grace credits this administrator with the progress they have been able to make over the last three years, saying that, “Without her we’d be years behind. That was when we finally realized we don’t have to sit here and bicker about silly things.” Not only did the assistant principal tell them that they needed to change, she also suggested that the team attend a PLC conference together. She continued to offer them encouraging words after they returned from the conference, telling them that she had confidence in their ability to make the changes they needed to make. The principal also would encourage the team through such comments as “[you are] right on the precipice of some awesome stuff,” and “you are primed for doing great things.” The positive encouragement that Grace, Paul, and Matt received from their administrators helped them continue to move forward in the difficult collaborative work that they were engaged in as a team. Their administrators also frequently pointed out that their team was experiencing success, occasionally stopping by with test scores and other data to show the team that their efforts to be an effective teacher team were resulting in student growth. This helped the team see their success. As they grew in confidence, Grace, Paul, and Matt even began to encourage and persuade each other. They not only offered each other positive words of inspiration, but they also decided that they were now accountable to each other. As Grace says, “We are a team, and you are going to be accountable to me, and I’m going to be accountable to you.” Grace started sending emails every week reminding them of what they have said they would accomplish that week. Her “friendly reminders” encourage everyone to remain positive and to remember the commitments they have made to each other. This process of holding each other accountable has made this team less dependent on words of encouragement from their administrators. Now they are able to verbally encourage each other to stay motivated.

From this example, we see that when a critique is followed by encouragement, and then paired with the acknowledgement of success, this becomes a powerful form of verbal persuasion. The assistant principal verbally encouraged this team to change when she told them that what they were doing was not working, and the relationships they had with each other needed to be improved. This conversation became a positive turning point for the teachers, because the assistant principal did not focus on this team's failure. Instead, she and the principal offered the team members encouraging words that helped them reach higher levels of success despite the challenging situation. The administrators continued to offer verbalized encouragement as the team went through the change process by frequently pointing out the success the team experienced. The administrators shared data that showed student achievement to help this team realize that the changes they were making were having positive results. When this team began to see their success, they wanted to move toward higher levels of success.

Both teams initially received comments that could be perceived as negative, but these comments were structured so that they were seen as critiques instead of criticism. Kent's and James's comments regarding Brad's teaching ability and the assistant principal's blunt comment that the Heritage Junior High School team was failing to work effectively together were followed with strategies that addressed the undesirable situation. Kent and James asked Brad what they could do together as a team to improve Brad's instructional practice. Grace, Paul, and Matt were encouraged by their administrators to learn at a conference. Importantly, both teams did not simply offer inspiring words to each other. They also acknowledged their success and scaffolded their success so that they could overcome difficult challenges. Recognizing success is a key component of verbal persuasion, because the effects of verbal persuasion can be so easily undone by failure (Bandura, 1977). Encouraging words, coupled with the scaffolding and resources

needed for success, helped strengthen the beliefs of these teachers in their own ability to achieve a desired goal (Tschannen-Moran & McMaster, 2009). Simply offering what can be interpreted as false praise will not lead individuals to higher levels of success when they are faced with a challenge. These teams coupled encouragement with training, guidance, mentoring, and support in order to successfully meet the expectations that were set for them.

Psychological arousal. Psychological arousal occurs when a teacher's emotional state is one of reachable challenge rather than frustration (Bandura, 1977, 1993). Moderate levels of arousal, when perceived as a challenge, can improve performance by focusing attention and energy on the task, whereas high levels of arousal, when perceived as a threat, may diminish an individual's skills and capabilities (Tschannen-Moran & McMaster, 2009). Teachers who are supported in challenge may even have feelings of accomplishment and exhilaration (Tschannen-Moran & McMaster, 2009). When teachers feel challenged, their ability to accomplish their goals may improve (Tschannen-Moran & McMaster, 2009). Both of the teams in this study experienced psychological arousal by challenging themselves to take risks in their teaching. Both teams developed a culture of safety and trust that allowed them to feel safe to fail.

***Legacy Junior High School.** Kent and James were already engaged in taking risks in their teaching and experimenting with innovative teaching practices when Brad joined the team. As Kent explains, "Any growth we have, we have because we took risks, and you've got to feel safe and energized to take risks." Because Kent and James felt challenged by taking risks in their own teaching, they encouraged Brad to join in this endeavor. They would each try something innovative in their classrooms, gather student data about that teaching practice, and then compare the data to determine whose teaching methods were the most successful. In addition to comparing their student data, this team went one step further by involving their*

students in what Kent calls “collaborative competition.” James describes their collaborative competition by saying they would pit their students in a competition with each other by saying things like, “You’re going down! We’re taking Kent’s class down this year!” Although Brad was initially surprised by this element of competition, he soon joined in and began to understand that this was a healthy competition that helped the students get better at what they were learning and helped the teachers reach for higher goals. Brad felt safe to take risks himself and to engage his students in competition with Kent’s and James’s students. The collaborative competition and the risk taking in teaching that this team engaged in was healthy for Kent, James, and Brad, because they had created a culture that allowed them to feel safe to take risks and to then compare their data to show if their risk taking had been successful. When they saw that one teacher’s students had outperformed the others’ students, the “losing” teachers knew that they too could eventually achieve success because their colleague would share what he had done that had been more successful. This team talks about switching winning and losing roles regularly, and capitalizing on this fluidity to learn from each other. Collaborative competition did not feel threatening or frustrating for these teachers. Instead, it helped these teachers reach the student achievement goals they had set for themselves.

