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Mindfully Organizing Collective Teacher Efficacy: A Case Study Of Efficacious Educator Teams

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MINDFULLY ORGANIZING COLLECTIVE TEACHER EFFICACY:

A CASE STUDY OF EFFICACIOUS EDUCATOR TEAMS

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Abstract

Collective teacher efficacy (CTE) has well documented positive effects on student outcomes (Goddard et al., 2017), teacher job satisfaction (Buonomo et al., 2020), and educator persistence (Guidetti et al., 2018) in the face of challenging tasks. Characterized by the collective belief in the group’s capability to successfully accomplish tasks associated with their professional practice (Donohoo, 2018), what influences group efficacy belief formation remains an underdeveloped area of academic and practical understanding (Tschannen-Moran et al., 2014). To better understand the influences that shape CTE beliefs, and how those influences contribute to the known sources of CTE, a multiple–case study design was used to conduct focus group interviews with four collectively efficacious elementary school-based educator teams. Affirmed within the findings of this study, an a priori conceptual link between the enabling conditions of CTE (EC-CTE) (Donohoo et al., 2020) and the five mindful organizing behaviors (Weick & Sutcliffe, 2015) was developed. Additionally, heedful interrelating (Weick & Roberts, 1993) was found to have a potential mediating role between the EC-CTE and mindful organizing behaviors, while psychological safety (Edmondson, 1999) was found to have a potential moderating role among all the conditions. Given the findings of four dynamic and interacting conditions that influence CTE beliefs, a *complex system of CTE conditions* is conceptualized, explained, and situated within the relevant literature.

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This work is dedicated to the teams of teachers, the educational collectives, formal and informal, who channel their combined talents into each child each moment of each day! What you do together makes the world a better place.

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CHAPTER 1:

INTRODUCTION

Piercing the veil of routine bell schedules and the regularity of grading intervals, schools can be viewed as complex organizational environments. Schools, and school districts, are constructed of socially networked teams, whose interactions within themselves and across other teams, process information into collective knowledge (Fidan & Balci, 2017; Fullan, 2020; Moolenaar et al., 2012). Educators both shape and are shaped by the school environments in which they work (Bandura, 1997; Weick & Sutcliffe, 2015). In complex environments, teams must be empowered to interpret their circumstances and adapt accordingly (Chrobot-Mason et al. 2016; Fidan & Balci, 2017; Yeo, 2020). Such collective agency requires that school-based educator teams believe in their capabilities to employ adaptive behaviors for their given circumstances (Bandura, 1997; Tschannen-Moran et al., 2014); they need to have both efficacy and agency.

Collective teacher efficacy (CTE) refers to educators' shared beliefs in their combined capabilities to positively impact outcomes especially for students (Bandura, 1997; Donohoo, 2018; Donohoo et al., 2020). Expanding on social cognitive theory's concept of self-efficacy, Bandura (2000) wrote, "the higher the perceived collective efficacy, the higher the groups' motivational investments in their undertakings, the stronger their staying power in the face of impediments, and setbacks, and the greater their performance accomplishments" (p. 78). More than a self-fulfilling prophecy, CTE emerges from evidenced-based evaluations of past experiences leveraged against the context of future demands (Bandura, 1997). Research indicates the perceived presence of CTE within a school has the potential to influence significant student growth outcomes (Eells, 2011; Goddard et al., 2017; Hattie, 2016) and is associated with increased teacher commitment to tasks (Rose & Norwich, 2014) and teacher job satisfaction (Buonomo et al., 2020). With such strong promise of potentially transformative impacts, school and system leaders who, with intention, can positively influence CTE are much

more likely to see transformative change for students, staff, and the school community. *How* to intentionally influence CTE remains underrepresented in both literature and practice.

Generally, the willingness to exert collective agency within complex settings such as schools is strongly influenced by the group's sense of collective efficacy (Bandura, 1997; Rose & Norwich, 2014) Resonant in the extant CTE research, a clear call sounds for better understanding antecedents of collective efficacy with the intention of providing school and system leaders with actionable strategies to invigorate teachers' collective efficacy beliefs (Donohoo et al., 2020; Loughland & Ryan, 2020; Ramos et al., 2014; Tschannen-Moran et al., 2014). Prioritizing teachers' system of beliefs requires increased focus on the sources of CTE, the conditions that influence them, and the ways in which they interact to influence collective efficacy. The inference within the research is clear: despite the well-documented power to positively influence school success indicators, CTE remains an elusive option for schools to leverage.

To frame the present study, strands of social cognitive theory were braided with strands of complexity theory into a dual-theory framework. The intention in using this dual-theory framework wad to explore the interactions among members of school-based educator teams to examine how team behavior contributes or inhibits the collective efficacy beliefs of teachers. The timeline of the COVID-19 pandemic established the temporal bounds of this multiple-case study. The case bounds were further defined by studying four efficacious teams of educators, each from separate, public, efficacious elementary schools, which in turn were each part of different school districts. These teams were asked to reflect on their team member interactions throughout the COVID-19 pandemic. Complex, self-organizing, school-based team member interactions may have been a part of the responses necessary for pushing toward optimal student-learning environments during the suboptimal contexts of the external disruptions; agency and adaptability may have been requisite team behaviors during the pandemic. Those contexts were likely to have been experienced by every school in the US and perhaps on the

globe. Exploring the types of team-member interactions that contributed to collective teacher efficacy beliefs during such a challenging set of circumstances offers applicable insights for a broad continuum of educators, educational leaders, and policy makers.

Definition of Key Terms

The following key terms are used throughout this study. Each term is defined based on its use in the relevant extant research and its conceptual importance to this study. The intent is to provide conceptual clarity and ease of readability throughout this study.

Affective States: The least influential of the four sources of collective teacher efficacy (CTE) (Bandura, 1998), affective states refer to the continuum of feelings that enhance or inhibit perceptions of CTE among a team. It is the emotional countenance associated with a given task that constitutes affective states.

Agency: Agency refers to acts done with intention by an individual or a group (Bandura, 1997). Social cognitive theory describes human agency, whether manifest from individuals or groups, as operating "generatively and proactively rather than just reactively" (Bandura, 1997, p. 6). The agentic behaviors of people are therefore produced within and producers of social systems.

Collective Efficacy: As the chief architect of social cognitive theory, Bandura (1997) defines collective efficacy as "a group's *shared belief* in its conjoint capabilities to *organize* and execute the courses of action required to produce given levels of attainments [emphasis added]" (p. 477). Emphasis was added to this definition to highlight the aligned focus regarding the ways in which educator teams organize themselves based on shared beliefs.

Collective Mindfulness: Originating from High Reliability research, this describes group organizing behavior that increases group attention and effective response to unexpected or challenging circumstances (Su, 2017; Weick & Roberts, 1993; Weick & Sutcliffe, 2015).

Commitment to Resilience: Commitment to resilience describes a team's ability to reorganize and learn from mistakes rather than be disabled by them (Weick & Sutcliffe, 2015).

Complex Adaptive Systems: Describes groups of individuals bound by common purpose, understanding, or task networked together such that interactions and interdependencies influence changes in member and group behavior (Marion & Gonzales, 2014).

Deference to Expertise: Part of a team's repertoire when mindfully organizing is to reorganize themselves, their leadership, and their repositories of expertise such that it is specific to the problem at hand (Weick & Sutcliffe, 2015), which is in contrast to many existing structures that are rigid and hierarchical.

Mastery Experience: Mastery experience is the strongest source of CTE (Bandura, 1998). It is based on the prior successes of educator teams attributed to causes within the team's control that bring about elevated perceptions of collective efficacy.

Mindful Organizing: Mindful organizing is a social process, collectively enacted and frequently reconstituted by team members that relies on preoccupation with failure, sensitivity to operations, reluctance to simplify, deference to expertise, and commitment to resilience (Vogus & Sutcliffe, 2012; Weick & Sutcliffe, 2015.

Preoccupation with Failure: A team's response to anomalies in performance or circumstances as indications of potential larger problems (Renecle et al., 2020; Weick & Sutcliffe, 2015).

Reluctance to Simplify: Mindful organizing requires team members to interact in a ways that "make few assumptions, notice more, and ignore less" (Weick & Sutcliffe, 2015, p. 72) as they pursue agreed upon goals.

School-based Educator Teams: Barrowing from Yeo's description of knowledge teams (Yeo, 2020) and Hargreaves and Fullan's (2012) description of professional learning communities, school-based educator teams are small groups within the organization of a school whose conjoint efforts use inquiry to improve practice; receive, process, improve, and transmit unique organizational knowledge; influence common goals; and strive to achieve aligned

outcomes. The unit of analysis within this study is the school-based educator team, which refers to the typical public school small-group structures of grade level, department, professional learning community (PLC), or task-assigned teams of public school educators specific to the PK–5th grades.

Sensitivity to Operations: Sensitivity to operations denotes a team's knowledge of what is actually taking place within the organization rather than an assumption that what should be taking place is in fact happening (Weick & Sutcliffe, 2015).

Social Persuasion: Social Persuasion occurs when credible and trustworthy others successfully encourage teams to organize and innovate (Bandura, 1998), thereby improving perceptions of collective efficacy.

Vicarious Experience: Vicarious Experience produces perceptions of collective efficacy when teams are able to see success achieved by teams similar to themselves (Bandura, 1998). Vicarious experience is the second most powerful source of CTE.

Statement of the Problem

The problem studied was the lack of understanding among researchers and public school educators regarding CTE antecedents and the conditions that support it (Donohoo, 2018; Donohoo et al., 2020; Ramos et al., 2014; Tschannen-Moran et al., 2014). Disparities in comparative perceptions of CTE between teams, as well as between schools, have been noted within the larger body of CTE research (Berebitsky & Salloum, 2017; Moolenaar et al., 2012; Voelkel & Chrispeels, 2017). Despite long-standing and persistent calls for descriptively rich accounts of the phenomena of teacher efficacy beliefs and their antecedents (Donohoo, 2018; Ramos et al, 2014; Wheatley, 2005), qualitative CTE research remains minimal. Limiting the pool of research-based, practical applications for school and system leaders is a lack of collective efficacy studies that use the school-based educator team as a unit of analysis. Research that has explored educator teams (Berebitsky & Salloum, 2017; Moolenaar et al., 2012; Voelkel & Chrispeels, 2017) did so by aggregating large data samples across whole

schools or school systems. Although such quantitative methods gather vast amounts of data, they may ignore the complexity and richness of a collective teacher efficacy as a social phenomenon. The potential to surface deep insights into teachers' collective efficacy beliefs may lay bound and hidden in the dynamic and mindfully organized spaces between team members as described by the team members themselves.

Statement of Purpose of the Study

The purpose of this qualitative multiple-case study was to better understand collective teacher efficacy antecedents and supportive conditions through team member interactions within school-based teams in public elementary schools. In this study, CTE antecedents referred to the cognitive sources of CTE originally developed by Albert Bandura (1977, 1997, 1998, 2000) and were described in the previous section of this chapter. Conditions of CTE describe the personal, social, and situational factors affecting how experiences are interpreted into efficacy beliefs (Bandura, 1997). By exploring emergent organizing behaviors among school-based educator teams for possible conditions of collective teacher efficacy, this study contributes to an area of need identified within the extant collective efficacy research. Collective efficacy literature indicates a dominant theoretical framework for collective efficacy research; collective teacher efficacy research is entrenched within its social cognitive theory origins. While it is necessary to preserve the integrity of Bandura's (1977, 1997, 1998) original theories, it is also important to deepen understanding and broaden applications of CTE by situating it within a complexity framework.

The present multiple–case study research framework provides a more comprehensive understanding of the job-specific, embedded supports that leaders can leverage to invigorate collective efficacy beliefs in and among school-based educator teams. The study framework addresses the paucity of research regarding conditions influencing CTE. Lastly, this study offers a fresh perspective for CTE research by integrating the traditional social cognitive frame with complexity theory frames. It was the researcher's intention that, by using multiple frames to view

multiple cases of efficacious educator teams, future research could expand the empirical understanding and practical implementation of conditions that invigorate collective efficacy beliefs among school-based educator teams.

Research Questions/Design

Donohoo and Katz (2020) are explicit in their descriptions of the different group behaviors between efficacious and non-efficacious educator groups; efficacious teams generate common goals, persist longer at more challenging tasks, take ownership for future outcomes, and work toward mastery rather than proficiency. Although this speaks to how the whole team behaves, little research has yet been found that speaks to the possibility of team member interactions as complex adaptive behaviors that influence teachers' beliefs about their collective efficacy. Informal observations of teams in numerous educational settings, affirmed by the research outlined in this and subsequent chapters, generated a simple proposition: efficacious school-based educator teams interact differently than non- or less efficacious school-based educator teams. To address the purpose of this study, the following research questions were designed:

1) How can interactions among members of school-based teams within public elementary schools be used to understand collective teacher efficacy antecedents?
2) How can interactions among members of school-based teams within public elementary schools be used to understand the conditions that support collective teacher efficacy?

Conceptual Framework

Like complexity theory, social cognitive theory (Bandura, 1997) argues that "teachers operate within an interactive social system" (p. 243) and "individuals are simultaneously agent and object" (p. 5) within such systems. Social cognitive theory concerns itself with the complex adaptive behaviors of individuals and, by extension, the collectives in which they interrelate (Bandura, 1997). The extant collective teacher efficacy research remains insistent: more

understanding about collective efficacy sources and their interactions, as well as other possible sources, are needed (Donohoo, 2018; Ramos et al., 2014; Tschannen-Moran et al., 2014).

Despite the scarcity of a similar theoretical fabric, Bandura (1997) telegraphed the need for a tapestry made of social cognitive theory and complexity theory when he stated, "educational development through efficacy enhancement must address the social and organizational structure of educational systems" (p. 243). Researchers argue that schools are complex organizations composed of interconnected teams who share and process knowledge across those teams (Fidan & Balci, 2017; Hargreaves & Fullan, 2012). Hargreaves and Fullan (2012) suggest that most teachers will self-organize into smaller groups, even if the formal structure of a school does not require it. To understand the antecedents of teachers' collective efficacy beliefs, researchers need to consider the ways in which teams process experiences and self-organize to activate or deactivate collective teacher efficacy.

Specifically, the concept of mindful organizing (Weick & Sutcliffe, 2015), when used to explain team member interrelating, holds promise for an a priori explanation of educator team-member interactions as sources of CTE beliefs. The conceptual underpinning of this study suggested that mindful organizing (Weick & Sutcliffe, 2015) as a complexity theory, satisfactorily identifies behaviors between members of a team that contribute to the team's enhanced perceptions of CTE. Indeed, the chief architects of both social cognitive theory (Bandura, 1977, 1997) and mindful organizing (Vogus & Sutcliffe, 2012; Weick & Sutcliffe, 2015) use Langer's research (recently revisited in 2014) on the psychology of mindfulness in individuals and groups as conceptual building blocks for their individual propositions.

Assumptions, Limitations, Scope

This study was premised on three overarching assumptions. Broadly listed, those assumptions are as follows: to better operationalize CTE, a deeper understanding of its antecedents and the conditions influencing them is needed; to deepen that understanding, the collective efficacy research base is in urgent need of more qualitative studies; and to truly

understand contextual dynamics of collective teacher efficacy, which may be necessary to operationalize practices that elevate teachers' collective efficacy beliefs, school-based educator teams should be the unit of study. Prevailing measures of teachers' collective efficacy beliefs aggregate individual beliefs across a much larger sample, such as a school or school system (Tschannen-Moran & Barr, 2004).

Underpinning the methodology of this study, the researcher assumed efficacious school-based educator teams will exist in efficacious schools. By extension, the research questions were designed to distinguish between sources as antecedents, and the conditions that influence those antecedents. This assumption was based on Bandura's (1997) contention that "any given influence, depending on its form, may operate through one or more of [the sources of efficacy]" (p. 80). It was assumed that school and system leaders hold a vested interest in increasing individual and collective teacher efficacy due to its potential for improved school-wide outcomes. It was assumed that some form of a team represents the majority composition of most modern public schools and that those teams represented a set of complex, overlapping, and connected behaviors within the team as well as among other teams and the overall school environment. Lastly, it was assumed that the COVID-19 pandemic has been a universal external perturbation experienced by all public school settings, albeit those experiences may vary.

Time and availability of participants limited the sample size to four school-based educator teams, interviewed as focus groups, of no more than 10 members as recommended by Brinkmann and Kvale (2015). Bandura (1997) expressed concerns about focus groups as a study method for collective efficacy research when he suggested that a dominant personality can skew responses. The researcher facilitated the discussions ensuring no one person dominated the interview. Because mindfully organized teams defer to the expertise of members with the most valuable information for a given situation (Su, 2017; Weick & Sutcliffe, 2015), the interview protocol encouraged equitable member participation. Gathering as much data as possible to address the research questions required the interviewer to facilitate with greater

involvement than would be typical for a focus group interview. This had the potential to inhibit the variety, validity, and reliability of some responses, thus requiring skillful diligence on the part of the interviewer. These restrictions, however, were viewed much like poetry's various structural rules: they were used to shape and refine the study scope rather than inhibit the research.

The research focus was centered on ways in which school-based educator team members'' interactions contributed to or detracted from teachers' collective efficacy beliefs. Student outcomes, leadership traits, and change efforts, which are often variables considered in collective efficacy research, fell beyond the scope of the study. The scope of the sample represented prekindergarten through eighth grade (PK–8) public school educator teams in central New Jersey. Lastly, the scope was limited to focus group recall of team interactions during the COVID-19 pandemic. Interactions of previously affiliated team member interactions fell outside the scope of this study but may have been comparatively relevant to the experiences shared by the teacher teams.

Rationale and Significance

Collective efficacy antecedents, the four sources identified by Bandura (1993), and the various conditions that influence them, remain a woefully understudied area. The importance of CTE to student outcomes (Goddard et al., 2017) school culture (Donohoo, 2018), and teacher satisfaction (Buonomo et al., 2020; Jurado et al., 2019) creates an urgency for deeper awareness of what causes collective teacher efficacy as much as the ability to leverage it in practical ways (Berebitsky & Salloum, 2017). Combining social cognitive theory with complexity theory offers a new compass for collective efficacy research, which may lead to different research pathways with new understandings about sources of collective teacher efficacy, practical applications, and future research implications.

Bandura acknowledged the importance of embracing various frames for understanding efficacy and admonished conceptualizations that create "contentious dualism" (2000, p.77).

Whether perceptions are formed by an individual's learning or a group's learning, rejecting duality means that learning takes place at the site where individual beliefs are formed *and* simultaneously at the site where individuals intersect with their social environment (Bandura, 2000; Takahashi, 2010). Mendes et al. (2016) use complexity theory to suggest a similar conceptualization of team learning as emerging from negotiated interpretations of complex circumstances. This further means that individual beliefs impact the group as much as their individual actions shape the group.

Individual actions are often, if not always, responses to an environment of which the group constitutes a significant part (Bandura, 1997); therefore, the group beliefs and actions will impact and shape the group (Mendes et al., 2016; Tourish, 2019 Weick & Roberts, 1993). Despite this Gestalten understanding that the sum of the parts creates a whole that can be substantially different, the prevailing collective efficacy research continues to focus on the individual parts, and thereby possibly propagating, rather than ameliorating, the contentious dualism within collective efficacy research. Layering the social cognitive frame atop the complexity theory frame built a unique lens to study the parts of collective teacher efficacy as they influence, and are influenced by, the ways in which group interrelating occurs. It was the intention that doing so would provide educational leaders, both formal and informal, with clear, available levers that can be advantaged to support better and more efficacious functioning of school-based educator teams, thus, supporting better outcomes for students and schools.