Although some teachers may have felt frustrated by being asked to take risks and to engage in collaborative competition, the three teachers on this team felt challenged and energized by competing with each other. This team developed a culture of safety by addressing their emotional states and checking in with each other regularly in order to ensure that their levels of psychological arousal remained moderate. Their awareness of their emotional states helped them ensure that risk taking and competition was never perceived as a threat. Because competition provided a moderate level of psychological arousal for these teachers, their skills and capabilities

were never diminished by it. Instead of feeling that they were being shut down when the risks they were taking in their teaching did not result in high student performance levels, the teachers saw their failure as a learning experience. Kent's, James's, and Brad's ability to challenge themselves and each other resulted in feelings of accomplishment as this team relied on competition and risk taking to help them meet their goals regarding student achievement (Tschannen-Moran & McMaster, 2009). Competition provided a joint learning venture for this team, and risk taking and challenge resulted in emotional rewards which felt exciting and even exhilarating for this team.

***Heritage Junior High School.** Before they became an effective teacher team, they experienced years of frustration. Everything they were asked to do felt overwhelming. They didn't believe that they could achieve any of the goals they set for themselves, and they did not feel supported in the challenging situations they found themselves immersed in. Once they began to collaborate effectively together, and they experienced support from their administrators and from each other, they felt safe to start taking risks in their teaching. Two years ago, they began to encourage each other to try unique teaching techniques in their classrooms. They would then share what worked with each other to make the entire team stronger. Paul describes the team's current ability to challenge themselves by describing their risk-taking process. He says they will "try something and fail and learn from it and do it again." In past years, the teachers on this team did not feel safe to try innovative instructional practices and to report their failure to each other. Because they didn't trust each other, and they didn't have good relationships with each other, they could not challenge themselves or each other. As Paul says, "We spoke before about creating a good relationship. Now we are challenged together and we are excited to get better." Paul even credits the risk-taking process they are now engaged in with helping this team enjoy*

their jobs more than they previously did. Now, they are happy to come to work, to try new things in their classrooms, and to become better in their teaching practice. Paul says that the risk taking that they have participated in has helped them reach their goals because they “actually have an idea of where they want to be.” He even says that this team’s process of challenging themselves to take risks in their teaching has become “invigorating.”

The teachers at Heritage Junior High School saw risk taking in their teaching as a challenging rather than a frustrating endeavor. They believed that risk taking was a challenge they could meet, and instead of feeling frustrated by taking risks, failing, and having to admit their failures to each other, they started to see failure as an opportunity to learn. When the teachers tried a new strategy that did not work, they did not perceive this as a threatening experience. Instead, they supported each other in their challenge and worked together to find a solution. Then they would try again. This process helped them refine their teaching practices based on one another’s successes and failures. Because of the support they received from each other, each of the teachers felt accomplishment as they met and mastered their teaching challenges (Tschannen-Moran & McMaster, 2009).

The vignettes show that for both teams, risk taking became a challenging and a positive experience rather than a frustrating endeavor. Both teams engaged in innovation and risk taking in their teaching as a way to challenge themselves to improve. All of the teachers felt challenged rather than frustrated by this practice. Although the competitive piece was not part of the Heritage Junior High School team’s culture, both teams of teachers saw failure as an opportunity for both individual and team learning, and they were not fearful of exposing their failures to each other. Both teams characterized challenge as being invigorating rather than overwhelming, and

much of that had to do with the support of team members, through collaboration, conversation, encouragement, and most importantly the culture of trust and friendship the teachers developed.

Mastery experiences. Mastery experiences occur when teachers adopt instructional strategies, and see that these strategies result in student achievement, as well as when the teachers meet and master the goals they set for themselves (Bandura, 1977, 1993). Previous levels of achievement predict subsequent achievement (Caprara et al., 2006), and mastery experiences lead to additional mastery experiences (Bandura, 1977, 1993).

Legacy Junior High School. Kent, James, and Brad were studying student data, collaborating for several hours every day, planning common formative and summative assessments together, and designing instructional strategies that they hoped would result in student achievement in order to meet their most important goal: increased student pass rates on the end-of-level state-mandated English Language Arts test. In their efforts to increase their students' test scores, this team determined what they wanted students to learn and be able to do, and they used student data daily to show that the students were learning what they need to learn. They assessed their students regularly using multiple formative tasks that mirrored the state-mandated test. Over the course of the school year, they measured mastery on every essential standard on the state-mandated test so that their students were prepared for testing success, which is an instructional strategy that has proven to be successful for this team of teachers. Over the last three years, they have seen that students' achievement levels have risen incrementally each year until they are now among the highest in their state. Seeing their students' achievement levels rise higher every year led to a cycle of mastery, and this team began to expect additional mastery experiences (Bandura, 1977, 1993; Caprara et al., 2006). Kent says, "Success builds on success. We look at winning streaks and we have data and

information to push us along.” They use their success to convince their students that they will meet the goals that their teachers set for them. James says they promise students that, “If you run this race with me, we’ll beat anything you’ve done before.” They also share their high scores on the state-mandated test with their students to build a cycle of mastery. Kent says, “There’s the element of bragging rights. I leveraged that like crazy. Our students can be successful because all these people were successful before.”