Summary

Collective teacher efficacy offers an exceptionally powerful promise of educational benefits in terms of student outcomes, school culture, and professional behaviors (Donohoo, 2018; Hattie, 2016). The research to date, however, lacks a frame that firmly aligns the common understanding of CTE beliefs with the complex, dynamic, fast-moving, and highly interactive nature of the modern school, as Fidan and Balci (2017) describe them. Without that firm alignment, current understandings about collective efficacy sources and influencing conditions

lack the requisite complexity (Weick & Sutcliffe, 2015) for proper adaptability to influence positive school change.

As the pace of school systems increases, and external demands become more volatile, uncertain, complex, and ambiguous (Bennett & Lemoine, 2014; Fidan & Balci, 2017), the organizational leaders of schools can no longer afford the glacially slow effort of supporting "one brain at a time" (Weick & Roberts, 1993, p. 358). In keeping with more recent collective efficacy researchers (Adams & Forsyth, 2006 Donohoo et al., 2020), this study continued the evolution of collective teacher efficacy research by combining theories into a dual-theory framework of social cognitive and complexity theories. Using multiple–case study research, facilitated by focus group interviews of efficacious school-based educator teams, the research design explored the complex social interactions of team-members as contributing to, or inhibiting, teachers' beliefs in their collective capabilities to affect positive school change.

Initial conceptual inquiries into the differences in the ways that teams of strong and weak efficacy interact revealed mindful organizing (Weick & Sutcliffe, 2015), hailing from complexity theory, as an a priori explanation for team member interactions that yield stronger collective efficacy beliefs. It was also important to consider competing theories and/or supplemental explanations emergent within the data. By answering the research questions presented, the results from this study contribute to the much needed research understandings of collective efficacy antecedents. The topical research and conceptual underpinnings of this study are explored in Chapter 2 by thematically linking the concepts of collective teacher efficacy, mindful organizing, schools as complex organizational environments, emergent group-level attributes, and team organizing behaviors during disruptions. Establishing the conceptual framework for this study in the literature review, the methodology, a qualitative, multiple-case study, is detailed in Chapter 3. The methodology details include the data-gathering methods—focus group interviews—as well as information about the sample populations, participants, analysis methods, limitations, and ethical concerns. The results of the data coding are explained in

Chapter 4. Explanations include data gathering and organizing from the focus group interviews. An analysis of each case and the patterns found across all cases are included. Additionally, findings unique to singular cases are shared, as are supplementary explanations not initially considered within the study framework. The findings detailed in Chapter 4 are discussed in Chapter 5. Connections between those findings to the greater body of literature contextualize and legitimize the findings. In the conclusion, the study limitations and the implications for future research are considered.

CHAPTER 2:

LITERATURE REVIEW

Collective teacher efficacy (CTE) has gained significant attention from researchers and practitioners alike. Research shows that when teachers hold strong positive beliefs about their collective capabilities, significant positive student learning gains are more likely to occur (Eells, 2011; Goddard et al., 2017 Hattie, 2016). Collective teacher efficacy has the largest potential impact on student outcomes when compared with a growing list of teaching and learning variables (Eells, 2011; Hattie, 2016; Visible Learning, 2020). The benefits of CTE influence school factors beyond student achievement with noted benefits to educator persistence, perseverance, and teacher job satisfaction (Buonomo et al., 2020; Jurado et al., 2019; Klassen et al., 2010). Change efforts find difficult footing in the complex organizational environments of schools; however, the potential positive impact of strongly held collective efficacy beliefs among teachers makes operationalizing CTE an endeavor worthy of every educator's effort (Berebitsky & Salloum, 2017; Donohoo, 2017b). Despite these notable outcome effects, questions of CTE's applicability and practical applications as a focus for school change persist (Donohoo, 2018, Klassen et al., 2011; Ramos et al., 2014).

Throughout the literature review, social cognitive theory (Bandura, 1977) is woven together with complexity theory (Fidan & Balci, 2017; Mendes et al., 2016; Tourish, 2019. Braiding these theories together aids in a more thorough understanding of the complex contextual and social influences of collective efficacy beliefs. Several themes are identified through the theoretical braiding and are explored through the rest of the chapter. Because this literature review is thematically organized, an overview of the emergent themes is appropriate.

The theoretical evolution of collective teacher efficacy provides the necessary background to support an exploration of collective efficacy's impact on educator professional behaviors and its impact on various educational outcomes. Cross-pollinating concepts of social cognitive theory with complexity theory, schools are argued to be defined as complex

organizations (Fidan & Balci, 2017). Narrowing the focus from the macro environment of schools to the micro environment of teams offers an exploration into the complex interrelating behaviors of educator teams and how those behaviors impact perceptions of collective efficacy. Broadly conceptualized, teams and team behaviors are explored as organizing mechanisms to solve problems and achieve organizational goals (Mendes et al., 2016; Weick & Sutcliffe, 2015). This implies the presence of collective agency (Bandura, 1997), or generalized agency (Holzkamp, 2013, cited in Langemeyer, 2019), which is exerted when groups use granted leeway to effect actual organizational improvements. Complexity theory, specifically mindful organizing (Vogus & Sutcliffe, 2012; Weick & Sutcliffe, 2015), is therefore explored as an a priori conceptual link between school-based educator team behaviors and educator collective efficacy.

Three overarching propositions emerge from the common themes within the CTE literature: 1) to better operationalize CTE, a deeper understanding of CTE antecedents is needed; 2) to understand CTE antecedents, the CTE research base is in need of more qualitative studies; 3) to more fully understand the contextual dynamics of CTE, which may be needed to operationalize practices that elevate perceptions of CTE, the group, team, or collective is a worthy unit of study. These propositions were used to conduct increasingly refined literature searches; however, few studies were found that considered team-level collective efficacy. This generated another set of searches for *collective efficacy* and *teams* or *groups*, *communities* or *collectives* using snowball, reverse snowball, opportunistic, and cross-categorical inquiries. Searches for collective efficacy and team-level interactions only accommodate one half of the theoretical framework for this study. Further searches were conducted using key phrases such as “*mindful organizing*,” “*mindfully organized*,” “*heed*,” and “*complexity theory*.” Complexity theory was also combined in ways that allowed for searches within public education settings. Lastly, any studies, unless seminal to either theory, that were more than ten years old, were rejected, and more recent studies were given greater

consideration. In some cases, however, studies older than a decade are included to show the historical evolution and continuing importance of the topics they address.

Social cognitive theory proposes that perceived collective efficacy within complex individual interdependencies has an impact on varying aspects of social systems (Bandura, 1997). This suggests a justification for combining social cognitive theory with complexity theory. Aligned with this theoretical dyad, the personal interest of the researcher will also provide greater context and perspective.

Conceptual Framework

Who one is, the experiences that have shaped one's beliefs, and the emergent ideologies born from those beliefs find their way into the corners of a researcher's study (Ravitch & Riggan, 2017) by infusing the mortar that holds the various study components together. Ravitch and Riggan (2017) encourage aspiring researchers to improve upon the integrity of that mortar by explicating rather than eradicating the sense of self as it relates to any proposed study. The following conceptual framework provides a foundation for addressing the research problem and answering the research questions. It also provides transparency for the conceptual considerations that formed the theoretical framework described in later sections of this chapter.

Agency and efficacy are explicitly linked constructs within social cognitive theory (Bandura, 1997). The willingness to exert collective agency within such complex settings as schools to a significant degree is dependent upon a team's sense of collective efficacy (Donohoo, 2018). In schools, this is referred to as CTE (Bandura, 1993, 1997). Collective teacher efficacy is the perception of educators that they can collectively impact the outcomes of their students over and beyond the circumstances that may hinder student growth (Bandura, 1993, 1997). Donohoo et al. (2020) have identified specific conditions that, when present, invigorate the sources of collective efficacy and therefore enhance teachers' perceptions of collective teacher efficacy. Experiential observations suggest that, despite the presence of such

conditions, the degree and pervasiveness of collective efficacy perceptions across various educator teams are unevenly manifest. This suggests that some activating or inhibiting attribute of team-member interactions may impact educators' beliefs about their ability to effect change. Tschannen-Moran et al. (2014) echo that conceptual curiosity when imploring researchers to learn more about the influencing effect collective contexts have on teacher beliefs.

Explanations within the research, however, do not address differences between teams within the same settings regarding disparities in apparent levels of CTE nor the willingness to exert group agency. Casual and work-related observations indicated that efficacious teams interrelate differently than non-efficacious teams. In other words, observations made during the researcher's assigned work responsibilities suggest that members of efficacious teams pay greater heed to one another than do members of less efficacious teams (Stephens & Lyddy, 2016; Weick & Roberts, 1993). This was particularly observable in the ways that teams organized themselves to address a given task regardless of whether that task was structured or emergent.

Based on the work of Weick and Roberts (1993), and later Weick and Sutcliffe (2015), mindful organizing is considered to have an a priori influencing effect on the enabling conditions of collective teacher efficacy, which in turn influence the sources and eventual perceptions of CTE. Simply put, mindful organizing is a team's ability to anticipate and resiliently manage unexpected, unfamiliar, ambiguous, or complex perturbations (Russell, 2015; Vogus & Sutcliffe, 2012; Weick & Sutcliffe, 2015). Mindful organizing describes the ways by which teams interrelate that enable them to see and swiftly act upon unexpected challenges before those challenges exceed the team's ability to control them (Vogus & Sutcliffe, 2012; Weick & Sutcliffe, 2015). Informal observations of teams in numerous educational settings generated a simple a priori yet evolving theory: mindful organizing is a precondition of CTE. Such a theory could be important in its ability to help teams leverage the enabling conditions of CTE.

To guide this research, a dual-theory theoretical framework was developed using complexity theory (Fidan & Balci, 2017; Mendes et al., 2016; Tourish, 2019) and social cognitive theory (Bandura, 1997). Both theories argue that school environments are interconnected, complex social systems in which teachers influence, and are influenced by, the social circumstances of that system. Complexity theory concerns itself with the emergence of phenomena and the ways that entities organize themselves to adapt to such perturbations (Mason, 2008; Tourish, 2019). Social cognitive theory concerns itself with the adaptive and agentic behaviors of individuals and the groups within which they interact (Bandura, 1997). As noted, an expanded research base of collective efficacy beliefs is needed, yet comparatively little research is done in this area (Donohoo, 2018; Ramos et al., 2014; Tschannen-Moran et al., 2014; Wheatley, 2005). Combining social cognitive theory with complexity theory may offer fresh insights into how collective efficacy perceptions are generated from team member interactions.

Bandura (1997) signaled the need for weaving these two theories when suggesting that CTE research must consider the intersection of social and organizational structures within school settings. Bandura (1997, 1998) further argues that “schools rank at the intermediate level of interdependence” (p. 248), and interdependencies create complexity (Tourish, 2019) within the school environment. It is, therefore, logical to conclude that stakeholders interested in leveraging collective efficacy for school change should consider a complexity theory lens to focus and magnify their efforts. Tightly braiding complexity theory and social cognitive theory brings forward the social, political, and organizational contexts within which educators believe themselves capable of navigating change successfully for themselves and their students.

Complexity theory concerns itself with the knowledge and behaviors produced by the interactions of individuals with one another and with their environments, and the choices made in response to each (Marion & Gonzales, 2014). These complex adaptive systems create the socially co-constructed realities that become the organization (Weick & Sutcliffe, 2015). In a

sense, the complex and negotiated organizing actions of individuals create the organization (Weick & Sutcliffe, 2015) in which these agents work, strive, thrive, resist, and persist. Viewing change through complexity theory, change is considered to emerge through interdependent interactions inside of moderately restrictive environments, which Marion and Gonzales (2014) suggest describes a majority of human behaviors, if not the human condition itself. Mendes et al. (2016) argue that teams, departments, and other small group structures represent the sites of complex dynamic systems. Tourish (2019) contends that “Complexity resides in the interaction of the [organization’s] parts . . . It is these interactions that require study as well as the interactions . . . within dyads, small groups, and wider organizational systems” (p. 222). It is the liminal space between groups, as well as the space between individuals, in which organizational complexity is born, negotiated, and harnessed.

Interdependence among individuals and networked teams who process organizational knowledge define schools, if not the organizing intentions of schools (Fidan & Balci, 2017; Moolenaar et al., 2012). Hargreaves and Fullan (2012) observe that most teachers will self-organize into operational groups even in the absence of administrative directives. The regular order of schools—bells ringing on schedule, assignments due with regularity, and routine arrivals and dismissals—may contribute to a sense that schools are simple organizations. Fidan and Balci (2017) provide evidence to the contrary arguing that the informal social structures of schools are complex and self-organizing. Bandura (1997) substantiates the position that schools are complex organizations describing school processes as composed of agentic transactions within which the emergent group-level attribute of CTE emerges (Bandura, 1997) because of complex adaptive social systems.

The complementary theory used for this framework is social cognitive theory (Bandura, 1977). The guiding framework of this theory sees human agency as developing from the reciprocal interactions of an individual’s behavior, personal factors, and the external environment. This “triadic reciprocity” (Bandura, 1997, p. 6) leads to self-efficacy, the individual's

belief that they have the skills and resources necessary to successfully impact the outcomes of a given task. Since other individuals are part of the agent's environment, interdependence and collective work emerge as critically important aspects of modern employment (Bandura 1997; Mendes et al., 2014; Tourish, 2019). For this reason, Bandura (1997) "extends the analysis of human agency to the exercise of collective agency" (p. viii) and to collective teacher efficacy.

There are four sources of self-efficacy (Bandura, 1977), the researched influences of which have been expanded to collective efficacy (Bandura 1997). Those sources are: 1) mastery experience; 2) vicarious experience; 3) social persuasion; 4) affective states. Donohoo (2017a) proposed six enabling conditions that support enhanced perceptions of collective teacher efficacy. Using structural equation modeling, Donohoo et al. (2020) refined that list to five enabling conditions: 1) cohesive teacher knowledge; 2) goal consensus; 3) embedded reflective practice; 4) empowered teacher leaders; 5) supportive leadership. The enabling conditions research (Donohoo, 2017a; Donohoo et al., 2020) was based on the concept of categorizing collective efficacy sources into proximate and remote sources (Adams & Forsyth, 2006). Bandura's (1977, 1997) four sources instigate efficacy by drawing on previous, and therefore remote, experiences that collectives juxtaposed to future tasks. The enabling conditions (Donohoo, 2017a; Donohoo et al., 2020) are experienced in the moment, making them proximate sources.

To carry the dual-theory framework throughout the rest of this chapter, the strands of the two theories must be more tightly braided. Bandura (1997) takes specific pains to describe the school setting, which he implies is a complex organization, to contextualize the impediments and activators of teachers' efficacy beliefs. It is important to keep in mind that complexity requires interactions; it more specifically demands interdependencies between organizational actors (Marion & Gonzales, 2014; Tourish, 2019; Mendes et al., 2016) and their networked teams. Bandura (1997) ranks school systems at an intermediate level of interdependence, which fits well within more modern descriptions of complex organizations as moderately

constrained, interactive systems (Marion & Gonzales, 2014). Bandura (1997) connected those complex interdependencies to collective teacher efficacy when he stated, “although the level of academic progress achieved by a school largely reflects the summed contributions of the individual teachers, the various organizational interdependencies contribute to the teachers’ instructional efficacy” (p. 248). Within the complexity of interdependencies, contributions, and negotiated interactions of educators, teacher beliefs about their collective capabilities to effect positive change take shape.

Social cognitive theory suggests that efforts to understand and improve perceptions of CTE need to accommodate the social setting in which efficacy is intended to proliferate (Bandura, 1997). Complexity theory’s focus on small groups of teachers, their interactions, and the interactions of those teams affords a logical and complementary lens through which we can better view the collective efficacy concepts embedded in social cognitive theory. Likewise, schools are complex environments made up of formal and informal self-organizing systems of human architecture (Fidan & Balci, 2018; Hargreaves & Fullan, 2012). It then follows that the complex social context of within-team behavior, or team interrelating, is a critical contributor to the growing understanding of collective teacher efficacy antecedents. Indeed, social cognitive theory’s proposition that personal agency and collective agency develop within a reciprocal relationship between personal behavior, internal personal factors, and the external environment (Bandura, 1997) implies a complex array of interdependencies necessary to influence the agency and efficacy of school-based educator teams.

Jiang et al. (2016) found that team learning, as a function of adult learning, is part of a complex transaction between people and their social environments. Donohoo et al. (2020) studied the enabling conditions of collective teacher efficacy, finding that, among other enabling conditions, cohesive teacher knowledge is an important factor in the complex social environment of schools. It is reasonable to conclude that having co-constructed knowledge of what is taking place between and within classrooms reduces team ambiguity and uncertainty

and increases potential for adaptive team learning (Jiang et al., 2016), thereby improving perceptions in the team's belief that they can productively influence the outcomes of whatever tasks may be before them.

Despite his insistence that social settings be considered when endeavoring to improve collective efficacy, Bandura (1997) was hesitant to embrace team-level analysis in the measurement of collective efficacy research, favoring the aggregate of individual measures. Bandura's reluctance may be explainable by the "decade-long hullabaloo . . . over random assignment designs as the preferred 'gold standard' for doing any social science research" (Yin, 2018), which was indicative of research trends during the decades that efficacy research was maturing. Yin (2018) provides evidence that social science research trends have changed, now embracing case studies as a valuable means of conducting social science research. By overlaying complexity theory atop social cognitive theory, the intention to broaden the base of practical strategies that school and district leaders can use to improve CTE is better brought into focus with teams as the unit of study.

Review of the Literature

Nearly 50 years of efficacy research concludes that the stronger the presence of CTE in a school, the greater the student outcomes and the more positive the overall school culture is likely to be (Donohoo, 2018; Klassen et al., 2011 Ramos et al., 2014; Wheatley, 2005). Collective efficacy can improve job satisfaction (Klassen et al., 2010; Salanova et al., 2014), teacher wellness, and teacher motivation (Brown et al., 2019), and increases task persistence in the face of adversity (Guidetti et al., 2018). It would seem that CTE functions as a self-fulfilling prophecy—a sense that what is believed by the team will be achieved by the team. Contrary to this popular misconception, educators' beliefs about their collective capabilities are rooted in the evidence of experience (Bandura, 1997) and reflective examination of that evidence (Donohoo et al., 2020). A deeper exploration of the evolution of collective teacher efficacy antecedents will

provide a deeper understanding of those sources and how they impact individuals, as well as groups.

Collective Teacher Efficacy

The collective perceptions of a group's agency and ability to effect positive change, in general, can be considered collective efficacy, or collective teacher efficacy as it is the focus of this research (Bandura, 1993, 1997, 2000). These interdependencies within and between self-monitoring teams (Stephens & Lyddy, 2016) are the hallmarks of complex adaptive systems. Tschannen-Moran and Barr (2004) refer to CTE as the "collective self-perception that teachers in a given school make an educational difference to their students over and above the educational impact of their homes and communities" (p.190). Goddard et al. (2004) add to the description of CTE, referring to it as "the judgments of teachers . . . that the faculty . . . can organize and execute the courses of action required to have a positive effect on students" (p.4). Theory defines the sources of CTE, categorizes them, and, as such, theory orients the ways in which we conceptualize CTE, its sources, and its practicality in schools. With the dual-theory framework now available to contextualize the sources of CTE, those sources will be outlined.