Kent, James, and Brad set a goal for themselves to achieve extraordinary pass rates on the state-mandated test. Their focus on student data allowed them to review this goal daily. The data also proved to these teachers that they were successful in reaching their goal. They continued to use the student data in their work, expecting to continue to improve and beat their previous scores. This cycle of using data to inform their goals and validate their success confirmed to them that they were having a mastery experience. Their achievement helped them reach a point where they expected nothing less than remarkable pass rates. They achieved a cycle of mastery where one mastery experience led to additional mastery experiences (Caprara et al., 2006). Teachers and students alike began to expect every year that their test scores would only increase.

Heritage Junior High School. *Prior to working as a team, the teachers from Heritage Junior High School struggled to demonstrate that their instructional strategies had resulted in student achievement. Working in isolation, none had adopted their essential standards, and had no way to show that their students were actually achieving. Once they worked together to adopt essential standards and began to use student data to show that their students were indeed learning, the team was no longer simply teaching and moving on when the curriculum map dictated that it was time to move on. They now teach the standards intentionally, and Grace*

says, “Now it feels so good when the students have learned a standard that you intended to teach. It’s like ‘and I have data on that!’ It’s like you want to do that drug again. Where is my next drug?” When they see that their instructional practices have resulted in student achievement, Grace, Paul, and Matt share these results with their students. They tell their students how great they are, and the students realize that they are achieving. Grace says, “It feels really good to master something.” Knowing that their instruction is successful and that it has resulted in increased student achievement has led this team to believe that they will continue to be successful. Seeing student mastery on the essential standards has created momentum within this team. As Grace says, “We’re doing it well and we’re doing it right.” Reaching a point where they are experiencing mastery has been a difficult journey for this team. When they first started working together, they did not realize how hard the work would be. However, they continued to put forth the effort required, and they are now seeing a cycle of success where previous levels of student achievement on standards-based formative tasks predict subsequent achievement (Caprara et al., 2006). In addition to setting goals based on student achievement, the teachers on this team set goals to build their own efficacy as a team. They knew that if they focused on increasing their own capacity, their students would benefit. This team deliberately worked to enrich their own learning by attending conferences, regularly conducting book studies as a team, and making time to observe and talk with other teachers from their district. They frequently checked in with each other to reflect on how they were improving as individual teachers and as a team. When this team looks back on the way things once were, they are aware that they have met and mastered their goal to become an effective team. Paul remembers the way things were by saying, “I think working in isolation I could dupe myself forever that I’m amazing, that I’m doing good things. Looking back, it still physically bothers me.” This team

will never go back. Even though meeting and mastering their goals proved to be more demanding than they anticipated, they have been able to achieve both the student and the teacher learning goals they set for themselves.

This team developed proven instructional strategies that helped them meet their goal to teach the standards to their students in meaningful ways. They were intentional in planning instruction, in monitoring student progress, and in their collaborative efforts. They verified that they were achieving their goal by creating instruction based on their essential standards and then comparing student proficiency rates to ensure their instruction was successful. Most importantly, experiencing mastery by using reliable data to show that their students were achieving at high levels is what finally helped this team believe that they were doing good work. After years of not really knowing if their students were achieving at high levels, the data they were now gathering gave this team the proof they needed to demonstrate that their students were succeeding. When the teachers saw a cycle of success develop, where one success led to another success, their belief in themselves was definitively solidified, and from that point forward they believed that their students would only continue to be successful.

This belief in themselves was spurred by a continual and intentional use of student data that guided them in their collaboration around their essential standards. This group also set goals to improve teacher learning in order to build their capacity as a team. Their team is stronger because they shared instructional strategies with each other, checked in with each other often to assess their progress, and they regularly reflected on and celebrated their accomplishments. This team's history of meeting and mastering goals has resulted in their collective belief that now they can continue to meet and master the difficult goals they set for themselves.

The vignettes solidify the finding that mastery leads to mastery, and when this cycle occurs teachers reach a point where they truly believe that if they continue to work together in the ways they have devised, they cannot fail. Although the two teacher teams in this study set different goals, with the teachers from Legacy Junior High School focusing on student pass rates on the state-mandated test and the teachers from Heritage Junior High School focusing on student achievement on formative tasks and their own team's effectiveness, the teams both experienced a cycle of mastery. High test scores year after year led Kent, James, and Brad to believe that they could achieve even higher test scores in subsequent years. Likewise, using student data to show that their instructional strategies were resulting in student achievement led Grace, Paul, and Matt to not only believe that their students would continue to be successful, but they finally began to believe in themselves. Grace, Paul, and Matt also understood that their own success as an effective teacher team was their most important mastery experience. Experiencing mastery has been a significant formative experience for both of these teacher teams. It has changed the way they work together, thus changing everything for them.

The vignettes presented outline how the two teams in this study operationalized the antecedents of collective teacher efficacy. The vignettes show what the real and unique experiences of these teams looked like. They also provide examples of how groups of teachers could choose to operationalize the antecedents in ways that align with their own team culture, just as the teachers in this study did.

CHAPTER 5

Discussion

Research suggests that there are four antecedents of collective teacher efficacy, which are vicarious learning, verbal persuasion, psychological arousal, and mastery experiences (Bandura 1977, 1993), and that the operationalization of these will lead groups of teachers toward collective teacher efficacy (Bandura, 1993; Goddard et al., 2004). However, I believe the most important finding of this study is that for a group to become collectively efficacious, an effective teacher team must be in place *first*. In this chapter, I will discuss the differences in operationalizing the antecedents that Bandura's (1977, 1993) theory suggests, as demonstrated by both of the teams in this study. I will also elaborate on the conclusions the teachers came to in regards to forming effective teams—particularly the influence that relationships have on a team's ability to be effective—and what that means for teachers and schools. I also outline the implications of this study for administrators and teacher teams. The implications will be followed by suggestions for future research.

Operationalizing the Antecedents

Both of the teams in this study were deliberate in the work they did to become highly collaborative. However, neither team was aware of Bandura's (1977, 1993) theoretical antecedents of collective teacher efficacy, nor did they purposely go about attempting to operationalize the antecedents. Their ability to become collectively efficacious was organic in nature and the way they experienced the antecedents happened in unique and autonomous ways. The question this study sought to answer was “How did two groups of efficacious teachers operationalize the theoretical antecedents of collective teacher efficacy?” Knowing how to operationalize the theoretical antecedents has important implications for teacher teams who

would like to become collectively efficacious themselves. Although the ways in which the teams in this study operationalized the antecedents should not be used as a checklist, their experiences will provide guidance for other teacher teams.

The team at Legacy Junior High School learned vicariously by seeking out a teacher who could model new learning for them. They were able to implement what they learned from her, and improve their own instructional practice. They received verbal persuasion in the form of supportive and encouraging conversations about student data. They engaged in risk taking in their teaching and collaborative competition to help them feel challenged at appropriate levels in their work. They experienced psychological arousal as a result. Their most important goal was achieving high rates of student proficiency on the state-mandated test. They achieved this goal year after year, leading to a cycle of mastery.

The teachers at Heritage Junior High School learned vicariously from model teacher teams who were presented to them at a professional conference and through reading a book that outlined what effective teacher teams looked like. Their verbal persuasion came from critical conversations that they had with their administrators and each other, conversations which also acknowledged their success. This team engaged in risk taking to challenge them in their work. They ensured that risk taking remained challenging rather than frustrating in order to ensure they were experiencing appropriate levels of psychological arousal. They based their mastery experience on student success on formative assessments instead of focusing on the state-mandated test.

The two teams went about implementing practices that can be similarly categorized as the antecedents to collective teacher efficacy. And both teams identified those practices as antecedents that were foundational components of their ability to become collectively

efficacious. However, the operationalization of the antecedents looked different for each team, in large part because the cultures that these teams worked to create and the relationships they developed with each other are unique. For example, the competitive all-male team from Legacy Junior High School wanted to learn vicariously from the one teacher who was outperforming them on the state-mandated test. Their existing culture of competition fits perfectly with this choice. The team from Heritage Junior High School, who wanted desperately to learn how to become a highly collaborative team, learned from models presented at a conference who had done just that. They quickly came to the same realization during the conference that the relationships they needed to build with each other would become the most important component of their ability to work well together.

As a reminder, the two schools in this study are very different. One is the second-poorest school in the district while the other is the wealthiest. The students at these two schools have unique needs and the teachers on each team have quite different personalities. The distinct cultures that each of these teams developed as a result of their needs guided the teams to operationalize the antecedents in unique ways.

Characteristics of Effective Teacher Teams

It is often assumed that teachers like people, and it is often assumed that they are naturally collegial and will get along with and work well with everybody. Neither of these assumptions is completely accurate. Many teacher teams are unable to become collaborative due to contention between members over differences in opinions, or the unwillingness to concede enough to try something different. There often seems to be at least one member of the team who is resistant to building positive and supportive relationships with his or her colleagues. The creation of collegial relationships must, therefore, be an overt goal for a team of teachers if they

want to be highly collaborative. Teams must work to create a culture where everyone feels safe, develops trust, and forms supportive relationships. Teams must also be willing to do the hard work necessary for change to occur. If friendship results, that is ideal. Such a group of effective teachers, who are collaborative, share common beliefs, and work toward common goals can be the most influential factor on student achievement (Donohoo, 2016). The two teams in this study demonstrated three significant elements that contributed to the creation of an effective team: a unique culture, willingness to change, and personal relationships.