Sources of Collective Teacher Efficacy

Social cognitive theory has identified four sources of collective efficacy described as mastery experience, vicarious experience, social persuasion, and affective states (Bandura, 1997). According to Bandura (1998) mastery experience is a group's efficacy for a future task based on the group's prior successful outcomes in similar tasks. The prior patterns of success lend confidence to capabilities for similar success in future contexts, which in turn builds the group efficacy for that future task. Vicarious experience builds a group's efficacy when similar individuals or groups, or groups in comparable circumstances, experience success with a similar task (Bandura, 1997, 1998). The success experienced by a *comparable other* group builds the collective efficacy of the new group. It does so by affirming that the group will be able to achieve success in a similar future task. Social persuasion is the ability of key actors within

the organization to provide evidence and convincing reasons why a group will be successful in its task endeavors (Bandura, 1997, 1998). It is the influence of the persuasive actor(s) that increases the group's efficacy. Affective states build efficacy through enthusiasm and joy for a task (Bandura, 1997, 1998). Often arranged in descending order of impact on efficacy, of these four sources, mastery experience is considered to have the greatest impact on developing while affected states will have the least impact.

The four sources of CTE represent the cognitive site at which individual behaviors, individual internal qualities, and an individual's environment are processed as they interact with other individuals to perform an agreed upon and important task (Bandura, 1993). These sources are considered to be remote sources of efficacy (Adams & Forsyth, 2006; Arzonetti-Hite & Donohoo, 2021; Donohoo et al., 2020) due to the temporal fact that such source-experiences must have taken place in the past. Donohoo et al. (2020) offer a set of proximate sources or enabling conditions that influence perceptions of CTE temporally closer to an event that requires perceptions of CTE to be present. Descriptions of each of the five enabling conditions of CTE follow.

Enabling Conditions of Collective Teacher Efficacy

Social cognitive theory is rooted in individual and collective agency (Bandura, 1997). It stands to reason that the first of five enabling conditions of collective teacher efficacy (Donohoo et al., 2020) is empowered teacher leadership. When teachers are empowered to make decisions that have a significant impact on their work as educators, their belief in their ability to effect change is strengthened (Darrington & Angelle, 2013). Lewis (2009, as cited by Donohoo, 2017a) suggests that these leadership engagements contribute to mastery experience through successful outcomes. Empowered teachers can take on more leadership roles, which increases the opportunity to enhance social persuasion through shared professional capital (Donohoo et al., 2020; Hargreaves & Fullan, 2012). Conditions that empower teacher leadership, therefore, also support enhancements to teachers' belief in their capabilities to address important and

emergent matters. The second enabling condition of CTE is goal consensus. Clarity regarding the goals set for a group and the organizing processes used to establish those goals support CTE (Donohoo, 2018; Donohoo et al., 2020; Kurz & Knight, 2003; Ross et al., 2004). Clarity and transparency regarding conjoint goals influence motivation and a sense of achievability as well as the willingness to persist when goal attainment becomes difficult (Bandura, 1997; Donohoo et al., 2020). Agreed upon goals may be explicit outcomes-based goals or overarching, purpose-driven goals (Arzonetti-Hite & Donohoo, 2021). Co-constructing clear expectations through a transparent process stimulates sources of CTE.

Deceptively simple, the third enabling condition of CTE is cohesive teacher knowledge. What constitutes sound pedagogy across team members is determined by a collective understanding of what instructional practices are actually taking place along with the actual impact of those practices (Donohoo et al., 2020; Ross et al., 2004). Like goal consensus, cohesive teacher knowledge as a condition implies that teachers use evidence to generate agreement about what will work for students and whether or not it actually does work when used (Donohoo & Katz, 2020). Leveraging previous success builds mastery experience, while observing the practices of colleagues builds vicarious experiences, thus cohesive teacher knowledge enables CTE.

Embedded reflective practice is the fourth condition of CTE. To have cohesive teacher knowledge about what actually works, educator teams must reflect on their practices using student outcomes data (Adams & Forsyth, 2006 Donohoo, 2017a; Donohoo et al., 2018; Donohoo et al., 2020; Katz & Dack, 2013 Donohoo & Katz, 2020). A review of evidence of student progress toward mastery, established through the process of setting goal consensus, contributes to teacher mastery experience. Should the data suggest a change is needed, embedded reflective practice allows for vicarious experiences to be shared, which also leverages social persuasion in the pursuit of new interventions (Donohoo & Katz, 2020). Embedded reflective practice is an intentional condition (Donohoo & Katz, 2020) that empowers

school-based educator teams to deliberately consider what had worked in past similar situations to leverage those experiences for success in a future situation.

It is difficult to visualize the previous conditions being established without supportive leadership, which is the fifth and final enabling condition of CTE. Bandura (1997) argues that empowerment is not bestowed by benevolent leaders, but rather it is gained by those who can leverage leadership opportunities despite obstacles. In suggesting such, Bandura (1997) is exemplifying the concept of reciprocal influences indicative of social cognitive theory. Supportive leaders will ensure that obstacles are removed (Donohoo et al., 2020) so empowerment opportunities for teachers can be realized. The successful leveraging of those opportunities for positive school outcomes yields more opportunities for leadership as empowered by the school leader. Though not impossible to achieve without it, the above four enabling conditions are dramatically influenced by the fifth condition, supportive leadership.

Overall Benefits of Collective Teacher Efficacy

With an effect size of 1.57 (Visible Learning, 2020) based on data last updated in 2018), CTE holds the pinnacle position as having the greatest positive effect on student outcomes from among more than 200 other variables studied in Hattie's evolving Visible Learning meta-analysis (Hattie, 2015). Hattie's evolving work, eventually updated with Eells's (2011) meta-analysis, implies collective teacher efficacy has the potential to produce the largest amount of student growth in one year when compared to all other variables (Visible Learning, 2020). The meta-analyses conducted by Eells (2011) and Hattie (2015) have brought to light the powerful potential of collective teacher efficacy due to its positive influence on student outcomes (Goddard et al., 2020; Goddard et al., 2015; Goddard et al., 2017), school culture (Donohoo, 2018; Ramos et al., 2014), and professional behaviors (Bandura, 2000; Donohoo, 2017b; Donohoo et al., 2020; Ketelaar et al., 2012; Hokka et al., 2017).

It is beyond the scope of this work to explore the criticisms of Hattie's work and therefore CTE; it is, however, important to briefly acknowledge them. Although Hattie's use of effect sizes

to create his list of *what works* (Donohoo et al., 2018) has been criticized (Hoogsteen, 2020), such criticisms seem to largely ignore the nuance of Hattie's published works. Other criticisms warn against using collective efficacy as a pseudo-panacea for change thus creating toxic positivity (France, 2021). Hattie (2015) and others (Donohoo et al., 2018) are clear that CTE is not something a leader does, nor is it something that can be done to others. Enhanced perceptions of CTE require the development, interaction, and reciprocal influence of the four sources of CTE (Bandura, 1977, 1997), fostered in social contexts that are rich with the enabling conditions of collective teacher efficacy.

School Leadership and Collective Teacher Efficacy

As noted previously, leadership plays a key role in staff perceptions of collective efficacy. Goddard et al. (2015) studied 1,606 teacher surveys alongside 4,167 fourth grade students' data from 93 Midwestern schools. Goddard et al. (2015) found that instructional leadership, specifically with its emphasis on feedback and understanding of classroom needs, bolsters perceptions of collective teacher efficacy and therefore student outcomes. Voelkel (2019) used structural equation modeling to show the predictive power of transformational leadership on professional learning communities, which in turn showed statistically significant predictive power of perceptions of collective group competence and collective task analysis, both considered to be latent variables for collective teacher efficacy. At a more granular level of analysis, Voelkel's (2019) research found that leadership actions that enable others to act were a key predictor of success in both professional learning communities and of staffs' efficacy perceptions. Goddard et al. (2020) designed and measured school principals' self-efficacy for instructional leadership and found it to have a significant impact on collective teacher efficacy. Principal self-efficacy in turn, according to the authors, had an indirect impact on student achievement by increasing perceptions of collective efficacy.

The reciprocal nature of CTE-antecedent influence remains difficult to distill despite the findings shared above. Voelkel (2019) acknowledges among the limitations of his study the fact

that district leadership placed a strong emphasis on professional learning communities. This in turn may have suppressed the influence of CTE on professional learning community efforts. The greater the perceived collective efficacy within the group, the greater their willingness will be to persist in their joint work (Donohoo, 2017a; Donohoo 2018). Indeed, Goddard et al. (2015) stress the importance of understanding the impact team member interactions may have on collective efficacy beliefs when they suggest that future research focus on how educators in their various roles interact to improve student growth and CTE beliefs. Goddard et al. (2017) did exactly that several years later with a mixed-methods study. Goddard et al. (2017) supplemented the statistical heft of their study with the qualitative explanations derived from focus group interviews.

Research offers compelling connections between leaders who enable teacher leadership, collaboration, and other transformational practices and stronger perceptions of collective teacher efficacy (Consoy, 2020; Consoy & Parlar, 2018; Donohoo et al., 2020; Goddard et al., 2015; Voelkel, 2019). Donohoo et al. (2020) capture all of these leadership qualities under the overarching moniker of *Supportive Leadership*. Whether in analysis or the measurement tools, the research is clear for the practicing educational leader: designing, enacting, and refining school organizing behavior structures to optimize rational networks (Adams & Forsyth, 2006) between teachers, supporting collaborations toward goal consensus (Donohoo et al., 2020; Voelkel, 2019; Voelkel & Chrispeels, 2017), and embedding reflective practices in the daily enactment of educators' work builds collective teacher efficacy beliefs, and therefore, increases student outcomes through improved school culture.

Impact on Teachers

Donohoo's (2018) synthesis of the prevailing literature found that teachers in schools with strong CTE were more likely to persist through challenges, have a higher morale, have a greater sense of commitment to *finding a way*, and were more willing to try new things if it meant benefiting student outcomes. Ketelaar et al. (2012) studied teachers' sensemaking and

agentic identities during innovations, which could be considered disruptions. Even though the researchers did not specifically study collective efficacy, they note that a lack of collaboration impeded teacher resilience, leaving educational innovations to languish as perceived disruptions. It is reasonable to surmise that the lack of collaborative school structures and/or a middling collaborative school culture inhibited collective teacher efficacy and therefore the benefits of teacher resilience.

Resilience, persistence, and positive school culture as impacted by CTE can also be seen in factors like teacher stress and job satisfaction. CTE research points to connections between perceived CTE and higher levels of teacher satisfaction (Buonomo et al., 2020; Caprara et al., 2003; Jurado et al., 2019; Klassen et al., 2010). Salanova et al. (2014) found that collective efficacy is a significant predictor of flow at work. Studying small working groups, the findings of this study were consistent with the larger concept of *flow* in which complex tasks are matched with high skill levels, producing feelings of workplace happiness, optimized work experience, and full absorption into work. It is reasonable to conclude that flow, spawned by collective teacher efficacy, would lead to job satisfaction and potentially reduced stress.

Collective Efficacy in the Complex Organizational Environments of Schools

Increasing levels of interdependence when interacting within the contexts of emergent ambiguity contribute to organizational complexity (Fidan & Balci, 2017; Weick & Sutcliffe, 2015). Bandura (1993, 1997) suggests that schools function at an intermediate level of interdependency. He further explains the organizational and social complexity of schools, stating, “the functioning of the school system relies on joint responsibility for the academic and social norms of the system and hierarchical dependence on the adequacy of student socioeducational preparation in prior grades” (Bandura, 1997, p. 248). Stated simply, student outcomes are reliant on collective efforts within social systems, which in turn are also reliant on one another and influenced by external forces.

Aligned with social cognitive theory, reciprocal influences occur between perceptions of CTE and the interdependencies of the socioeducational school environment (Bandura, 1993, 1997). Guidetti et al. (2018) studied perceptions of work ability among 415 primary and elementary school teachers in Italy. Work ability is the total of the mental and physical resources needed to perform job tasks (Guidetti et al., 2018). It is logical to conclude that navigating with colleagues the academic and social responsibilities within the hierarchical demands of a school system is part of the teacher-perceived work ability. The researchers found that collective efficacy beliefs, by improving self-efficacy beliefs, positively and significantly improved teacher perceptions of work ability (Guidetti et al., 2018). Mediated by improved self-efficacy, collective efficacy influences, and is influenced by, the complex interdependencies of schools.

Linked and layered educator networks are composed of groups of individuals who influence and are influenced by one another, other groups, and the organizational environment that contextualizes their interactions (Fidan & Balci, 2017). Hargreaves and Fullan (2012) argue that teachers often associate in particular groups rather than as a whole school. The team provides a dynamic site at which individuals seek input, interpretation, and support from others (Ketelaar et al., 2012; Loughland & Ryan, 2020; Moolenaar et al., 2012), including school leadership (Bandura, 1993, 1997; Consoy, 2020; Consoy & Parlar, 2018). Guidetti et al. (2018) imply, based upon positive adjustments to perceived work ability, that collective efficacy in the context of schools may be improved by working in teams, sharing goals, generating insights into practices, and deepening understandings about the conditions of learning environments. Through the known sources of efficacy—mastery and vicarious experiences, as well as affective states and social persuasion (Bandura, 1993;1997)—the interrelating behaviors of individuals seeking input, interpretation, and support contribute to teacher perceptions of collective efficacy.

Social cognitive theory emphasizes agentic reciprocity in which individuals produce and are products of microenvironments within the overall school organization (Bandura, 1997). The belief systems of staff and school culture exert reciprocal influences on each other.

Organizational psychologists Weick and Sutcliffe (2015) argue that it is the job of culture to teach what works to agents within the organization. Teachers, who work with intermediate interdependence within rational networks of teams (Fidan & Balci, 2017), reciprocally shape organizational culture through their collective efficacy beliefs (Watzek et al., 2019; Yoon & Kayes, 2016), while the organizational culture shapes the networks, teams, and individual understandings of what works (Schein,1985; Weick & Sutcliffe, 2015). Yet, mainstream collective efficacy literature holds de minimis recognition for school-based educator teams, within which teachers' efficacy beliefs hold so much potential for positive school change.

The enabling condition of goal consensus allows teams to organize their joint efforts toward a common goal (Donohoo et al, 2020). When goal consensus is present alongside supportive leadership and structures that support embedded reflection regarding cohesive knowledge of teacher practices (Donohoo et al., 2020), the reciprocal influence of CTE strengthens collaborative work into a critical mass (Donohoo & Katz, 2020). In short it strengthens collective effort whereby individuals move from being grouped to acting as a group (Weick & Roberts, 1993). How those self-organizing efforts (Weick & Roberts, 1993; Weick & Sutcliffe, 2015) engage collective teacher efficacy has yet to be studied. The lived perspectives of group members regarding group behaviors are largely absent in the collective efficacy literature, leaving a gap between theory and practice for the change-agent practitioner.

Emergent Group-Level Attributes

Bandura (1997) is clear about the social dynamics of CTE when he states, "perceived collective efficacy is an emergent group-level attribute rather than simply the sum of the members' perceived personal efficacies" (p. 478). Emergent group-level attribute denotes agentic and dynamic interrelationships between members of a group and between groups themselves. It is important to hold in tandem Bandura's concept of an emergent, group-level attribute and his warning against conceptualizing collective teacher efficacy as a unitary descriptor for the whole school (1997). Bandura's combined statements imply that efficacious

and non-efficacious entities exist in both efficacious and non-efficacious schools; team-level interactions are critical to pervasive and persistent collective efficacy beliefs. Despite Bandura's declarations, relatively few CTE studies have explored the microenvironment of the school-based team. Historically, however, some studies have explored patterns of team-level attributes that are relevant, if not directly related, to CTE.

Studies have found strong influential relationships between professional learning communities (PLCs) and collective efficacy (Gray & Summers, 2015; Voelkel & Chrispeels, 2017; Voelkel, 2019). Voelkel and Chrispeels (2017) and Voelkel (2019) focused heavily on quantitative methods resulting in a directional determination that PLCs influence CTE. The reciprocal influence was not accounted for and the magnitude of influence PLCs exerted on CTE may have had much to do with the research sites' emphasis and support of PLC structures and use. This would align more with the assertion that conditions such as instructional leadership, job embedded reflection, and goal consensus increase the perception of collective teacher efficacy (Gray & Summers, 2015; Donohoo, 2017b; Donohoo & Katz, 2020; Donohoo et al., 2020). It is likely that the environmental and relational conditions created by PLCs contribute to a collective's mastery experience, which in turn increases the likelihood that teams will persist in using productive protocols and norms associated with PLCs, and therefore contribute to teams' overall perceptions of efficacy.

Salanova et al. (2014) explore the channel model of flow. Though it is not specific to education, the psychological concept of *flow* at work is characterized by employee happiness, satisfaction, and optimal cognitive challenges that combine to create high levels of motivation (Salanova et al., 2014). Salanova et al. (2014) studied 52 small working groups over a period of time as they engaged with different tasks. The researchers found that collective efficacy was a predictor of work happiness, absorption into the task at hand, and optimal performance, all of which describe the concept of flow (Salanova et al., 2014). The researchers found that the relationship between collective flow and collective efficacy is reciprocal. Social cognitive theory

might suggest that collective flow contributes to a team's sense of mastery experience, which in turn would support their perception of collective efficacy. Using small groups as the unit of analysis allowed for the confirmation that challenging a group at their skill level builds collective efficacy. Salanova et al. (2014) emphasize the need for more research into the ways that teams interrelate as contributing factors to both collective efficacy and collective flow.

Social networks (Berebitsky & Salloum, 2017; Moolenaar et al., 2012) and organizing school structures (Brown et al., 2019) impact collective efficacy. Using social network analysis, Moolenaar et al. (2012) found that stronger teacher networks, regardless of their types, were predictors of stronger CTE beliefs and therefore stronger student outcomes. According to the authors, social capital theory predicts that deeper interactions between teachers will promote perceptions of collective teacher efficacy (Moolenaar et al., 2012). These findings were later refocused on urban middle schools implementing mathematics reform by Berebitsky and Salloum (2017). Using a mixed-methods study emphasizing structured interviews, Brown et al. (2019) found that communication, learning, supporting roles, and stress management enhanced collective efficacy, which emphasizes the need for strong professional relationships in support of school success. Workplace social networks, such as school-based educator teams, play a role in the formation of collective efficacy beliefs, yet the complex organizing behaviors of those teams has received little academic attention unless mentioned in the limitations of a study. From an a priori perspective, mindful organizing, as a complexity theory, might strengthen the conceptual bridge between influences of school-based team member interactions and collective efficacy beliefs.

Mindfully Organizing Collective Teacher Efficacy

Mindful organizing can be described as the act of focusing the scarce organizational commodity of collective attention toward the organization's most pressing needs via a preoccupation with failure, sensitivity to operations, reluctance to simplify, deference to expertise, and a commitment to resilience (Weick & Sutcliffe, 2015). Because each of these

attributes describes a type of mindful interrelating toward achieving a common goal, they provide an a priori framework for examining the emergent behaviors of efficacious groups. Mindful organizing stems from a supportive leadership entity and its efforts to organize such that those closest to the origin of work are empowered to find mistakes, solve problems, and make adaptations (Weick & Roberts, 1993; Weick & Sutcliffe, 2015). Weick and Sutcliffe's (2015) descriptions of mindful organizing align with Donohoo et al.'s (2020) enabling conditions of collective teacher efficacy, specifically *empowered teachers* and *supportive leadership*. Indeed, Donohoo et al. (2020) contend that supportive leadership responds to circumstances by organizing opportunities that empower teachers, surface cohesive knowledge about what works and why, generate consensus for important goals, and ensure teacher teams reflect on praxis in a mirror of evidence to rethink practice. Further review of the mindful organizing attributes illustrates conceptual compatibility with the sources and enabling conditions of collective teacher efficacy.