Team culture. Both of the groups in this study developed team cultures that were built on trust, support, and safety. They also had shared beliefs, goals, ideals, and deliberate strategies in place for working together. However, neither team started out this way. Kent and James always trusted and supported each other, but when other teachers on their team disagreed with their focus on student data, they were deliberately hostile toward these teachers, eventually pushing them out. When Brad joined the team, Kent and James found a like-minded teacher who agreed with their emphasis on data. They were able to guide Brad to become like them. Because Brad shared their beliefs, he was easy to mentor and the hostility that had influenced the team prior to Brad's arrival was gone. Kent and James had already built a positive culture for their own partnership. Once Brad joined their team, they were able to mentor him into this culture. Because of purposeful mentoring on the part of Kent and James, and because of Brad's willingness to fit himself into the culture Kent and James had already established, the whole team culture quite quickly became one of trust, support, safety, and even friendly competition that supported the growth of all three.

Likewise, the team from Legacy Junior High School struggled to build a positive team culture until their team was reorganized. Grace, Paul, and Matt had always wanted to support

and trust each other. They even liked each other, but until two contentious teachers retired, their culture was one of arguing and fighting. Like the team at Legacy Junior High School, this team was able to develop a culture of trust, support, and safety fairly quickly after their team was reorganized. When they were no longer spending enormous amounts of time trying to work with teachers who did not want to work with them, and when they learned at a professional conference about what an effective team culture should be, they were able to create mission, vision, value, and goal statements that guided their work together and shaped their culture. Matt played a significant role in the development of this team's positive culture. In contrast to Brad, who was mentored into Kent's and James's existing culture, Matt worked with Grace and Paul from the beginning to build and create the culture that they all envisioned for themselves.

Willingness to change. The ability to develop highly collaborative relationships requires hard work, and change is difficult even when teachers believe that change will be worth the effort (Kise, 2017). Adult learning may involve anxiety, pain, self-doubt, and ambiguity, and adults often view learning as threatening (Brookfield, 1985). Therefore, it is important that as teachers are building their relationships with each other and learning how to be supportive colleagues, they acknowledge that this will not be an easy process. Kent and James changed only in that they were able to mentor Brad differently than the other teachers who had previously been part of their team. Because Brad was willing to learn from them, Kent and James became patient and helpful. Even though Brad initially recognized the value of Kent's and James's beliefs, he still had to be willing to fit his own beliefs about data with those of Kent and James. Brad was willing to mold himself perfectly into Kent's and James's partnership, and Kent and James grew to respect Brad and were also willing to learn from him. Eventually, Brad's voice

became as strong as theirs. The team was able to work without contention. Their change process was worth the effort, and they became highly effective together.

Grace, Paul, and Matt used the structure for collaborative teams that they learned about at a conference and read about in a professional book to guide their change process. Although the change process that they went through was hard work, as it demanded continuous learning, each member of this team was willing to do what was necessary to change their attitudes and behaviors, thus changing the conduct of the team. Because they were no longer required to devote their emotional energy to contentious and unwilling teachers, they were able to focus their attention on each other and on their goal of becoming a strong team. As they worked through this change process together, they were transformed from a group that was constantly fighting and bickering about silly things to a team of teachers that depended on each other.

Relationship building. Prior research has shown that team collegiality is a predictor of effective collaboration and collective learning (Ning, Lee, & Lee, 2015), something that both teams failed to achieve for several years. The team at Legacy Junior High School deliberately created a hostile climate directed toward other team members with whom they had professional disagreements, and the team at Heritage Junior High School regularly fought with team members whose approach to teaching conflicted with their own. Such climates prevented working relationships from being productive.

Both teams were able to evolve from simply colleagues who worked together, to trusted friends. When teachers were no longer consumed by the negativity and the unwillingness of their uncooperative colleagues, their collaboration time became productive. They also spent time outside of contract hours learning from and with each other. When they were working toward the same goals and shared beliefs, contention was no longer a factor. After the hostility and

fighting stopped, and when all of the team members were willing to collaborate regularly together, and be vulnerable with each other, the teachers on these teams became friends. Although little research has been conducted on the effects of friendship on a team's ability to work well together, it is assumed that when teachers are friends they will also become more collaborative (Lima, 1998).

Implications

This study has implications for teams of teachers who want to become highly collaborative and even collectively efficacious. An interesting commonality between these teams is the fact that when they no longer had to use their time and energy to encourage unwilling teachers to embrace the team's beliefs or to work collaboratively, they were able to create a culture of trust where teachers feel safe to fail and then learn from each other. With the shared beliefs, they more easily could form relationships of trust and friendship. This indicates that, devoid of difficult relationships, teachers can devote themselves to working together to purposefully become the most important factor for student achievement. Administrators and teachers themselves can push this process forward.

Role of administrators. Administrators can support teachers as they make necessary changes, and they can help teachers build relationships with each other. The Heritage Junior High School team's experience with their assistant principal shows that administrators can influence teams through their willingness to have frank conversations regarding the work teams do together. The administrators at Heritage Junior High School sent the teachers to a conference *together*. During the conference, this team not only learned about what effective teacher teams do, they also began to bond with one another over their shared beliefs. When the team members learned how to be effective and started working toward shared goals together, they also became

friends. The administrators continued to encourage this team throughout its relationship-building process. Administrators should support team-building efforts and professional development. They should continuously monitor teams' levels of cooperation and collegiality. In cases where a team feels powerless in the face of an unwilling colleague, administrators can be the voice necessary to help a team get out of a cycle of dysfunction.

Administrators must also acknowledge that teachers have little power when it comes to their interactions with their colleagues. Even a department chair does not have the power to coerce an unwilling teacher to build relationships with the other members of the team. Therefore, administrators must also be aware of the existing personality and culture of a team when making hiring decisions. During the hiring process, it is essential that administrators consider a candidate who will be able to form positive relationships and even friendships with the existing teachers.

Novice teachers. Teaching has been described as the profession that eats its young (Kelley, 2004). Veteran teachers must understand their role in mentoring novice teachers. They should not only take the time to share teaching strategies with new teachers, but they should also build collegial relationships with them. New teachers need to feel safe to fail, and they need the support of teachers who can remember how difficult the first few years of teaching really are. The culture of safety and trust established by both teams of teachers in this study encouraged the development of mentoring and coaching. Matt and Brad, the two newest teachers on these teams, even reached the point where they outperformed the other team members on the state-mandated test. Like Matt and Brad, new teachers can reach higher levels of success if a team is able to create a safe and trusting environment that encourages positive relationships. Matt and Brad were also given a voice in their team setting, and they were able to influence how the teams

evolved together. In both mentoring relationships, the novice and veteran teachers were able to learn from each other.

Novice teachers involved in a mentoring situation should strive to fit themselves into the team culture and the team relationship structure. Novice teachers should share in the responsibility of ensuring that their team becomes effective. They can do this by continuously learning, asking questions, and being willing to change if needed in order to promote a positive team culture. An important principle to understand is that when veteran teachers work to form supportive relationships with novice team members, and when novice teachers are willing to work to build the culture and the relationships of the existing team, every member of the team will become more effective. All parties are responsible for the health and growth of the team.

Future Research

The teams in this study had not deliberately attempted to operationalize Bandura's (1977, 1993) antecedents of collective teacher efficacy, but the success they found as a team proved to be dependent upon them. Future qualitative studies may want to focus on teams that are not yet collectively efficacious to explore what teams that purposefully attempt to implement the antecedents of collective teacher efficacy could accomplish for themselves and for their students. Additional future research that is qualitative in nature should also consider the relationships that the participants develop with each other in the journey to collective teacher efficacy, to validate the work done in this study on effective relationships.

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APPENDIX A

Participant Consent Form

Consent to be a Research Subject

Introduction

This research study is being conducted by Kathryn Larsen, a master's student at Brigham Young University, under the direction of Dr. Melissa Newberry, a professor of Teacher Education at BYU, to determine how two groups of high-performing teachers became collectively efficacious. You were invited to participate because you appear to be individually efficacious and you are part of a team of teachers that the researcher believes to be collectively efficacious.

Procedures

If you agree to participate in this research study, the following will occur:

- The notes that the researcher took during class observations and discussions with you during the 2016-2017 school year will be reviewed by the researcher in order to write discussion questions
- You will answer the questions on The Teachers' Sense of Efficacy Scale to show that you are individually efficacious (5 minutes)
- You will answer the questions on the Collective Efficacy Scale to show that you are collectively efficacious in working with other members of your team (5 minutes)
- Your answers on these two surveys will be used to inform the discussion questions that the researcher will write
- You will participate in an approximately 60-minute discussion with your team members to talk about the process your team went through in order to become collectively efficacious
- The discussion will be audio recorded to ensure accuracy in reporting your statements
- The interview will take place in a classroom at your school at a time convenient for you
- The researcher may contact you later to clarify your interview answers (5 minutes)
- The researcher will write the story of your team's process to reach collective efficacy and you will read this for accuracy, making any necessary changes (25 minutes)
- Your total time commitment will be 100 minutes

Risks/Discomforts

Risks to you will be minimal, but a risk may include the feeling that you are evaluating yourself or your team members.

Benefits

There will likely be no direct benefits to you. It is hoped, however, that through your participation you may learn positive things about yourself and your team members that you were previously unaware of.

Confidentiality

The research data will be kept on a password-protected computer. All printed data will be stored in a locked room, and only the researcher will have access to the data. At the conclusion of the study, all identifying information will be removed and the data will be kept in the researcher's locked office. Your identity will be kept anonymous and your school name will be changed to a pseudonym. Nobody will have access to your identity, and your name will not be used in the final narrative.

Compensation

You will not receive any compensation for your participation in this study.

Participation

Participation in this research study is voluntary. You may refuse to participate entirely without affecting your employment or standing in Alpine School District.

Questions about the Research

If you have questions regarding this study, you may contact Kathryn Larsen at katlarsen@alpinedistrict.org or 801-691-3186 for further information.

Questions about Your Rights as Research Participants

If you have questions regarding your rights as a research participant contact IRB Administrator at (801) 422-1461; A-285 ASB, Brigham Young University, Provo, UT 84602; irb@byu.edu.

Statement of Consent

I have read, understood, and received a copy of the above consent and desire of my own free will to participate in this study.