Counterintuitively complementary to goal consensus and cohesive teacher knowledge, teams that have a preoccupation with failure build awareness for what it might look like when what is expected begins to fail (Weick & Sutcliffe, 2015). Successfully organizing to find failure in its earliest emergence, and likely its smallest form, is referred to by Weick and Sutcliffe (2015) as an "amazing act of positive organizing" (p. 54). Knowing what failure looks like and finding it quickly contributes to successful outcomes, and therefore is likely to activate mastery experience.

Teams with a sensitivity to operations have knowledge of what is actually happening rather than what is assumed to be happening (Vogus & Sutcliffe, 2012; Weick & Sutcliffe, 2015). Like cohesive teacher knowledge (Donohoo et al., 2020), sensitivity to operations means teams question if what has worked still works and in what circumstances it is working. These teams are also acutely aware of what other alternatives exist (Renecle et al., 2020; Vogus & Sutcliffe,

2012). That awareness speaks to vicarious experience, in which case, sensitivity to operations is likely to contribute to perceptions of collective teacher efficacy.

A reluctance to simplify means teams do not accept superficial answers (Vogus & Sutcliffe, 2012) or assumed wisdom (Renecle et al., 2020). Similar to embedded reflective practice (Donohoo et al., 2020), teams use data to challenge assumptions and continue learning. Katz and Dack (2013 suggest that when educator teams collaboratively challenge assumptions, they intentionally interrupt obstacles to learning. In short, a reluctance to simplify helps teams learn to be smarter. Vicarious experiences and social persuasion can challenge assumptions (Donohoo & Katz, 2020). Outside of education, Yoon and Kayes (2016) were able to demonstrate that team-learning behaviors have a moderating effect on perceptions of self-efficacy and perceptions of individual learning. When considered with the findings of Guidetti et al. (2019) that CTE positively influences teacher self-efficacy, in turn positively influencing perceptions of work ability, learning vicariously from others and/or being encouraged by others, such as supervisors leveraging social persuasion, can invigorate CTE.

Deference to expertise, like vicarious experience, is the acquisition of talent or skills from someone else who has the requisite knowledge necessary to meet the current or future tasks (Weick & Sutcliffe, 2015) regardless of hierarchy (Su, 2017). A sensitivity to operations may provide school-based educator teams with cohesive teacher knowledge. Reluctance to simplify teaches school-based educator teams what is actually needed. By leveraging vicarious experiences, deference to expertise is likely to stimulate teachers' belief in their potential capabilities to effect change.

As noted, increased perceptions of CTE have been shown to correlate with increased persistence despite teacher challenges (Donohoo, 2018). Outlining findings from extant psychological and educational research, Gibbs and Miller (2014) contend that teacher well-being and resilience is influenced by teachers' efficacy beliefs, both self and collective. Teams that mindfully organize accept that setbacks are inevitable (Vogus & Sutcliffe, 2012) and will

adapt practices to persist in spite of those setbacks. Surveying 57 start-up teams who participated in a regional business plan competition, Rauter et al. (2018) used social cognitive theory to develop a theory of team reflexivity suggesting that the ability of a team to learn from setbacks is linked to the way they collectively conceptualize setbacks. Teams that consider setbacks as negative or as failures learn less. Conversely, teams who consider setbacks as learning opportunities are more resilient (Rauter et al., 2018). An international team of researchers (Jurado et al., 2019) surveyed 500 high school teachers in several Italian provinces. The researchers found that teacher perceptions of professional efficacy, which includes self and collective efficacy, were negatively correlated with teacher burnout, and positively correlated with job satisfaction (Jurado et al., 2019). Resilience is more likely to yield success, or mastery experience. A commitment to resilience can therefore contribute to perceptions of collective efficacy.

Team Organizing Behaviors During Disruptions

Perceptions of CTE are highly contextual and situational (Bandura, 1997), making school-based team-level perceptions of collective efficacy difficult to examine. The research challenge comes when comparing perceptions of CTE across different forms of disruptions, dilemmas, crises, or nonevents. The global COVID-19 pandemic has been a universal disruption to schools across the US and the world (Pressley, 2021). Each school and school district had to respond to the same crisis. The actions taken by schools to affect order-generating responses to the pandemic provide excellent examples of organizing behaviors during school disruptions. The fact that schools were all responding to the same global disruption provides contextual consistency for a more integrative study approach. To better contextualize the present research, it is necessary to understand both organizing and disruption as they relate to this study's conceptual framework of CTE, mindful organizing, and team-level interrelating.

Organizing is the process of generating patterns with the ability to establish order during times of flux (Weick & Sutcliffe, 2015). By extension, mindful organizing is the collective, active, and sustained effort to improve and maintain order (Weick & Sutcliffe, 2015) during times of disruption. It can therefore be argued that organizing occurs in liminal organizational contexts; organizing happens in the space between the old order and the new order. Within that liminal space is the emergence of ambiguous equivocality, confusion, and even innovation (Maitlis et al., 2013). In short, what occurs in liminal organizational spaces is disruption, and potentially, innovation.

Ketelaar et al. (2012) found that instructional innovation is more likely to be viewed as disruptive by educators if a sense of agency to influence the innovation is minimized. Rom and Eyal (2019) studied the responses of Israeli preschool teachers to national early childhood education policy changes. Equivocal interpretations and ambiguous professional identity created a sense of disruption among those within the sample (Rom & Eyal, 2019). Even the act of placing teachers into a team rather than allowing them to choose their own teams, as found by Krammer et al. (2018), may be viewed as disruptive and likely to erode self-efficacy for collaboration. Fullan (2020) argues that change, even if positive, will cause a period of performance implementation dip. If policy change, innovation, method of team selection, and just change itself can cause school disruptions, the COVID-19 pandemic could be considered a pan-disruption to school organizations. How teams respond to disruption and the beliefs they hold about their capabilities to learn from and resolve disruptions are reciprocally influenced.

Though few studies explore educator team responses to disruption, there is research regarding teacher responses to change. There is also research outside of education regarding team responses to various forms of disruptions. Both in- and out-of-field research are important to consider as they provide the broadest possible theory set for examining team behaviors that influence collective efficacy beliefs. Rom and Eyal (2019) found that when faced with policy disruptions, Israeli teachers who collaborated with others were better able to engage in

sensemaking, sense-taking, and sense-giving. The act of collaborating, or lack of it, contributed to teachers' feelings of professional achievement or professional defeat respectively (Rom & Eyal, 2019). Sensemaking is the process of explaining disruption in ways that allow for productive organizing to occur (Maitlis et al., 2013). Maitlis et al. (2013) found that negative emotions often drive the perceived need to make sense of a disruption. The ability of collectives to view disruptions as opportunities for learning contributes to their collective efficacy (Strahan née Brown et al., 2019; Yoon & Kayes, 2016). Team reflexivity, or the team's ability to make sense of setbacks, is a key mediator in a team's ability to learn from setbacks (Rauter et al., 2018). Rose and Norwich (2013) argue that collective efficacy contributes to collective commitment and motivation to resolve organizational dilemmas. Reciprocally, research has shown that deep connections between teachers increase perceived collective efficacy (Strahan née Brown et al., 2019). According to some findings, codifying collective cognition and action supports team learning (Kostopoulos et al., 2011). This is similar to the proposition of Ellis et al. (2014) that systemic reflection allows for team learning from both failures and successes. Teams, within and outside the education field, respond more successfully to disruption through collaboration in which they process talk and reflection into new group learning.

Also gleaned from the research are the similarities between these research findings and the allied theoretical framework of collective teacher efficacy and mindful organizing. Based on the examined studies, mindful organizing is considered a possible positive response to disruption. Mindful organizing actions may, in theory, activate the antecedents of collective teacher efficacy resulting in teachers' increased belief in their capabilities to effect change.

Summary

This literature review began with an exploration of the origins of collective teacher efficacy and their influence on collective efficacy antecedents. The review then provided a synthesis of collective efficacy's importance to the field of education, educators, and students based on its very prominent effect size on student achievement over other variables (Eells,

2011; Hattie, 2015), such as socioeconomic status and ethnicity (Goddard et al., 2017), as well as the influence collective teacher efficacy has been found to have on positive teacher and teaching behaviors (Goddard et al., 2015; Rose and Norwich, 2014).

This present study contributes to the existing collective efficacy literature by understanding school-based team member behaviors that influence CTE during a time of significant field and organizational disruption. Throughout this literature review, the need to study the influence of school-based team member interactions on teachers' collective efficacy beliefs by studying the school-based teams themselves has been established. Lastly, very little research exists in which perceptions of CTE within school-based teams was studied during organizational disruption. Although it was found that CTE positively influences educator resilience and persistence in the face of challenges (Bandura, 1993, 1997; Rose & Norwich, 2014), the literature review revealed that these claims are largely based on quantitative surveys of individual perceptions. Thus, the results of this study uniquely contribute to the extant collective efficacy literature by studying emergent team-level behaviors that impact CTE during a critical organizational disruption.

Based on the methodologies and findings examined, it becomes clear that school-based team-level behaviors influencing CTE beliefs are difficult to study with quantitative tools. Those tools require strong models (Tarka, 2018; Weiley, 2011), which are arguably best based on qualitative research. To illustrate how team-level behaviors may theoretically link to sources and antecedents of collective efficacy, the constructs of mindful organizing (Weick & Sutcliffe, 2015) were described and conceptually linked as an a priori explanation for the presence of collective efficacy based on the behaviors of effective teams during times of organizational disruptions (Edmondson, 2012; Stephens & Lyddy, 2016; Weick & Roberts, 1993).

After a systematic review of the CTE literature from 2000 through 2013, Ramos et al. (2014) echoed the calls of earlier reviews urging future CTE research to "enlarge the studies with qualitative approach and longitudinal nature" (p. 186). Wheatley's words from 2005 are as

strong now as they were when published, despite the clear benefits and expanded understanding of antecedents: “Why isn’t it clear how to use teacher efficacy research in teacher education?” (p. 748). Wheatley (2005) argues that scales and other instruments of CTE measurement retain some ambiguity due to the complexity of efficacy beliefs. In the next chapter, the ways in which multiple–case study research and focus group interviews can reconcile the research gap explored throughout this chapter, will be explained. Also explained in the next chapter are the ways in which the conceptual framework will account for antecedents at a team level of analysis, and how it will do so in a way that understanding can emerge when collective teacher efficacy is known to be present during school-based organizational disruptions.

CHAPTER 3:

METHODOLOGY

The problem studied was the lack of understanding among researchers and public school educators regarding collective teacher efficacy antecedents and the conditions that support it (Donohoo, 2018; Donohoo et al., 2020; Ramos et al., 2014; Tschannen-Moran et al., 2014). Collective teacher efficacy beliefs are a social phenomenon whose sources, identified in this study as antecedents, and conditions within the social microenvironments of schools (Bandura, 1997) are little understood. The purpose of this qualitative multiple-case study was to better understand collective teacher efficacy antecedents and supportive conditions through team member interactions within school-based teams in public elementary schools. The following research questions have been developed to address the research problem and purpose:

1) How can interactions among members of school-based teams within public elementary schools be used to understand collective teacher efficacy antecedents?
2) How can interactions among members of school-based teams within public elementary schools be used to understand the conditions that support collective teacher efficacy?

The conceptual framework of the study combines social cognitive theory (Bandura, 1977) and complexity theory (Fidan & Balci, 2017; Mendes et al., 2016; Tourish, 2019) to best contextualize collective teacher efficacy as a social phenomenon occurring within the social structure of schools. The research purpose and research questions of this study positioned school-based teams as the unit of study central to the case study design. The Collective Teacher Beliefs Scale (CTBS), developed by Tschannen-Moran and Barr (2004), was used for participant recruitment by identifying site schools with strong staff perceptions of CTE. From those schools, school-based educator teams were asked to participate in focus group interviews to gather descriptively thick (Bott & Tourish, 2016), contextually rich (Creswell & Guetterman,

2019) experiences of team-member interactions that contributed to various teams' sense of CTE. A multiple-case study (Yin, 2018) emerged in which the phenomenon of CTE was examined in the real-life context of school-based teams working together during the COVID-19 pandemic.

Site Information and Demographics/Setting

The present research design, a multiple-case study, used school-based educator teams as the case experiences explored. Focus group interviews were conducted in four public elementary schools in the central New Jersey area. To identify the four participating elementary schools, the researcher sent a letter regarding the study's purpose and methodologies to six school districts within the central New Jersey area. The letter invited the school districts to participate in the study. Five of the districts agreed to participate. Their participation allowed the researcher to distribute the Collective Teacher Beliefs Scale (Tschannen-Moran & Barr, 2004) to 18 elementary public schools distributed among the five participating school districts. All four schools selected were part of different public school districts providing distinct bounds for treating the teams from each school as a case distinct from the others. Using the recruitment results from the Collective Teacher Beliefs Scale (Tschannen-Moran & Barr, 2004), the selected site schools were all identified as having a staff with strong beliefs in their capabilities to effect positive change for their students; they had a strong sense of collective teacher efficacy.

Each site school represented the target population due to their identified CTE beliefs and the types of representative challenges faced by all elementary educator teams on a regular working basis. As schools in suburban communities, the demographics of each school, presented in Table 1, were shaped by the instructional programs offered and community composition in which each school exists. Though each school is part of a separate school district, the schools that participated each represented organizational circumstances typical of New Jersey elementary public school, and elementary public schools in general. The schools

from which the case-study teams were selected offered strong generalizable, and therefore credible, data for a much larger target population of public school educators.

Table 1

Demographics by Site School

Site Schools by De-identified Names	Percentage of Students within Demographic Categories			
	Total Student Population	Percent Economically Disadvantaged Students	Percent Ethnicity	Percent Students with Disabilities and English Language Learners
Elem 1	526	5.3	74.1 W; 14.4 H; 2.7 B/AA; 5.1 A; 3.4 +	19
Elem 2	443	12.6	76.5 W; 12.4 H; 3.4 B/AA; 3.8 A; 3.6 +	14.2[a]
Elem 3	525	4.6	53.1 W; 9.1 H; 1.1 B/AA; 34.9 A; 1.3 +	19.8
Elem 4[b]	167	26.9	75.4 W; 16.2 H; 5.4 B/AA; 0 A; 2.4 +	19.8

Note. Ethnicity descriptors: W = White, H = Hispanic, B/AA = Black/African American, A = Asian, + = 2 or More Races.

[a] No English Language Learners were reported in this data. [b] Elem 4 is the only school spanning grades PK–8. All other schools span grades K–5.

Using data from the New Jersey Department of Education NJ School Performance Report (NJDOE, 2021), Table 1 shows the demographics of each site school. The total school populations ranged between 167 students to 526 students. The percentage of students in each cite school who may have various opportunity gaps due to income inequalities ranged from 4.6% to 26.9% of the school population. Along with the breakdown of ethnicity for each site school, Table 1 also provides the percentage of Students with Disabilities and identified English Language Learners. The percentage of English Language Learners in each school was similar, ranging from 14.2% to approximately 20%. It is important to note that Elem 1 and Elem 3 host the elementary magnet programs for the English as a Second Language Programs, and Elem 3

also hosts several district Special Class Programs, which offer self-contained educational programming for students with similarly significant identified disabilities. Elem 2 has no specific magnet programs. Elem 4 was a single-school district requiring all services be provided within the school.

Participants/Sampling Method

Ravitch and Carl (2021) note the importance of selecting a target population that represents the research intentions of a study and are likely to provide data that will answer the research questions of a study. The interactions of school-based teams are the central focus of this study. Therefore, school-based teams in public elementary schools were the target population. Creswell and Creswell (2018) suggest four to five cases for sound case study research. Using a focus group interview format, four teams, selected for their efficacious performance representative of their respective efficacious schools, were interviewed. Team sizes ranged from three to seven participating members. The overall sample size was therefore 20 total teachers across four school-based, efficacious educator teams.

Purposeful sampling provided school-based teams from among schools determined to have strong perceptions of CTE. Within the site schools selected for the study, educator teams were designated as a function of grade-level assignment; the members of a team were on the same grade-level within the same school. Some cross-team membership was present on some teams represented by special education teachers who worked with students in different grade-levels. Most of the team composition for each focus group team interview was general-education teachers who taught students within the same grade level in the same school. Lastly, some teams may have interacted with instructional coaches, guidance counselors, principals, or other relevant specialists, but those individuals did not represent consistent membership within the team; therefore, they were not part of the focus group interviews.

Instrumentation and Data Collection

The study design required two types of instruments to be used: A scale to measure the collective efficacy beliefs of school staff was needed to find the sample of study cases from among the target population, and a focus group questioning route (Kreuger & Casey, 2015) was developed (see Appendix). To ensure the social phenomenon of CTE among teams remained the case being studied, the CTBS (Tschannen-Moran & Barr, 2004) was used to recruit participants from schools with a strong sense of CTE among the staff. Since this scale was only used for facilitating purposeful sampling, the overall study did not rely on statistical measures. This allowed the dissertation to remain as a qualitative, descriptive, multiple-case study (Bloomberg & Volpe, 2019). Once identified, focus group interviews with school-based educator teams were conducted.

Focus group interviews are a best fit method of data gathering if the research purpose seeks to surface ideas within the group that provide insight into the various factors that influence group member beliefs (Bloomberg & Volpe, 2019). The questioning route (Kreuger & Casey, 2015) was designed to illicit stories and perspectives from the teams interviewed about the types of interactions that took place among their members throughout the pandemic. To avoid interviewer biasing or leading answers, the questions within the questioning route were intentionally broad. Furthermore, the protocols allowed participants to explore how those interactions contribute to or detract from their perception of CTE.

Collective Teacher Beliefs Scale

The Collective Teacher Beliefs Scale developed by Tschannen-Moran and Barr (2004) was used to find efficacious elementary schools from whom purposive sampling identified efficacious school-based teams for potential recruitment into the study. Using Cronbach's Alpha, the Collective Teacher Beliefs Scale has a reliability of .97. The conceptual structure of the Collective Teacher Beliefs Scale has been proven reliable in a variety of settings and cultures (Ramos et al., 2014). The scale itself is 12 questions divided into six questions measuring two

dimensions of collective teacher efficacy, instructional impact, and student discipline. Given its frequent use within the CTE research, short question design, and overall ease of use, the Collective Teacher Beliefs Scale was an ideal instrument for finding efficacious schools. The original validating study for the Collective Teacher Beliefs Scale administered the questionnaire to a third of the staff in each of the participating schools (Tschannen-Moran & Barr, 2004). Assuming margins for invalid results were embedded in the study, a 25% valid survey response rate was established to identify elementary schools potentially eligible for participation.

Once schools with strong perceptions of CTE were identified, follow-up letters were sent and phone calls were made to specific schools whose demographics suggested a strong fit for the research purpose and offered strong transferability potential for the study. After commitments from the school leadership and district leadership were obtained, a meeting with the school principals was requested. Those meetings took place via Zoom® video conferencing. During those meetings, the study purpose and intentions were reiterated. The methodology was discussed. The importance of full disclosure, participant protections, and right to refuse participation at any time was reemphasized. After there was satisfactory mutual understanding of what school participation would entail, the researcher consulted with school leadership to find a specific school-based team within the site that exemplified CTE beliefs. The members of each of those teams were sent an email and a hard-copy letter distributed through the principal that detailed all the study specific-information outlined above. Again, voluntary participation and the right to end participation were emphasized. The actual focus group interviews were conducted via Zoom® due to pandemic restrictions at the time of data gathering.