Name (Printed): _____ Signature _____ Date: _____

APPENDIX B

Teacher Beliefs

Teacher Beliefs		This questionnaire is designed to help us gain a better understanding of the kinds of things that create challenges for teachers. Your answers are confidential.												
Directions: Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns on the right side, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum. Please respond to each of the questions by considering the combination of your current ability, resources, and opportunity to do each of the following in your present position.		None at all	Very Little	Some Degree	Quite A Bit	A Great Deal								
1.	How much can you do to control disruptive behavior in the classroom?	1	2	3	4	5	6	7	8	9				
2.	How much can you do to motivate students who show low interest in school work?	1	2	3	4	5	6	7	8	9				
3.	How much can you do to calm a student who is disruptive or noisy?	1	2	3	4	5	6	7	8	9				
4.	How much can you do to help your students value learning?	1	2	3	4	5	6	7	8	9				
5.	To what extent can you craft good questions for your students?	1	2	3	4	5	6	7	8	9				
6.	How much can you do to get children to follow classroom rules?	1	2	3	4	5	6	7	8	9				
7.	How much can you do to get students to believe they can do well in school work?	1	2	3	4	5	6	7	8	9				
8.	How well can you establish a classroom management system with each group of students?	1	2	3	4	5	6	7	8	9				
9.	To what extent can you use a variety of assessment strategies?	1	2	3	4	5	6	7	8	9				
10.	To what extent can you provide an alternative explanation or example when students are confused?	1	2	3	4	5	6	7	8	9				
11.	How much can you assist families in helping their children do well in school?	1	2	3	4	5	6	7	8	9				
12.	How well can you implement alternative teaching strategies in your classroom?	1	2	3	4	5	6	7	8	9				

13.	What is your gender?	<input type="radio"/> Male	16.	What level do you teach?	<input type="radio"/> Elementary							
		<input type="radio"/> Female			<input type="radio"/> Middle							
					<input type="radio"/> High							
14.	What is your racial identity?	<input type="radio"/> African American	17.	What is the context of your school?	<input type="radio"/> Urban							
		<input type="radio"/> White, Non-Hispanic			<input type="radio"/> Suburban							
		<input type="radio"/> Other			<input type="radio"/> Rural							
15.	What subject matter do you teach? (as many as apply)	<input type="radio"/> All (Elementary/ Self-contained)	18.	What is the approximate proportion of students who receive free and reduced lunches at your school?	<input type="radio"/> 0-20%							
		<input type="radio"/> Math			<input type="radio"/> 21-40%							
		<input type="radio"/> Science			<input type="radio"/> 41-60%							
		<input type="radio"/> Language Arts			<input type="radio"/> 61-80%							
		<input type="radio"/> Social Studies			<input type="radio"/> 81-100%							
19.	What grade level(s) do you teach?	<input type="radio"/> K <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9	For office use only.									
20.	How many years have you taught?	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7	<input type="radio"/> 8	<input type="radio"/> 9
		<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7	<input type="radio"/> 8	<input type="radio"/> 9
		<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7	<input type="radio"/> 8	<input type="radio"/> 9

APPENDIX C

Modified Collective Efficacy Scale (Goddard, et al., 2000; Prelli, 2016)

Directions: Please indicate your level of agreement with each of the following statements about your team from strongly disagree to strongly agree by circling the number that best corresponds with your level of agreement. Your answers are confidential.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
Teachers in the team are able to get through to the most difficult students.	1	2	3	4	5	6
Teachers here are confident they will be able to motivate their students.	1	2	3	4	5	6
If a child doesn't want to learn, teachers give up.	1	2	3	4	5	6
Teachers here don't have the skills needed to produce meaningful student learning.	1	2	3	4	5	6
If a child doesn't learn something the first time, teachers will try another way.	1	2	3	4	5	6
Teachers in this team are skilled in various methods of teaching.	1	2	3	4	5	6
Teachers here are well prepared to teach the subjects they are assigned to teach.	1	2	3	4	5	6
Teachers here fail to reach some students because of poor teaching methods.	1	2	3	4	5	6
Teachers in this team have what it takes to get the children to learn.	1	2	3	4	5	6
The lack of instructional materials and supplies makes teaching very difficult.	1	2	3	4	5	6
Teachers in this team do not have the skills to deal with student disciplinary problems.	1	2	3	4	5	6
Teachers in this team think there are some students that no one can reach.	1	2	3	4	5	6
The quality of school facilities here really facilitates the teaching and learning process.	1	2	3	4	5	6
The students here come in with so many advantages they are bound to learn.	1	2	3	4	5	6
The students come to school ready to learn.	1	2	3	4	5	6
Drugs and alcohol abuse in the community make learning difficult for students here.	1	2	3	4	5	6
The opportunities in this community help ensure that these students will learn.	1	2	3	4	5	6
Students here just aren't motivated to learn.	1	2	3	4	5	6
Learning is more difficult in our team because students are worried about their safety.	1	2	3	4	5	6
Teachers here need more training to know how to deal with these students.	1	2	3	4	5	6
Teachers in this team truly believe every child can learn.	1	2	3	4	5	6