Focus Group Protocols

Case studies are idiographic in their efforts to explore a phenomenon; they provide rich details through holistic accounts of participant experiences, thereby accounting for as many factors influencing the phenomenon as possible (Creswell & Guetterman, 2019; Patten & Newhart, 2018). Focus groups served as the main method of data collection for this study.

Focus groups, by design, use social contexts to surface perceptions about a particular topic (Patten & Newhart, 2018), in this case, the phenomenon of collective efficacy beliefs among educators. The questioning route (see Appendix) allowed for flexible interview structures in which participants could bring forward their own opinions or topics as it benefited the discussion and a deeper understanding of the experiences and contexts that influenced the complex social phenomenon of CTE beliefs. The questioning route ended with a request for a member of the group to act as a point of contact for the researcher. This person provided a member check by reviewing transcripts and participating in a follow-up interview used to ask clarifying questions about themes that had emerged, as well as any other contributions the participant believed was relevant after having read the transcriptions and discussed the potential themes. The member check interviews were recorded for later reference but not transcribed for coding.

Among several benefits of focus groups, Bloomberg and Volpe (2019) suggest that focus groups allow for participant observation as well as interviews. Since team-level interactions were the types of experiences this case study sought to surface, observing team behavior during the interviews was deemed to benefit to the research intentions. The focus group interviews were recorded for verbatim transcription. This allowed the researcher, as the focus group facilitator, to take observational notes that supplemented data gathered from the transcriptions. The combination of observational notes, verbatim transcriptions, and member checks provided a triangulation of data accuracy and analysis.

After each interview, the recordings were uploaded into Nvivo® qualitative data analysis software. The Nvivo® was used to transcribe the software. After the initial transcription was completed, it was compared with the audio file for accuracy and corrections for contextual nuance, grammar, or transcription errors were made.

Follow-Up Interviews

After the transcripts were corrected, a copy was sent via password-protected electronic file to the team point persons identified at the end of the focus group sessions. The point

persons performed member checks by reviewing the transcriptions for accuracy and clarifying any possible mistakes. The point person then clarified mistakes with the researcher via a Zoom® meeting. The researcher presented initial patterns found during the first reviews of the data. The point person also had the opportunity to ask follow-up questions and offer additional insights.

Data Analysis

By design, the four cases of efficacious educator teams found in four respective public elementary schools allowed for a cross-case synthesis (Yin, 2018) of the overall results. Yin (2018) suggests that a cross-case synthesis uses case-based approaches to surface emerging, within-case patterns. After tentative patterns were found in one case, the other cases were analyzed for “replicative relationships” (Yin, 2018, p. 196) of those same or similar patterns.

To facilitate pattern finding among the data, verbatim transcriptions of the four focus group interviews were coded using NVivo® coding software. Initially, the transcripts were casually indexed (Elliot, 2018) by CTE-enhancing team interactions and CTE-diminishing team interactions. Neutral statements—meaning statements made that may be important to the study, but that were not made with regard to any specific team interactions (Creswell & Guetterman, 2019)—were also coded. Another review of the data sought references indicative of mindful organizing behaviors among the teams. As patterns emerged within one case, they were cross-referenced with other cases for comparable emergence. After several reviews of the data, larger patterns were reviewed and checked against the literature.

While patterning, indexing, and counting the codes within the data can be important, Creswell and Guetterman (2019) encourage researchers to remain mindful of subtler and singular statements made that add context to the experience shared within the data as they can be the most insightful and relevant information gleaned. Such anomalies within the data also revealed what Yin (2018) describes as “dissimilarities” or “oddities” (p. 199). Furthermore, capturing those dissimilarities and oddities within the data allowed for later argumentation about

the most plausible “rival interpretations” (Yin, 2018, p.199) or supplemental interpretations. These practices were used to strengthen the trustworthiness of the overall research outcomes.

Limitations, Delimitations, Ethical Issues

The proposed study design focused on group dynamics of complex adaptive systems. To date, there are no known measures of CTE at the team level. This established the first and most challenging limitation for this study, and for collective efficacy research in general; efficacious teams are a difficult unit of study and elusive due to their limited sample size. The purposeful sampling of this study mitigated that issue by using the Collective Teacher Beliefs Scale (Tschannen-Moran & Barr, 2004) to identify efficacious schools, in which efficacious teams were likely to exist, with whom recruitment efforts were conducted. Consultation with school leadership provided the next layer of mitigation by identifying strong teams willing to be interviewed within the efficacious schools. Using multiple cases within the case study design allowed for patterns to be found across variant team conditions and compositions.

The proposed study was also limited in its size. According to Patten and Newhart (2018), typical case studies include four to five cases for investigation. Because those cases are distinctly bound in ways different from one another, the case study becomes a multiple-case study (Yin, 2018). The methodologies used in this study meet the aforementioned standards, which allows for greater transferability of findings to broader contexts (Bloomberg & Volpe, 2019). The use of focus groups maintained the case study numbers while adding 20 participants. Twenty is a small number of participants by quantitative standards, yet it is a significant number in qualitative studies.

The research design intentionally delimited the scope of inquiry to elementary educators. This delimitation served the feasibility of this study by limiting the various types of educator teams to study. This delimitation also improved feasibility due to the increased potential for team-level interactions at the elementary level; high school settings typically have less time allotted for teacher teams to collaborate. More importantly, the case study methodology required

bounds to be set for the cases studied. The research purpose lent itself to focusing only on teams within schools identified as having positive perceptions of collective efficacy. The cases studied were efficacious, school-based educator teams whose interactions would shed light on the sources and conditions in fluencing collective efficacy. The study design delimited teams that lacked positive perceptions of CTE by delimiting schools that had not scored high on the Collective Teacher Beliefs Scale (Tschannen-Moran & Barr, 2004), and further by consulting principals on the identification of strong teams within the efficacious schools they lead.

Professional learning and leadership were not the focus of this study and, therefore, they also represent delimitations of the study design. The collective beliefs of educators are greatly impacted by professional learning experiences as shown by Donohoo (2017b), as well as Loughland and Ryan (2020). Those same beliefs are also greatly impacted by school leadership (Goddard et al., 2017; Voelkel, 2019). Though not the focus of this study, these topics were considered as having contextual influence on the interrelations of efficacious team members.

To mitigate ethical issues, voluntary and informed consent to participate was deeply considered and preserved in every aspect of this research. Each school, each team, and each individual on each team had the full right to refuse participation at any time. Clearly stipulated within in all written documentation and spoken iterations was the option to stop participating without negative consequence. Likewise, written documentation and spoken directions shared the research problem, purpose, and design while specifying the intentions of confidentiality and how confidentiality would be preserved.

As discussed in the delimitations section, the study design did not include schools or teams with negative perceptions of collective efficacy. This delimitation removed from the research design the potential for negative stigma of a poorly performing team or a poorly performing school. Maintaining confidentiality of the schools and the participants further minimized any harm that other teams or schools might feel from not being asked to participate.

To maximize benefits for the school district, any school that had enough surveys completed to create a valid Collective Teacher Beliefs Scale (Tschannen-Moran & Barr, 2004) score was offered feedback and suggestions if requested for professional learning experiences that would enhance their specific results. Additionally, the feedback could be given to school leadership and the School Improvement Panels who are responsible for designing school-wide professional learning experiences. Lastly, the teams that participated in the focus group interviews reflected on their interrelations that enhanced perceptions of CTE. Doing so provided opportunities for teams to cement those interactions as a set of mastery experiences (Bandura, 1977, 1997), which in turn could increase their own sense of efficacy to consistently engage in the type of interactions that swell beliefs in their ability to successfully navigate challenges and effect positive change.

Justice, or who bears which burdens and why (Department of Health, Education, & Welfare, 1979), was addressed by minimizing harm and maximizing benefits as described above. Teams who chose to participate in the study gave up time for their participation. In return, the interview structure and follow-up interviews provided the teams with professional learning experiences that may further enhance their professional practices. To support the cross-pollination of ideas and minimize injustices to teams not selected to participate, participating schools had the option of a follow-up professional learning session on teacher leadership and sharing the influences of their successes with others.

Trustworthiness

The trustworthiness of any qualitative study is established through credible practices and rigorous research design (Ravitch & Carl, 2021). Such practices and designs create a conduit that faithfully translates participant experiences into study findings. The more closely the findings of a study represent the experiences of the participants, the stronger the credibility of the study is, and, likewise, the greater the study trustworthiness will be. Academic standards

(Creswell & Guetterman, 2019; Ravitch & Carl, 2021) suggest that trustworthiness is established through confirmability, transferability, and dependability of a study.

Confirmability

The multiple-case study design used supports a positive collective efficacy bound, meaning there was no need for comparison groups that lack efficacy. This minimized the potential for participants to feel a need to provide what they believed the researcher would want to hear. The use of focus groups from schools with strong perceptions of collective teacher efficacy provided for a more flexible interview structure in which participants were free to bring up topics that lay outside of the researcher's topic schema (Bloomberg & Volpe 2019). According to Bloomberg and Volpe (2019), focus groups bring together research participants with similar experiences or social structures, in this case elementary public school teachers on the same school-based teams. Bandura (1997) suggests that interviewing teams as a whole can be unwieldly, yet interviewing a group may reduce any possible intimidation felt by a singular teacher during a one-to-one interview.

Overall, the research questions elicited data that was nonevaluative for any individual teacher or the school-based teams of which they were members. The semistructured interview questions asked of each focus group elicited stories and experiences of interactions and stories of circumstances that impacted their sense of collective efficacy. The interview structure along with the precautions taken add credibility, integrity, and trustworthiness to the data-gathering process.

The theoretical framework of this study implies that team-level interactions will influence CTE. Efficacy beliefs and interactions among educator groups have been shown to have a reciprocal influence on one another (Berebitsky & Salloum, 2017; Moolenaar et al., 2012). Little is known, however, about the types of interactions that influence perceptions of collective efficacy. Due to the abundance of quantitative efficacy research, less is known about the impact that team members' perceived interrelations have on educators' collective efficacy beliefs. To

determine credible answers to the research questions required research designs that bracket the researcher's own experiences with efficacy-building team interactions, yet allow for enough flexibility that multiple perspectives and contradictory points of view could find firm footing within the data analysis.

Focus group interviews provide flexible interview structures that give voice to many people (Brinkmann & Kvale, 2015). The dynamic nature of a focus group interview limited, and therefore bracketed, researcher experiences of efficacy-building team interactions from filtering into the interview process. As a staff developer by profession, the researcher's group facilitation skills were in demand during the focus group interviews while personal research perspectives were not needed at all. Verbatim transcriptions, member checks, and one-on-one follow-up interviews provided accountability and accuracy of data as it was collected, later coded, and eventually interpreted.

Transferability

The trustworthiness of a study is impacted by its transferability—the study's broader applicability beyond the bounded context in which it was studied (Bloomberg & Volpe, 2019). The study design was specific to the population of public school elementary teams. The theoretical framework, however, allows for the concept of school-based teams as knowledge teams to be transferred to the broader context of any knowledge team. Knowledge teams are small groups within an organization whose combined efforts receive, process, and transmit unique organizational knowledge in pursuit of an organization's goals (Yeo, 2020). Although the settings may be different, the knowledge team experience is likely to be highly transferable.

Consistent with the data collection designs, the focus group interview structure provided strong, descriptively rich accounts of team-member interactions that contributed to perceptions of collective teacher efficacy. Recording that data and scrubbing the transcripts for grammar, reference attribution, and reference context provided accurate, first-hand accounts in the common parlance of teachers. That common language, and the descriptive stories it conveyed,

was the source data analyzed. Use of participant quotes and descriptive exemplification of experiences allowed for broader applicability and adaptability into a wide array of settings beyond the sample population.

Dependability

The stability of the data collected to remain credible over time is important when establishing trustworthiness (Ravitch & Carl, 2021). The research design of this study required gathering data about team interactions, as well as data from school-based teams about their interactions. The interview protocols created an interview atmosphere that promoted a candid conversational exploration of the types of team interactions and organizing behaviors that impacted CTE. As Kreuger and Casey (2015) point out, focus group interviews seek emergent ideas from the group that provide insight into the factors that influence opinions. Therefore, the use of focus groups was a dependable mechanism to gather emergent perspectives from experiential stories that shape teacher beliefs about their collective ability to positively impact student outcomes.

Summary

CTE is the property of a school, yet it influences, and is influenced by, the school's microenvironments and social contexts (Bandura, 1997). To best understand how beliefs about collective teacher efficacy are shaped within the complex social interactions of elementary school-based team members, a descriptive multiple-case study methodology was used to facilitate the proposed research. Elementary public schools in central New Jersey characterized as having strong perceptions of collective teacher efficacy were identified by administering, with permission, the Collective Teacher Beliefs Scale (Tschannen-Moran & Barr, 2004). To gather descriptively rich (Creswell & Guetterman, 2019) and diverse accounts of interactions among members of school-based teams in public schools, focus group interviews were conducted in accordance with the interview protocols provided in the Appendix.

This chapter detailed the methods used for purposeful sampling while clarifying the sample alignment as relevant to the design of the research questions. Authentication of data gathered and data analysis was conducted through multiple layers of member checks, just as the coding itself was conducted through multiple layers of analysis and pattern finding. The methods described throughout this chapter demonstrate the methodological potential to generate a holistically contextual, descriptively rich accounting (Patten & Newhart, 2018) of the ways in which school-based team member interactions within public elementary schools impacted educator beliefs about CTE.

Qualitative research designs emerged as the research process unfolded. This chapter described the intentions and processes used to find relevant study samples and credible experiential school-based educator team data. Those intentions and processes were explicitly aligned to the research problem, research purpose, and research questions. This chapter established trustworthiness as rooted in the study designs (Ravitch & Carl, 2021). Limitations, delimitations, and ethical concerns were also embedded within the research design, and explicated where appropriate. With the research intentions detailed, justified, and aligned to the theoretical framework of the study, chapter four details the results derived from the data analysis methods previously described.

CHAPTER 4:

RESULTS

The problem studied was the lack of understanding among researchers and public school educators regarding collective teacher efficacy antecedents and the conditions that support it (Donohoo, 2018; Donohoo et al., 2020; Ramos et al., 2014; Tschannen-Moran et al., 2014). CTE beliefs are a group-level attribute embedded among the social forces of school-based microenvironments (Bandura, 1997). There exists, however, relatively little understanding of how those social forces shape efficacy beliefs. The purpose of this qualitative multiple-case study is to better understand collective teacher efficacy antecedents and supportive conditions through team member interactions within school-based educator teams in public elementary schools. Within this study, *CTE antecedents* describes the four sources of CTE as developed by Bandura (1977, 1993, 1997, 1998). Conditions that support CTE describe the personal, social, and situational factors that contextualize the CTE antecedents (Bandura, 1997). The following research questions were developed to address the research problem and purpose:

1) How can interactions among members of school-based teams within public elementary schools be used to understand collective teacher efficacy antecedents?
2) How can interactions among members of school-based teams within public elementary schools be used to understand the conditions that support collective teacher efficacy?

To answer the research questions, a multiple-case study was conducted in two phases. In phase one, the participant search, the researcher identified four elementary public schools with strong collective teacher efficacy beliefs using results from Tschannen-Moran and Barr's (2004) Collective Teacher Beliefs Scale (CTBS). The CTBS was sent to 18 total public elementary schools across five school districts in central New Jersey. Schools with a survey participation rate of 25% or higher were further examined for the strength of their CTBS scores. The 25% participation expectation was based on Tschannen-Moran and Barr's (2004) original

study, which administered the scale to approximately one-third of any participating school. Assuming some invalid responses from those surveys, 25% valid submissions was a reasonably derived participation threshold for this study. The survey responses for schools with valid submission rates were further examined for higher survey averages, which would indicate strong collective teacher efficacy beliefs within the school. Four elementary schools were identified within four different public school districts in central New Jersey. The principals of those schools were contacted, and, after a discussion defining and describing collective teacher efficacy, the principals were each asked to identify a team of educators within their schools who worked together throughout the COVID-19 pandemic and exemplified collective teacher efficacy beliefs. This process yielded the four participating, unique, and efficacious school-based educator teams who were the unit of analysis for this study; they were the four cases explored in this multiple-case study.

Data collection was conducted using focus group interviews with each school-based educator team. Less formal than traditional interviews, the focus group interviews were semistructured and designed to elicit as much participant response as possible (Kreuger & Casey, 2015; Liamputtong, 2011). The more open format of the focus group protocol allowed for a more comprehensive exploration into participants' experiences. As suggested by Brinkmann and Kvale (2015), participants were expressive, presented multiple points of view, and offered exploratory examples of their efficacious team interactions, which had occurred throughout the pandemic. The interviews were recorded, transcribed, and coded. Coding was done through a multistep process that started with casual coding then continued with progressively deeper coding for the presence of the five mindful organizing (Weick & Sutcliffe, 2015) attributes and the five Enabling Conditions of Collective Teacher Efficacy (EC-CTE) (Donohoo et al., 2020). Lastly, a review and subsequent coding was conducted for rival or complementary explanations for interactions described within the four data sets that indicated influence of the efficacy beliefs of a single case or multiple cases.

Analysis of the codes was first done based on individual cases then conducted as a cross-case synthesis, allowing for outlier experiences to be considered alongside emerging multiple-case patterns (Yin, 2018). Once the codes were established, NVivo® software was used to find in-case code frequencies and conduct a case-by-case review of the specific references each case surfaced for each code identified. Lastly, the cross-case synthesis followed the same procedures but explored the data across all cases. These last steps allowed for both the identification of case-specific outlier experiences and the surfacing of team behaviors that referenced the a priori conceptual link between EC-CTE and mindful organizing underpinning the theoretical framework of this study.

A detailed overview of the researcher's data analysis procedures is provided in the next section of this chapter. The rest of the chapter is written in the order of the overview. A review of the codes and data is presented, after which the results of each case are presented individually. Once the substance of each case is presented, the cross-case synthesis provides both multiple-case results and results unique to individual cases. It is important to note, two additional codes were identified during the coding process, heedful interrelating (Stephens & Lyddy, 2016; Weick & Roberts, 1993) and psychological safety (Edmondson, 2019). Furthermore, drawing on the foundational work of Weick and Roberts (1993), heedful interrelating was identified as the parent code of three subordinate codes identified in Table 2. Each explanatory concept will be defined and described in the next section. It is helpful to note here that heedful interrelating explains the perceived social forces within the group and how the group then designs their interactions to support those perceived forces (Weick & Roberts, 1993). Psychological safety refers to the perceived group norms that allow members to be comfortably vulnerable among the group such that they can freely raise concerns and carry out the complex tasks associated with teaching during a pandemic crisis.

From the four separate focus group interviews, a total of approximately 162 minutes of data was gathered. Each individual focus group was conducted for an average length of 40

minutes, ranging from approximately 35 minutes to approximately 47 minutes. Across all four cases, 932 text references were coded. The references varied in length, description, and context. The gathered data, coding process, and analysis provide descriptively rich and contextually complete results through which each case retains the fullness of its team experience while finding case-based and cross-case patterns.

At times, the frequency of references will be noted for various codes in each case. Aligned with Yin's (2018) prescribed precautions, those frequencies are provided to show the potential for contextual relationships among coded references and between cases. There is no suggestion within this analysis of treating these connections as correlating variables. The relationship between frequencies is notable because the experiential evidence captured in the focus group interviews shows social priorities for team organizing behaviors. The frequencies provided a compass for the data analysis; they offered a direction in which the analysis could set off in pursuit of potential patterned conceptual and contextual links between the identified codes.

Analysis Method

It should be noted that the researcher is a district-level leader employed in a public school unaffiliated with any of the teams, schools, and districts that agreed to participate in this study. The researcher's experience, however, provided valuable insight into the nuanced dialogues that took place during each interview. The researcher's familiarity with public schools as organizational entities allowed for interpretation of professional jargon, and clarity of contexts specific to the lived classroom experience.

All four focus group interviews were recorded via Zoom®, then uploaded into NVivo® software for transcription. After the initial software transcriptions were completed, they were manually reviewed for grammatical, semantic, and contextual accuracy. A third review was then conducted to de-identify participants and schools. Once the transcripts were fully scrubbed for

accuracy and confidentiality (Creswell & Guetterman, 2019), they were loaded into the NVivo® coding software.

Casual coding was conducted to look for initial patterns among the data gathered. The casual coding provided an opportunity to search for experiences indicative of mindful organizing contained within the data sets. It also allowed for a more objective search for rival phenomena (Yin, 2018) contained within the data, as well as any possible explanatory statements that might be relevant to the overall analysis.

Once the casual coding was completed, the researcher sent a password-protected, full version of each interview transcription to the respective point person or persons identified during the focus group interviews. Those persons were asked to review the transcript for accuracy and authenticity and to identify any questions or points of greater interest they may want to expand upon. A Zoom® meeting was set up with each team's point person(s) to conduct the member check. During each meeting, the sessions were recorded for later reference. The recordings were used only for the purpose of clarifying statements or references within the transcripts. The broader patterns found during the casual coding were discussed and each focus group affirmed the accuracy of those patterns based on their group's interview and their own further impressions of their team interactions. The completed member checks allowed for the formal coding to begin.

The initial examination of the data for all four cases yielded 12 codes. Two of the codes, EC-CTE and Mindful Organizing, were considered parent codes. Table 2 shows EC-CTE and Mindful Organizing were identified as parent codes for five subordinate codes each. Subordinate codes were identified using relevant research described in the literature review. Aligned to the theoretical framework that supports the present research questions, transcript references exemplifying any of the five EC-CTE and any of the five Mindful Organizing attributes were coded accordingly.

To maintain objectivity when searching for unexpected findings, additional reviews of the data were conducted, paying close attention to text that had not been coded, then again reviewing previously coded text with lenses adapted for rival or complementary patterns found. Those subsequent reviews surfaced group experiences that strongly referenced, emphasized, or contextualized other references within group norms, give-and-take contributions, equitable professional effort, and strong comfort to be vulnerable with team members. Using relevant literature related to organizational and team performance, the newly found patterns were identified as the parent codes Heedful Interrelating (Stephens & Lyddy, 2016; Weick & Roberts, 1993) and its subordinate codes, as well as Psychological Safety (Edmondson, 2019). Table 2 shows all 17 codes along with explanatory statements serving as a brief definition for each code and an example statement from among the four case data sets that was determined to have exemplified the type of references indicating the presence of the code identified.

Table 2

References Code Explanations and Example Statements

Code	Explanatory Statement	Example Statement
Enabling Conditions of Collective Teacher Efficacy	School characteristics associated with CTE that influence the strength of its presence among school staff (Donohoo et al., 2020).	"I think we discuss [our failures]." "We talk about it." "Then we find a way to make it right. You know? How do you take that failure to turn into a success? That's what's so strong about all of us." (Elem 1)
Embedded Reflective Practice	The collaborative process used by teacher teams to examine outcomes and inform their work (Donohoo et al., 2020).	"We self-reflect a lot, like . . . after we've taught certain math topics, [we discuss], what if next year we rearrange some things, or go back and we make notes for ourselves?" (Elem 1)
Supportive Leadership	The actions of formal and informal leaders that insulate staff from distractions, celebrate staff	"And when we asked, like . . . 'Hey, I think if we had this, we could [improve outcomes] with it,' within reason, we

Code	Explanatory Statement	Example Statement
	successes, and provide resources needed to achieve desired outcomes (Donohoo et al., 2020).	were supported and I do feel effective." (Elem 4)
Empowered Teachers	The extent to which staff have opportunities to lead and exert influence within the school (Donohoo et al., 2020).	"So yeah, [administration is] willing to hear, 'What can I do?' And then I was also encouraged to get on the curriculum committee this summer. Let your voice be heard." (Elem 2)
Goal Consensus	The degree of consistency among staff in perceived expectations and desired outcomes (Donohoo et al., 2020).	"Our goal is that we're reaching out to the children and they're successful based on what we have to give them." (Elem 3)
Cohesive Teacher Knowledge	Teacher knowledge of the practices used by one another and agreement about which are best practices (Donohoo et al., 2020).	"We gift to each other what we've done in class. And even if we elaborate on it . . . [using a mock dialogue] 'Hey, look what you gave me! I elaborated on it.' 'Oh, I'll try it next time.' It's a constant back and forth and adding on to what we're already doing, so you have the success." (Elem3)
Mindful Organizing	Group interactions that prioritize collective attention and adaptation to maintain reliable outcomes (Weick & Sutcliffe, 2015).	"We needed a working plan, and we got one quickly, and we did a really good job with that." (Elem 2)
Preoccupation with Failure	Attending to small changes such as those in outcomes or circumstances, and preventing them from becoming larger problems (Weick & Sutcliffe, 2015).	"I think we're constantly failing and reevaluating and readjusting." (Elem 4)
Reluctance to Simplify	Resisting simple or assumed explanations, occurrences, or attributions for outcomes (Weick & Sutcliffe, 2015) means teams frequently discuss new ways to accomplish everyday tasks (Sutcliffe, 2018).	"Every day we talk about something we need to fix." (Elem 1)

Code	Explanatory Statement	Example Statement
Sensitivity to Operations	Awareness of what is actually taking place rather than what is assumed to be or should be taking place (Weick & Sutcliffe, 2015).	"So, we send out a newsletter [to parents] on Fridays about what we learned that week, what we've taught . . . We put our own spin on [what we each taught] because we're autonomous. But . . . we also keep [the objectives] pretty much the same . . . so that all of our students collectively are getting what they need. We feel confident in that." (Elem 2)
Commitment to Resilience	A belief that errors or unexpected events will not disrupt performance characterized by team learning, trust, and imagining new ways of achieving outcomes (Weick & Sutcliffe, 2015).	"We had a job to do, and we were going to do it!" (Elem 3)
Deference to Expertise	Finding and relying on expertise that emerges during a given circumstance from those closest to the origin of the circumstance (Weick & Sutcliffe, 2015).	"I think we all have our strengths, and everyone knows what their strengths are, and that's how we use each other." (Elem 1)
Heedful Interrelating	Individuals believe they are members of a group, believe they should contribute to that group, and believe they are accountable to that group. Weick & Roberts, 1993)	"On a staff level, you know . . . we're able . . . …to be more in tune with what's going on in each other's lives. . . . There is a little bit more of an investment in each other." (Elem 4)
Representation of Perceived Social Forces	The perception that individual actions are part of a larger, connected, and intentional whole in which others perceive the same connection exists (Weick & Roberts, 1993).	"It's definitely a family. To me, this is my second family for sure." (Elem 1)
Contribution to Perceived Social Forces	Group members perceive they have a contributive responsibility to the group (Weick & Roberts, 1993).	"My success, I feel, is our success, and their success is our success." (Elem 3)

Code	Explanatory Statement	Example Statement
Subordination to Perceived Social Forces	Group members are willingly accountable to the group based on the perceived rules by which the group organizes itself (Weick & Roberts, 1993).	"We share any type of success that we deem fit as a success and share it with the others so we could all be successful in our own way." (Elem 3)
Psychological Safety	Belief among the group that the work place is safe for interpersonal risks (Edmonson, 2019).	"It's just, we're vulnerable enough to admit when something is hard and it doesn't escalate into harder. It's 'let me aid you in that.'" (Elem 2)

Note. Parent codes for EC-CTE, Mindful Organizing, Heedful Interrelating, and Psychological Safety appear left aligned. Indented codes under the parent codes represent the respective subordinate codes to the parent codes.

Within the theoretical framework underpinning this study, EC-CTE and mindful organizing were conceptually braided into an a priori construct linking mindful organizing as a possible social influence of CTE beliefs. Reasonably, coding was conducted again to look specifically for experiences that described the five behaviors of the parent code, Mindful Organizing: Preoccupation with Failure, Reluctance to Simplify, Sensitivity to Operations, Deference to Expertise, and Commitment to Resilience. As represented in Table 2, both the EC-CTE and Mindful Organizing were identified as the parent codes with their five component conditions or behaviors identified as respective subordinate codes.

It should be noted that some statements made during the data gathering had multiple codes assigned to them. For example, a teacher from Elem 2 stated:

> Our feedback is solicited and listened to . . . if we say, "we needed to adopt [a change from the curriculum], it was an unrealistic expectation to do X, Y, and Z." [Administration is] like, "Great! What did you do? How did that work out for you?" Not like, "Oh my gosh!

> You didn't do it? That's a problem!" So, I think that's a level of respect and professionalism.

The expressed concern regarding unrealistic expectations implies Preoccupation with Failure; the teachers are identifying a curricular fail point prior to or early in its implementation and offering mitigating resolutions, which is in keeping with Weick & Sutcliffe's (2015) conceptualization of this mindful organizing trait. The statement also indicates school leadership supports the team's preoccupation with failure and empowers their self-organizing efforts toward resolutions. According to Arzonetti-Hite and Donohoo (2021), Supportive Leadership denotes the filtering of distractions from staff as well as celebrating their successes. Arzonetti-Hite and Donohoo (2021) also suggested that Empowered Teachers denotes encouragement from school leaders, formal and informal, felt among staff to address needs as they arise. Thus the statement was also coded as Empowered Teachers and Supportive Leadership. Aligned to Weick & Sutcliffe's (2015) examples of Reluctance to Simplify, the statement exemplifies the team's unwillingness to dismiss problems as belonging to someone else or to assume that the curriculum challenges would resolve on their own. Thus the statement was coded with Reluctance to Simplify. Lastly, the statement ends in such a way that shows the team's perception of administration as willing to defer to and learn from the professional expertise of those closest to the origin of work, the teachers. Commensurate with Weick and Sutcliffe's (2015) descriptions of Deference to Expertise, the quote shows the nature of the teachers' work experience is respected by their organizational leaders.

These overlapping codes are significant in that they illuminate the conceptual link between mindful organizing and the enabling conditions of collective teacher efficacy. Whether overlapping or uniquely coded, this statement also exemplifies the rich complexity of qualitative data; the subtle significance and relatability in small details of such statements is arguably as important as is the frequency of specifically coded statements (Creswell & Guetterman, 2019)

and the amount of interview content that specific coded statements represent within the data set.

The previous rounds of coding surfaced experiences possibly described by psychological safety (Edmondson, 2019; Nembhard & Edmondson, 2011; Newman et al., 2017) and heedful interrelating (Daniel & Jordan, 2015; Stephens & Lyddy, 2016; Weick & Roberts, 1993). Psychological safety is a belief within work groups that interpersonal risks—such as sharing new ideas, questioning old ideas, and expressing concerns—are valued within trusting, respectful, and candid work relationships (Edmonson, 2019). The relevance of psychological safety to mindfully organized and efficacious team performance is realized among group members uninhibited by "interpersonal fear" (Edmonson, 2019, p. XV; Renecle et al., 2020). Because psychological safety provides team members with the comfort to be vulnerable, to try new things, and to explore failed ideas, it is reasonable to conceptually associate psychological safety's presence within a team as supporting EC-CTE's embedded reflective practice, as well as mindful organizing's deference to expertise and preoccupation with failure. Reluctance to simplify requires teams to feel comfortable questioning why something is done, how it was done, and whether it was really as successful as assumed, which is also a group behavior that would benefit from psychological safety among a team.

Heedful interrelating is described as a pattern of mindful interactions between individuals within a social system (Daniel & Jordan, 2015; Weick & Roberts, 1993). It is sometimes referred to as the collective mind (Weick & Roberts, 1993). Along with Langer's (2014) larger body of work on mindfulness, heedful interrelating is considered a part of the foreground research for mindful organizing (Sutcliffe, 2018). The presence of three affiliated attributes of heedful interrelating better describes some of the data found in the experiences of the four different cases. As the foreground research to mindful organizing, and because heedful interrelating describes the importance of how group members represent, construct, and align themselves to the perception of group social forces (Stephens & Lyddy, 2016; Weick & Roberts, 1993), the

subordinate codes of Representing Perceived Within-Group Social Forces, Constructed Responses to Perceived Social Forces, and Subordinating to Perceived Social Forces (Weick & Roberts, 1993) were associated with the parent code of Heedful Interrelating. Together, they provide an explanation of group identity and member-constructed behaviors based on the represented identity contained within the social forces of each school-based educator team.

Presentation of Results and Findings

Multiple-case studies are better conceptualized as the qualitative equivalent to multiple quantitative experiments (Yin, 2018). The procedural integrity in analyzing the data from multiple cases is best accomplished by presenting individual cases first, followed by the overall findings across all cases. In this manner, the following sections will present the within-case findings, after which a cross-case synthesis will be detailed (Yin, 2018). Each case is presented as its own unique interview in which findings are detailed. Those details are supported by within-case textual evidence and aligned to the extant topical research. The culminating cross-case synthesis was used for broader pattern finding. Equally important, the cross-case synthesis was used to identify patterns unique to a singular case, yet significant to the study as a whole (Yin, 2018). Anomalies, unexpected findings, and disparate results are further contextualized within the study data and again aligned to the broader applicable research.

Within-Case Findings

Each case analyzed in this study is unique. They are defined by different parameters associated with their specific overarching school district organization. Each case is composed of a specific team of school-based educators who typify strong collective efficacy beliefs about their team's ability to organize and effect successful outcomes during the COVID-19 pandemic. Team size, composition of talents, and average time of members working on the team are all different. Additionally, each school-wide environment differs from the others in terms of the instructional programing, community affluence, and student population size. As such, the results of each case are presented individually.

Case 1: Elementary School Number 1

Elem 1 was selected to participate after 34% of the staff responded to the Collective Teacher Beliefs Scale (Tschannen-Moran & Barr, 2004). Overall results show a median score of 7.8 out of 9 possible, with a maximum score value of nine and a minimum score value of six points indicating overall strong beliefs among the staff in their collective capability to affect school outcomes. In consultation with the school principal, the team of fourth-grade teachers was asked to participate in the study, to which they agreed. The interview was conducted on May 24, 2022. The member check was conducted on June 7, 2022.

The fourth-grade school-based educator team for Elem 1 was composed of seven teachers. One teacher from the team was unable to participate in the focus group interview, offering six participants. While, the team average number of years worked in education was approximately 10, the average number of years working on this team was approximately six years. The team was composed of all females. In addition to the general education population, Elem 1 housed five special class programs, which are special education classrooms servicing students with similar significant learning disabilities. Additionally, Elem 1 also supports an English Language Learner Program, within which the dominant languages spoken are Spanish and Russian.

The focus group interview with the Elem 1 team lasted 40 minutes, during which 152 references were found for 10 of the 12 total codes initially identified. Table 3 shows the number of references identified for each code within the Case 1 data set. Exploring the more revealing subordinate codes associated with each of the parent codes identified, leftmost in Table 3, the strongest patterns based on frequency emerge in the areas of Cohesive Teacher Knowledge, Sensitivity to Operations, Commitment to Resilience, and Deference to Expertise. Embedded Reflective Practice showed moderate frequency relative to the other codes. Goal Consensus, Preoccupation with Failure, Supportive Leadership and Empowered Teachers were the least

frequently referenced codes for Elem 1. These frequencies were used as a compass providing a starting point to probe the contextual relevance of the data.

Table 3

Elem 1 Comparable Code Reference Frequency

Code	Code Reference Frequency	Code	Code Reference Frequency
Enabling Conditions of Collective Teacher Efficacy	16	Mindful Organizing	35
Embedded Reflective Practice	5	Preoccupation with Failure	3
Supportive Leadership	0	Reluctance to Simplify	6
Empowered Teachers	0	Sensitivity to Operations	8
Goal Consensus	2	Commitment to Resilience	9
Cohesive Teacher Knowledge	9	Deference to Expertise	9

Note. Parent codes for EC-CTE and Mindful Organizing appear left aligned. Indented codes under the parent codes represent the respective subordinate codes to the parent code.

It was apparent due to the frequency within the Case 1 data set that the Elem 1 team's experiences draw heavily on the perceived variety of expertise within the group (Weick & Sutcliffe, 2015), as well as on the expertise of those needed outside of the group; the team has a strong deference to expertise. Empowerment and support emerge from within the team. Initial reviews were confirmed by later analysis: Case 1 has no direct references to Empowered Teachers or Supportive Leadership. Noting these absences, during the member check for which the whole team chose to be present together, the team was asked about where or if leadership emerges from among the team. "I don't think there is one leader. We all know what we are good

at, and then we discuss it as a group, and then we all decide who is going to do what or who is stronger at what," stated one teacher, to which the rest of the team agreed. As the team members elaborated on that statement, patterns of support and empowerment were identified as an internal social force.

That same statement also indicates team experiences that draw on cohesive teacher knowledge, in this case about what capabilities are possessed by what teachers. Cohesive Teacher Knowledge is directly linked to the statements, "We all know who," or, "We all know what." Knowing who has the ability, what should be done, and what are the best available ways to accomplish a task are also hallmarks of the mindful organizing trait of Sensitivity to Operations (Weick & Sutcliffe, 2015), which were present in eight different references.

While discussing the team's ability to bounce back from the individual obstacles presented by the pandemic, one teacher stated, "we work together [for] so long, we kind of really know . . . what our strengths and weaknesses are and how we can lift somebody up." Showing a different context for Cohesive Teacher Knowledge and Sensitivity to Operations, these data for Elem 1 show a strong mutual understanding of the individual capabilities provided by each team member, what each team member may need in a given situation, and how the team can use their cohesive teacher knowledge along with their operational sensitivity to maintain high levels of team performance for all of their students.

Knowing the strengths of one another, when to employ them, and when to adapt them comes from frequent conversations between team members. The teachers interviewed from this team talked about planning together every morning as well as checking on each other to ensure the right resources were present and the right lesson strategies were ready. In line with descriptions about cohesive teacher knowledge (Donohoo et al., 2020), the team used time together to reflect on which strategies worked with their students during the pandemic, which strategies did not work, where each person was in the curriculum, and what was needed moving forward.

While sharing stories about how they as a team find and address problems, one teacher stated:

> We were getting a new math program [the] next year. So we all came together like, “Let’s take the first [professional development] day. Let’s look at the new curriculum. . . . Let’s go through and figure out how we want to present it to [the students], how we want to make it our own and kind of keep with the way that we like to format things.” And we worked together for the first PD day to kind of set up the first couple of topics.

Such statements imply the team was Reluctant to Simplify, coded six times, by not just accepting the curriculum as is. The team believed the curriculum needed to be adapted for it, and they, to be successful with their students. The statement also references the code Embedded Reflective Practice, coded five times, due to the teachers’ strategic need to reflect together on past practices, current expertise, and the future program roll-out to ensure overall success. During the member-check discussion about reluctance to simplify, a team member offered that they, as a team, “are very reflective . . . we were just thinking about next year’s reading program and how we can adapt that.” Elem 1 uses their whole-team embedded reflective practices to avoid simplification and therefore mitigate potential problems before they start.