APPENDIX D

Interview Questions

1. To what extent do you believe that your move toward collective efficacy was a conscious and deliberate effort? Please explain.
2. Vicarious learning occurs when teachers are able to watch competent and credible models exhibiting the behaviors that the teachers would like to see in themselves. These models can be found through professional books, the stories of others' success, conference sessions, and classroom observations. In what ways, if any, has vicarious learning played a role in your journey toward collective teacher efficacy? Can you provide an example?
3. Verbal persuasion occurs when colleagues, supervisors, and administrators verbally attempt to strengthen the belief of a teacher in his or her own ability to achieve a desired goal. In what ways, if any, has verbal persuasion played a role in your journey toward collective efficacy? Can you provide an example?
4. Psychological arousal occurs when teachers are able to try new teaching strategies within a supportive, collaborative environment. The threat of trying something new is reduced and the situation becomes challenging instead of frustrating. In what ways, if any, has psychological arousal played a role in your journey toward collective teacher efficacy? Can you provide an example?
5. Mastery experiences occur when teachers successfully adopt proven instructional strategies and then see that their students' achievement levels have risen as a result. In what ways have mastery experiences played a role in your journey toward collective teacher efficacy? Can you provide an example?

6. Is there anything else that your team has done that you feel helped you become collectively efficacious? Can you provide an example?

APPENDIX E
Event Listing Matrices

Legacy Junior High School

Antecedent	Definition	Critical Incident	Exemplar
Vicarious Learning	Teachers are able to watch competent and credible models exhibiting the behaviors the teachers would like to see in themselves.	Conducting Research	I think the research allowed me and continues to allow me to identify best practice from what sounds like good ideas when I observe other teachers.
		Learning from Modeling	She is the basis for our writing model. We had something that was working fairly well already, but she was beating us. We went to her.
Verbal Persuasion	Occurs when colleagues and administrators verbally try to strengthen the belief of a teacher in his or her own ability to achieve a goal.	Conversations About Data	And so there were two rhetorical threads that happened at once. One was the data told me I was bad at my job. The second has to do with the talk that Kent and James reacted and how we reacted as a team.
		Verbal Persuasion	It wasn't like a gentle, you can do this Brad. It was, "Crap. I have to do better."

Psychological Arousal	Teachers are able to try new teaching strategies in a supportive, collaborative environment	Risk Taking	Any growth we have we have because we took risks and you've got to feel safe and energized to take risks.
		Collaborative Competition	"You're going down! We're taking Kent's class down this year!"
Mastery Experiences	Teachers successfully adopt proven instructional strategies and see that their students' achievement levels have risen.	Success on the Test	Success builds on success. We look at winning streaks and we have data and information to push us along.
		A Cycle of Mastery	There's the element of bragging rights. I leveraged that like crazy. Our students can be successful because all these people were successful before. If you run this race with me, we'll beat anything you've done before.
Effective Teacher Teams	Teams that collaborate, share the same beliefs, and establish good relationships with each other.	Collaboration	This is the most important for me. I cannot be as good a teacher without other people. I have my own abilities, but they are finite.
		Shared Beliefs	Until you've come to a common vision and ideology and description of what we're trying to accomplish, you can't make any progress.

Relationships

It's not easy for people if you don't value data. If you don't feel like during contract hours we're going to do everything for kids.

That I think is fundamental in my philosophy as a teacher. I need other people to disagree with me and challenge me. By myself I will stagnate.

Heritage Junior High School

Antecedent	Definition	Critical Incident	Exemplar
Vicarious Learning	Teachers are able to watch competent and credible models exhibiting the behaviors teachers would like to see in themselves	Models at Conference	We went to that conference where we saw what it should like. That was it for us. That conference was the catalyst.
		Models in Book	We determined our mission, vision, vision, values, and goals based on the team model provided in the book. We still revisit the book regularly.
Verbal Persuasion	Occurs when colleagues and administrators verbally try to strengthen the belief in a teacher in his or her own ability to achieve a goal.	Administrator Persuasion	Our administrator called us on it. She said was the first person who said, you guys aren't doing what you need to do. The principal said that we were right on the precipice of some awesome stuff. You are primed for doing great stuff.
		Accountability	We said, we are a team, and you are going to be accountable to me, and I'm going to be accountable to you, and we're not afraid to call each other on stuff.

Psychological Arousal	Teachers are able to try new teaching strategies in a supportive, collaborative environment.	Risk Taking	Let's try something and fail and learn from it and do it again. I think it's become challenging because we actually have an idea of where we want to be and that's invigorating.
		Safety	We spoke before about creating a good relationship. We are challenged together and we are excited to get better.
Mastery Experiences	Teachers successfully adopt proven instructional strategies and see that their students' achievement levels have risen	Student Success	It feels so good when the students have learned a standard that you intended to teach. It's like you want to do that drug again!
		Cycle of Success	It's a momentum thing. We're doing it well, and we're doing it right, and it feels really good to master something.
Effective Teacher Teams	Teams that collaborate, share the same beliefs, and establish good relationships with each other	Collaboration	I think working in isolation I could dupe myself forever in there that I'm amazing, that I'm doing good things. Looking back, it still physically bothers me. You cannot work in isolation. Your students aren't benefitting, your team isn't benefitting. You are being selfish. It has to be a group effort.
		Shared Beliefs	We were able to wrap our heads around the

Relationships

vision and see what it should look like and what it should be like. That was it for us.

Relationships are the foundation. We're all about each other and no one else matters.

We're like brother and sister.