Goal Consensus and Preoccupation with Failure were coded two and three times respectively. Like Supportive Leadership and Empowered Teachers, the lower frequency of coding does not indicate that goal development or preoccupation with failure were deprioritized by the Elem 1 team. Indeed, the previous quote regarding the new math program does imply that a goal may have been present, as may have been the previous statement about being “on the same page.” Evidenced in those statements, the team is looking for potential problems before they start, yet they did not speak of problems or failure. Likewise, they did not speak of goals or outcomes.

The team spoke with conviction about their Commitment to Resilience, coded nine times, stating things like, “every day we talk about something we need to fix,” and, “we go back and fix it,” or, “if someone disagrees . . . we don’t get . . . offended. . . . You talk about what would be the best way for all of us.” The team's process for resilience implies that common goals and an identity description for potential failure may be understood. Only more overt sentiments or experiences, however, were coded for Goal Consensus and Preoccupation with Failure.

The team’s preoccupation with failure may be lost inside of their strong efficacy beliefs. The previously quoted statement about the team’s belief in their ability to accomplish any task, when taken with the greater context of the whole interview, surfaces strong mastery experiences of success in the areas of preempting problems and fixing mistakes by using the diverse capabilities within the team. The strong sense of resilience also seems to obscure the concept of failure. As implied by their shared experiences across the pandemic, the Elem 1 team believes they should fix things, can fix things, and will fix things. Given such beliefs, rooted in their past experiences and reflections, goals were observed to be understood and failure was branded as learning.

The Elem 1 team of school-based educators were observed to be good humored, laughing often throughout their focus group interview and the member check. They spoke in ways that were deferential and complimentary to one another. They identified the importance of venting about personal or professional problems to each other, but only in the context of trying to find solutions and better accomplishing their professional tasks, such as meeting the needs of their students during the pandemic. There were numerous statements about how team members felt about each other while in the presence of one another. Those statements, both related to the professional practices identified in the coding described and personal needs, indicate strong family-like bonds. They also indicated a pattern of willing vulnerability among each other. This pattern showed up numerous times, with the concept of team-as-family being

present six times in the interview. Elaborating on this familial social force among the team, one member stated: “There’s a depth within us. You know, we’re supporting each other, sending each other something, showing up. So we’re there personally, and then that helps us professionally.” Another teacher interjected, “Yeah, it’s so much more than just a team we work with.” A third teacher interjected, “Yeah, we’re a work family. It’s really the word. . . . Real work family.” That willingness to be vulnerable within the family-like bonds indicated a sense of team strength.

Case 2: Elementary School Number 2

Elem 2 was selected to participate after 33% of the staff responded to the Collective Teacher Beliefs Scale (Tschannen-Moran & Barr, 2004). Overall results show a median score of 7.7 out of 9 possible points, with a maximum score of 8 and a minimum score of 6, indicating overall strong beliefs among the staff in their collective capability to affect school outcomes. In consultation with the school principal, the team of kindergarten teachers was asked to participate in the study, to which they agreed. The interview was conducted on May 20, 2022. The member check was conducted on June 10, 2022.

The kindergarten school-based educator team for Elem 2 was composed of three teachers. Average number of experience years is not used when describing this team; the small team size and the addition of a new team member skews averaging statistics. For this case, average years of experience have been replaced by actual years of experience. Two of the team members had 20 and 22 years of teaching experience respectively, and they had worked on the team with each other for 11 years. The third teacher had worked in education for three years and had been on this team for one year. The team is composed of all females. Elem 2 does not have any magnet programs that would service the needs of more challenging student populations.

The focus group interview with the Elem 2 team lasted 35 minutes, during which 230 references were found among the 12 initially identified codes. Table 4 shows the number of

references identified within the Elem 2 data set. Using the subordinate codes associated with each of the parent codes, the strongest patterns based on frequency show different patterns from those of Elem 1. The frequency of references coded for each of the areas of EC-CTE are all similar to one another with six references each for Supportive Leadership, Empowered Teachers, Goal Consensus, Cohesive Teacher Knowledge, and five references for Embedded Reflective Practice. Similar to the first case, the subordinate codes for mindful organizing were more frequent overall. A notable difference was found in Preoccupation with Failure being coded 14 times. This was the second highest number of references, exceeded only by Commitment to Resilience, coded 17 times. Sensitivity to Operations and Deference to Expertise were found in 13 references each. The least referenced code among the mindful organizing attributes of Elem 2 was Reluctance to Simplify.

Table 4

Elem 2 Comparable Code Reference Frequency

Code	Code Reference Frequency	Code	Code Reference Frequency
Enabling Conditions of Collective Teacher Efficacy	29	Mindful Organizing	63
Embedded Reflective Practice	5	Preoccupation with Failure	14
Supportive Leadership	6	Reluctance to Simplify	6
Empowered Teachers	6	Sensitivity to Operations	13
Goal Consensus	6	Commitment to Resilience	17
Cohesive Teacher Knowledge	6	Deference to Expertise	13

Note. Parent codes for EC-CTE and Mindful Organizing appear left aligned. Indented codes under the parent codes represent the respective subordinate codes to the parent code.

The Elem 2 data revealed team experiences expressed with a nuanced consideration of potential fail points and problematic practices. While discussing how the team adapted curriculum or programs that may have presented points of failure for children during the pandemic, one of the Elem 2 teachers stated, “it’s both about what we can handle on a day-to-day basis with our plates being really full and what we think is being asked of 5-year olds.” This representative statement implies the team’s Preoccupation with Failure is embedded in reflective practice that simultaneously considers what expectations, a reference to Goal Consensus, are being required of their students, along with what personal and capacity demands, a reference to Sensitivity to Operations, are being placed on this school-based educator team.

With 17 references coded for Commitment to Resilience, that commitment for Elem 2, when considered with the team’s strong Preoccupation with Failure, is noted to have been grounded in a pragmatic approach to doing what is most necessary to meet their agreed upon goals, implying Goal Consensus. That preoccupied pragmatism can be seen in a statement made when describing the impact that the pandemic had on their team:

> The pandemic just was relentless. Yeah, it was [asking] every day, “is it going to get better or not getting better? It’s getting worse! It’s going to get better. Are we going to get back together? No, we’re not!” What we knew and what we did is gone.

If examined alone, this statement appears to belie the team’s Commitment to Resilience while highlighting their Preoccupation with Failure. The coded Goal Consensus references, however, add context to this statement. When asked what the team does to “bounce back” from the relentlessness of the pandemic, one teacher replied:

> What we do is important and we take it seriously and we are continuously learning. And with that thought of, “I don’t know everything” . . . I want to keep on learning. We believe in our children, every single one of them. We don’t take it

> personally when a child is a challenge. The children are not robots . . . we are constantly saying what we do is important. And it's never the same. As [teacher 1 said], there's challenges that keep on coming up. It's part of the game . . . Bring it! What can we do [to help]?! Bring it on!

This statement shows Elem 2's depth of conviction along with the interwoven social forces that support their efficacy beliefs.

The referenced statements that "what we do is important" and "we believe in our children" show a common commitment to team goals, though they may not be traditional goals. These Goal Consensus statements do, however, fit what Arzonetti-Hite and Donohoo (2021) refer to as "the overarching goal that drives the need for their work together." That collaborative commitment to resilience born from broader overarching goals was seen in a statement made just prior to the "what we do is important" quote. Asked specifically, "How do you maintain your belief that you as a team can succeed with your student in spite of all those challenges [of the pandemic]?" the first response was, "I think that our philosophies are the same. I think that we are all born to be educators and we truly believe that."

Elem 2 believes that their "philosophies are the same" and that they "are all born to be educators," showing strong overarching Goal Consensus. Elem 2 also stated that they believe themselves to be "continuously learning" in response to any new challenges. Those challenges were identified by the team to come "fast and furious", yet they are also considered by the team to be "part of the game." With such context, the Goal Consensus developed among the team members influences their collective Commitment to Resilience through continual learning.

The team draws on each member as a professional, as well as personal, resource. Identifying as a "naturally optimistic team" that avoids "we can't" statements in favor of "How are we going to . . . ?" inquiries, the team members draw on their collective resources by deferring to the expertise of each other as exemplified in the following statement:

> [You] can see when the shoulders are up and you jump in, and a lot of people in this world don't jump in. Yeah. So, we jump in, and it's not [that] you're jumping in to say, "You did that wrong!" Well, maybe I did, but you know, I'm here for you, and it's just beautiful that we really get through a lot of things by jumping in and having the courage to say, "How about this?" or "How about that?"

Having the courage to tell a colleague when something is not working and to offer suggestions to improve again shows the team's Preoccupation with Failure, but it also shows how that preoccupation becomes a force of social persuasion, a source of efficacy beliefs (Bandura, 1997), to motivate change. Collective efficacy among the team through Deference to Expertise can be seen when a team member reflected on facing new challenges. She stated, "It's just like, 'How am I going to do that?!' And then one of my other wonderful colleagues will pull in from their expertise and say, 'Look at it this way.'"

Weick and Sutcliffe (2015) assert that deference to expertise brings a variety of perspectives, experience, and capability to the team. Elem 2 showed strong alignment to Weick and Sutcliffe's (2015) assertion when one member stated, "I think we . . . just appreciate . . . all of our strengths. Some are good at one thing; some are good at another. It's not a comparison. We collectively come together and we strengthen each other. You know. We lift each other." The coded references for Elem 2 exemplify how they leverage their deference to expertise as a means to understand the complexity of their circumstance and how to adapt to it. The team spoke emphatically about how they continually communicate with one another every day, throughout each day, to "stay on the same page." They "also have shared plans, so we are interacting within the same Google forms. That [way] we can see if we make modifications or if something worked." These communications and collaborations were shown to generate Cohesive Teacher Knowledge about the work actually taking place. They also showed a strong Sensitivity to Operations. This is especially evident when considered in tandem with the previously quoted statements. The scope of the data for Elem 2 shows a team that interacts

frequently to understand what is actually needed, what is working, and what refinements will require whose expertise.

Elem 2 did speak of Supportive Leadership and Empowered Teachers, each coded with 6 references. There were numerous references to their experience as educators being “honored and respected.” The team views themselves as being “very verbal and sometimes it’s in a funny way,” when it comes to identifying challenges or finding potential fail points. Elem 2 identified the feeling that school and district leadership encourages their input. As a follow-up question, the team was asked if they are encouraged to point out issues, conflicts, and challenges. One of the teachers responded, saying:

> Most definitely. And . . . our feedback is solicited and listened to. And if we say we needed to adapt [a program or curriculum because] it was an unrealistic expectation to do X, Y, and Z, you know, [leadership] is like, “Great! What did you do? How did that work out for you?” [They are] not like, “Oh my gosh! You didn’t do it! That’s a problem!” So I think that’s a level of respect and professionalism.

As seen in this statement, a Supportive Leadership empowers the teachers to find problems. Those Empowered Teachers express their Commitment to Resilience by finding solutions, which they are encouraged to share with others. In doing so, this statement also shows how a supportive and empowering leadership can provide vicarious experiences for others, through which, according to Bandura (1997), efficacy beliefs can spread. One team member identified their support as being “Two pronged. It’s both from above [leadership] and from each other.”

There were numerous references in the Elem 2 data set that specifically expressed the type of supportive relationships from which the three team members of Elem 2 benefit. Although these statements speak to the social forces within and among the team members that bolster their collective efficacy beliefs, they do not specifically fit within the EC-CTE or mindful organizing attributes. Like Elem 1, Elem 2 were observed to be good natured, laughing often with one another. They were observed to genuinely care for each other, which was further

exemplified during the member check in which one of the members compared the strength of their team communications as a solution to the many challenges faced by married couples. Extending their personal connection further still, one member referred to the team as “each other’s lifeline.” One member stated of the other two, “These women are two of the most positive people I know,” which was followed by another team member stating, “But it’s really true, and I can count on these two women.” The dialogue highlights a pattern of empathy and advocacy between the members of Elem 2, which is similar to patterns seen in Elem 1 and that will be seen in Elem 3.

Case 3: Elementary School Number 3

Elem 3 was selected to participate after 27% of the staff responded to the Collective Teacher Beliefs Scale (Tschannen-Moran & Barr, 2004). Overall results show a median score of 7.9 out of 9 possible points, with a maximum score of 9 and a minimum score of 6, indicating overall strong beliefs among the staff in their collective capability to affect school outcomes. In consultation with the school principal, the team of fifth-grade teachers was asked to participate in the study, to which they agreed. The interview was conducted on May 24, 2022. The member check was conducted on June 13, 2022.

The fifth-grade school-based educator team for Elem 3 was composed of seven teachers. The team average number of years worked in education is approximately 20, while the average number of years working on this team is approximately 14 years. Two of the members have been on the fifth-grade team for 20 years, while two other members have spent the entirety of their six years in education on this team. The team is composed of one male and six females. According to the principal, Elem 3 has the district’s largest number of students within the Title 1, free and reduced lunch thresholds, a common proxy used to determine poverty (Ladd, 2012). They also have the largest population within their district of students with Individualized Education Plans. Elem 3 houses programs for students identified as multiply disabled or learning language disabled, as well as supporting students within a pull-out resource

and in-class support setting. It is worthy to note that, in a private communication, the principal shared his pride that Elem 3 has the highest performance on standardized assessments within the district, indicative, the principal believes, of the efficacy beliefs among the staff across all programs.

The focus group interview with the Elem 3 team lasted 46 minutes, during which 283 references were found among 12 identified codes. Table 5 shows the number of references identified within the Elem 3 data set with respect to any given code. The strongest patterns based on frequencies of subordinate codes again show nuanced patterns of referenced codes. The frequency of references coded for each of the areas of EC-CTE are varied with Goal Consensus, Embedded Reflective Practice, and Cohesive Teacher Knowledge receiving the highest scores, 10, nine, and nine respectively. Supportive Leadership was referenced five times, while Empowered Teachers was referenced four times. Similar to the first two cases, the subordinate codes for mindful organizing were more frequent overall, though not as great a difference between parent codes as in Case 2. Although the subordinate mindful organizing codes each had consistently high frequencies of coded references, Table 5 shows the subordinate mindful organizing frequencies appear to be proportionately varied compared to the frequencies found among the EC-CTE subordinate codes. Commitment to Resilience and Deference to expertise were coded 14 and 15 times respectively, while Preoccupation with Failure and Reluctance to Simplify were both coded within 10 references. Sensitivity to Operations was coded with eight references. The difference in frequencies between the top three strongest coded and the bottom coded references for each parent code was a difference of 7 references for mindful organizing and 6 for EC-CTE. Because the context of coded references matters more than the frequency of coded references, the similarity in frequency dispersion is considered by the research as being similarity in contextual relevance.

Table 5

Elem 3 Comparable Code Reference Frequency

Code	Code Reference Frequency	Code	Code Reference Frequency
Enabling Conditions of Collective Teacher Efficacy	37	Mindful Organizing	57
Embedded Reflective Practice	9	Preoccupation with Failure	10
Supportive Leadership	5	Reluctance to Simplify	10
Empowered Teachers	4	Sensitivity to Operations	8
Goal Consensus	10	Commitment to Resilience	14
Cohesive Teacher Knowledge	9	Deference to Expertise	15

Note. Parent codes for EC-CTE and Mindful Organizing appear left aligned. Indented codes under the parent codes represent the respective subordinate codes to the parent code.

The similarity in coded contextual relevance of both EC-CTE and mindful organizing was exemplified early in the interview with a quote referencing numerous overlapping codes. Early in each focus group interview, collective teacher efficacy was defined and described by the researcher. The teams were then asked to share stories or examples of the best things about working on a team with such strong efficacy beliefs. At approximately the eight minute, thirty second mark of Elem 3's focus group interview, one member quickly answered:

> When we go to our grade level meetings . . . we all come in there and we are all on the same page. We all have an understanding of what is expected of us. But we also go in there with questions. We're ready to communicate. We're ready to discuss. You know, we're prepared. And I think that comes from. . . . We each have our own strengths and we each know that, and we know who to go to when

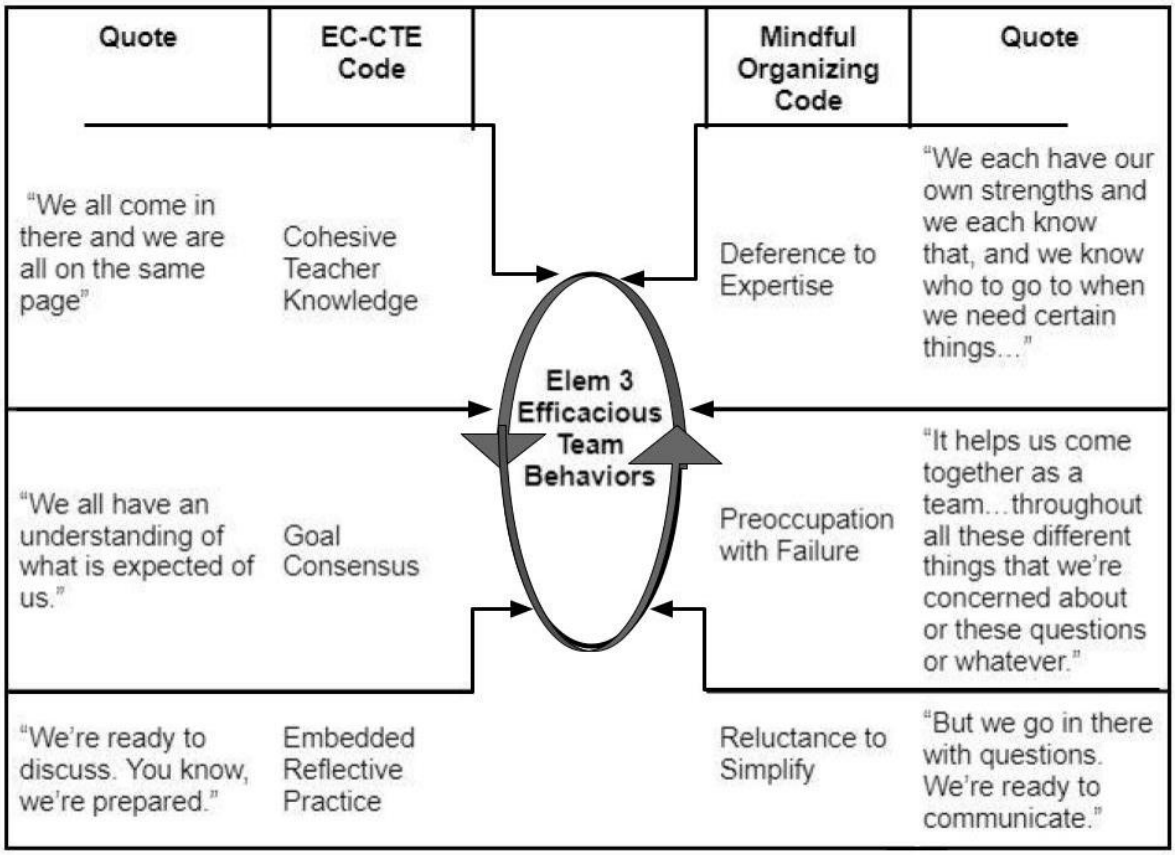
> we need certain things. So when we come to these grade-level meetings, I think it helps us come together as a team . . . throughout all these different things that we're concerned about or these questions or whatever.

Many codes were referenced within this short, impassioned passage. It is indicative of the majority of the data set gathered from the Elem 3 focus group interview. Commensurate with the previous two cases, one team member, or at times multiple members, discussed the social forces and interactions among their teammates that gave rise to their efficacious beliefs during the pandemic. Perhaps due to the large size and significantly long time spent on the team with a majority of the memes, Elem 3 was unique in the density with which any given reference may have been coded.

Given the density of coding within such a short passage as the one quoted above, Figure 1 maps the overlapping and interacting coded references, showing each code's relevance to other codes as expressed within the team data set. Figure 1 shows the way in which much of the data gathered from Elem 3 was expressed, coded, and contextualized in their interview. Though all cases went through a conceptually similar coding process, the density of coded references in Elem 3 made it necessary to include the code contextualizing map of Figure 1.

Figure 1

Elem 3 Code Contextualizing Map: EC-CTE and Mindful Organizing



Note. Specific references from the single quote are coded among three of the EC-CTE and three of the mindful organizing behaviors, each of which influences the sources of collective efficacy beliefs.

The quote implies an emphasis on communication among team members. This team norm enables the team to gather Cohesive Teacher Knowledge, referenced nine times, such that they "are all on the same page." The communication that places them all on that same page is also offered in the same context in which they have a Deference to Expertise when knowing one another's strengths and "who to go to when we need certain things." Deference to Expertise was coded the most among the mindful organizing attributes at 15 times. The quote implies that the team regularly reflects on

what is needed to perform their duties as a team, indicative of Embedded Reflective Practice, rated nine times. Such embedded reflection, along with the team's norm of preparing questions rather than accepting simple answers or simply accepting new tasks, demonstrates a Reluctance to Simplify, which was referenced 10 times. The communication in pursuit of preparation allows the team to reflect on "what is expected of" them, referring to the most frequently referenced EC-CTE of Goal Consensus, coded 10 times. Elem 3 was ready to engage in conversations that collectively explored "all these different things that we're concerned about." Those concerns, the willingness to imagine them, find them, and share them shows the team's Preoccupation with Failure, which was also coded 10 times.

The team uses their frequent communication as part of their Commitment to Resilience, coded 14 times, as shown by the following quote:

> We also constantly work together to troubleshoot. So if there is anything that arises on the grade, we try to troubleshoot and get to some happy medium, some resolution on our own to make sure that it . . . satisfies . . . the school [expectations]. So it's not every little piece of nonsense being brought up to the front office. If it's something that we have trouble with that we need clarification, we talk about what . . . [we need] clarification on, we'll go as a group. We'll have one person speak on behalf of the rest of us. So we are very collaborative in most of our decision making, our planning, our scheduling.

The greater context about their Commitment to Resilience showed the team's commitment rests with an understanding of the overarching goals that unite the team (Arzonetti-Hite & Donohoo, 2021) and the common expectations established by school leadership. Therefore, Goal Consensus and Commitment to Resilience were shown to be buoyed by Supportive Leadership. That Supportive Leadership was further emphasized in statements that referenced leadership during the pandemic as "very challenging, but I felt like we were supported," or, "I did feel

overwhelmed [by the pandemic], but I did feel supported." One team member expressed a feeling that the principal was "right there" with his support of the teachers on this team.

Although Sensitivity to Operations was coded least frequently among the Mindful Organizing subordinate codes, its frequency was similar to Cohesive Teacher Knowledge, which was coded nine times. The relatively infrequent direct references mask the context of the team's interactions as a microcosm of the overall school environment, which is a significant consideration when exploring CTE belief (Bandura, 1997). The team's references of constantly troubleshooting, or their detailed discussions of how they would share their concerns and resolutions with administration reference an underpinning of Sensitivity to Operations without it being explicitly stated.

Like the previous two cases, Elem 3 was a team that enjoyed laughing with one another. Humor was shared as a large factor in this team's work, to the point where humor might be considered a norm for the team. Sharing just how much humor exists between the team members, one teacher stated, "I especially always say our humor is wasted on our family. No one gets us. But when we're here, like, you're like a comedian on stage . . . our lunch is cathartic . . . it just makes you feel like a person." Indeed, the concept of family as a social force was referenced four times throughout the Elem 3 data set. Although initially not coded, these statements illustrate how team members envision the social forces that hold their team together and how each member contributes to those perceived social forces.

Case 4: Elementary School Number 4

Elem 4 is unique among the schools in the study. Elem 4 is a single-school, PK–8 school district. Although there are 27 overall staff members, only seven teachers were eligible by elementary grade level to participate in the study. 71% of the eligible staff responded to the Collective Teacher Beliefs Scale (Tschannen-Moran & Barr, 2004). Overall results show a median score of 7.5 out of 9 possible points, with a maximum score of 9 and a minimum score of 5, indicating overall strong beliefs among the staff in their collective capability to affect school

outcomes. Elem 4 has one teacher per elementary grade level except for fourth grade, which has two teachers. During consultations with the principal/superintendent, permission was granted for the multigrade team of teachers to participate. Four of the seven possible teachers participated in the focus group interview. The interview was conducted on May 25, 2022. The member check was conducted on June 16, 2022. During the member check, the point person was joined by one of the teachers who could not be present during the interview. In addition to being a teacher, she also has a role described as a “pseudo-administrator.”

The average number of years working in education among the multi-grade team members who participated in the interview was 10, while the average number of years working on this team is approximately eight. One male and four females participated in the study, which includes the person who participated in the member check but not the initial interview. Elem 4 is, as noted, a single-school public school district. The school services all students within its municipal boundaries or shares services with other school districts nearby.

The single-school district configuration represents the fourth and final distinct case in this study. Although each of the three previous cases have been unique in their parameters, the social interactions, and therefore social forces, that influence Elem 4’s efficacious team were uniquely different from the interactions of the other three cases. As a structural example, each of the previous three teams had daily time within their master schedule designated for them to meet. Such designated time was in addition to common lunches and other possible planning times. Elem 4 had no such common time together. The action associated with an organization is to organize its agents, their interactions, and outcomes (Weick and Sutcliffe, 2015). Since each organization within which each of the four cases exist influences the interactions of those teams, it is important to consider the team as a microorganism of the overall school environment (Bandura, 1993). Thus, it was important to remain mindful of Elem 4’s single-school district distinction as the results were reviewed.

The focus group interview with the Elem 4 team lasted 42 minutes, during which 267 references were found among 17 identified codes. Table 6 shows the number of references identified within the Elem 4 data set with respect to any given code. As could be anticipated, the strongest patterns based on frequencies of subordinate codes show a set of patterns that were different from the first three cases. The context from which those patterns emerge, however, shows different pathways to similar efficacious outcomes.

Table 6

Elem 4 Comparable Code Reference Frequency

Code	Code Reference Frequency	Code	Code Reference Frequency
Enabling Conditions of Collective Teacher Efficacy	31	Mindful Organizing	62
Embedded Reflective Practice	9	Preoccupation with Failure	7
Supportive Leadership	7	Reluctance to Simplify	15
Empowered Teachers	6	Sensitivity to Operations	5
Goal Consensus	2	Commitment to Resilience	20
Cohesive Teacher Knowledge	7	Deference to Expertise	15

Note. Parent codes for EC-CTE and Mindful Organizing appear left aligned. Indented codes under the parent codes represent the respective subordinate codes to the parent code.

As Table 6 shows, the frequency of references coded for each of the areas of EC-CTE are varied, somewhat similarly to the previous three cases. Embedded Reflective Practice was the most coded of the EC-CTE subordinate codes. Supportive Leadership and Cohesive Teacher Knowledge were both coded among seven references. Empowered Teachers was coded among six references. Goal Consensus was the least coded of the subordinate EC-CTE

codes. Similar to each of the other cases, mindful organizing was coded with greater frequency than the EC-CTE codes. Commitment to Resilience was coded among 20 references, while Reluctance to Simplify and Deference to Expertise were each coded within 15 references. Least coded among the subordinate mindful organizing codes was Deference to Expertise, with seven references.

Because each of these teachers serve students on different grade levels, it is unsurprising to find Goal Consensus so infrequently referenced. These teachers have a minimal need to generate agreement about grade-level goals. The two specific references to Goal Consensus, however, indicate different aspects of goal agreement. When describing how the team bounced back from the challenges of the pandemic, one teacher described the team's mindset as follows:

> I feel like, in general . . . You know what? I was put here to help kids learn each day. I'm going to come in and try to teach somebody something [and] just continue. And I feel like, as a staff, we did that.

This statement aligns with the importance of overarching goals that give a team its sense of common purpose (Arzonetti-Hite & Donohoo, 2021).

Another teacher, whose tenure at Elem 4 was mostly during the pandemic, was comparing her perception of the strong sense of community among the Elem 4 team with experiences on teams in other school districts. Several teachers joined her in sharing an experience exemplifying a different context for Goal Consensus. The dialogue was as follows:

> TEACHER 1. I feel like everybody works together. They work with you, they want to. They're happy to do it and come up with solutions, and I definitely felt that way more strongly here than in other places.
>
> TEACHER 2. What about that student? . . . Those three students just went remote, and [all their teachers] were like, "what do you want to do?" And you wrote to all three of the

> teachers, like the K, One, and Two teachers were like, “All right, what are we going to do? Let’s make a consensus [among] all three of us.”
>
> TEACHER 1. “Let’s be on the same page.”
>
> TEACHER 2. And she wrote it like 7:00 in the morning. And we were like, “We should stick together on that!” They kind of banded together and said . . . “Yeah, that’s what we’re going [to] do.”
>
> TEACHER 1. I feel like it’s much more that’s a welcome thinking here, where in other districts I don’t feel like it’s that easy.

The comparative dialogue between the two teachers exemplifies the importance of collaborating to generate Goal Consensus (Arzonetti-Hite & Donohoo, 2021). It also shows the importance of what Arzonetti-Hite and Donohoo (2021) refer to as “purpose-driven goals that will guide their work in a coherent fashion” (2021, p. 18).

It is important to note from the dialogue above that the teachers themselves saw a point of failure in serving their students, a strong indication of Preoccupation with Failure. The exchange between these teachers shows a level of comfort with taking the initiative to identify an issue, design a solution, communicate it to the necessary organizational actors, and actualize the plan without disrupting the reliability of the teaching system (Weick & Sutcliffe, 2015). Examples of Elem 4 teachers finding problems, considering the challenges posed, and working together to design solutions were numerous during the interview. Such “welcome thinking” is indicative of Empowered Teachers from a Supportive Leadership, both EC-CTE subordinate codes that were frequently referenced relative to other codes.

The data set from this case showed strong examples of Commitment to Resilience and Reluctance to Simplify. The dialogue shows the two-pronged nature of Elem 4’s Commitment to Resilience: an elastic situation that stretches the team without breaking them, and the recovery of form once the team has adapted (Weick & Sutcliffe, 2015). That collective Commitment to Resilience was also exemplified by the numerous attempts to refine pandemic practices through

Embedded Reflective Practices and feedback from a variety of sources. One such example was shared, “I also reached out to the parents and [said], ‘Listen . . . I want some feedback. What do you think about this? I’m doing homework this way. Are you . . . over homework?’ And I’ll get feedback from them and go from there.” As a result of the parent feedback, which indicated that the parents were overwhelmed with student homework, the teacher, as an example of the work of the whole team, reflected on the feedback, adapted her delivery, and in doing so demonstrated her commitment to resilience. Seeking the feedback from parents was also an example of Reluctance to Simplify.

Reluctance to Simplify is seen in a team’s avoidance of generalizations and assumptions about their circumstances (Weick & Sutcliffe, 2015). The quest for parent feedback about the impact of homework on the home life of students’ families shows an avoidance of assumptions about why homework is or is not being done and whether or not it is helping students beyond their academic life. Such Embedded Reflective Practice shows a team desire for more complex understanding of their circumstances.

Weick and Sutcliffe (2015) note that Reluctance to Simplify requires “requisite complexity” (p. 67), meaning the team members need to consider problems and solutions from multiple perspectives rather than singular assumptions. Elem 4 offered an example of Supportive Leadership that models the expressed team norm of collaborating to find multiple perspectives and effectively complex solutions. The team was discussing the types of conflicts that arise among the team members or with leadership and how they manage those conflicts. Sharing what happens when some ideas are “shot down,” the teacher stated:

> But I feel like, in that conflict, there’s always an option that would make sense and go with that idea. You know, like to support it in some way, shape, or form. It might not be that exact thing, but we could say, “Okay, this is a better way that we can get it.”

Wrapped in a Commitment to Resilience to find a better idea, the team is reluctant to accept the first idea presented if it does not meet their expectations for success.

Cohesive Teacher Knowledge and Deference to Expertise were frequently referenced with respect to their fellow subordinate codes. Though neither was the most frequently referenced within their respective set of subordinate codes, both were strongly emphasized by the members of Elem 4. Different from the previous cases, this team had specific examples of the school leadership deferring to the expertise of the teachers, those closest to the origin of work (Weick & Sutcliffe, 2015), as noted in the analysis of the dialogue described. Elem 4 also demonstrated resilience by deferring to the expertise of their classroom paraprofessionals and were the only team to mention the assistants in their classrooms. This was evident in such statements as the following:

> TEACHER 1. We used to plan activities for [grades] K, one, two and that shifted to really planning things [with] our educational assistants. . . . We really relied on [them] a lot to say . . . "What can we do to make things more interesting?"
>
> TEACHER 2. Huge deal! Huge! They were their top notch, first of all, and they just stepped up to really the role of such a support system for us for our virtual morning meetings. They were in, they were helping us Zoom®. They were writing back on [digital platforms]. We really relied on them. During, especially during lockdown, you know, throughout the pandemic, and they've just been amazing.

It can be seen from this statement that the paraprofessionals were not just supporting the teachers, but they were offering consultation in the absence of more frequent teacher team planning that had been prevented due to social distancing protocols.

Deference to expertise was also referenced in the team's efforts to find exemplars and shared experience via the internet. The team noted numerous times that the pandemic had significantly limited their already limited interactions. As the team was sharing the ways in which "failure is embraced, or not . . . looked at as a bad thing," they were asked what they do when there is failure and they do not have the skills they need to meet the new challenge. A teacher replied:

> We Google it, we joined online groups of teachers . . . I'm just scrolling through all the different groups I joined during the pandemic and like, wow! This person in Utah is doing this [thing] . . . there's a lot out there [on the internet] . . . just listening to other people's stories out there, I'm like, "Oh, I could do that" . . . then we'll screenshot it . . . we'll text it to one of our coworkers and be like, 'Hey, did you see this?'

This statement shows an alignment to the mindful organizing research, specifically deference to expertise. The team's adaptation of joining online groups for resources acquisition shows their need to find requisite complexity in the experiences of others (Weick & Sutcliffe, 2015) who are similar to themselves. Bandura (1993, 1997) would call this efficacy-inducing effort "vicarious experience." When teams and team members defer to the experiences of others, their collective efficacy beliefs are strengthened vicariously. Elem 4 strengthens the vicarious exchange with social persuasion, another source of collective teacher efficacy (Bandura, 1993), by sharing their new learning with others.

As also noted in the other three cases, numerous references were made by Elem 4 to family and community as representations of the social forces among the group. Several references were made to the team's comfort with sharing, venting, or imagining solutions with one another. The team feels value in the mutual care they have for their students as well as for one another.

The power of the focus group interview format could be seen over the course of this case, especially as it pertained to the social interactions of this team. The first question asked during the questioning route pertained to how much the team members talk to each other during any given day. The previous three teams all emphatically and humorously discussed the immense number of social exchange they have in a given day. In contrast, Elem 4 felt they interacted very little and especially so since the pandemic. As the interview continued, however, the team referenced numerous examples of their communications and interactions. To support Cohesive Teacher Knowledge, the teachers all began following each other on Twitter to see

what was being done in one another's classrooms. They shared student data with one another as part of the Embedded Reflective Practice. Indeed, the interview data showed the team had a strong commitment to community and communication.

Elem 4 was observed to laugh together less than the other three teams, but they were possessed with equal intensity with regard to the perceived social force that bound the team. When discussing the importance of curiosity as a member trait, it was stated:

> I think that's how we grew up, sort of, you know, like . . . here's some kids. You seem like good educators. Here's some resources. Make it work. And if you stayed here and you become part of this community and the staff, you are one of those [curious] people or you don't really work here.

The team was asked to expand on that norm of curiosity by commenting on the lack of perceived complacency, to which a teacher responded, "I don't think you continue to be successful in our environment. I think you'd stand out and it would be obvious." Continuing to express the importance of curiosity, collaboration, and persistence as team norms, the teacher continued:

> If you don't get sucked into this community where you feel like you're making a change and all these things . . . there are other reasons that you probably don't want to stay . . . So if you want a complacent job where you do the same thing every year and you're not changing it up and doing new things, this is probably not the place for you.

The rest of the team was nodding emphatically while this statement was spoken. The overarching nature of this Goal Consensus also exemplifies the social forces perceived by the members of Elem 4 as well as how they shape their contributions to achieving their goals.

Cross-Case Synthesis

Cross-case syntheses are designed to be case-based, rather than variable-based, approaches to data analysis (Yin, 2018). Using a case-based approach preserves the entirety of each case, then compares patterns across all of the cases within the study to find relationships

between lived experiences. Because an a priori conceptual link between EC-CTE and mindful organizing is used in the present study, the replicated relationships deduced from that link are explored first, followed by the inductive findings from the data analysis that had previously not been considered within the study framework.

Pandemic Impact on Work. The teams were all asked to imagine their collective work throughout the pandemic. They were asked to stay quiet and try to visualize their time together during the pandemic. Coming out of those moments of silence, each team described the pandemic as among, if not the most, challenging experiences of their careers. A teacher from Elem 2 described the broader teacher sentiment during the pandemic in the following statement: “It was a mourning of teacher loss; of . . . what we had known before. . . . You wanted it so badly to be the way it was, and it wasn’t going to be.” From the same team, another teacher described numerous heartfelt tragedies she had endured throughout her career, ending her descriptions with, “The pandemic just was relentless. Yeah, it was everyday [asking], ‘Is this going to get better? Is it getting worse?’ . . . What we knew and what we did is gone.”

Although the teams were explicit in the difficulties they faced during the pandemic, a pattern of coming together and increased communication was seen in the data. When asked to describe their interactions specifically, a member of Elem 1 wove her fingers together tightly and presented them to the video camera exclaiming, “Like this!” The intention was to show the team had become tighter together and communicated more frequently than they had before the pandemic. Another teacher stated, “I think we were close before [the pandemic], but it brought us closer.” As previously noted, Elem 4 found increased comfort, communication, and deference to expertise with their classroom paraprofessionals. They spoke of the initial challenges to communicate with one another. Their overarching experience, however, showed references to adapted communications, finding ways to communicate with one another. As an example of their efforts seen in the data, the staff ensured that previously undesired faculty meetings would

be conducted again for the express purpose of checking in on one another and finding social connections with each other.

The same teacher from Elem 2 who described the general teacher sentiment during the pandemic as one of “mourning” had opened her comments by saying, “I think the pandemic actually contributed to . . . teacher efficacy because we were all going through it at the same time, so everybody was sharing.” This sharing occurred in the context of adapting to the pandemic, resiliently finding a new way to do things because the old way was gone. She ended her statement on mourning by saying, “The pandemic was not good, but there might have been some good things that came out of it.” This statement captures the cross-case perspective of the complex and ambiguous challenges wrought by the pandemic and how strengthening social forces allowed each of the teams to find a source for believing in their capabilities to meet the uncertain and relentless challenges they faced.

Goal Consensus and a Preoccupation with Failure. Within the data for each case, Goal Consensus and Preoccupation with Failure were referenced with comparable frequency. This is not to suggest that the frequencies for each set of referenced codes were similar. Rather, a review of Table 7 shows Goal Consensus and Preoccupation with Failure were comparably large or small in relation to the other conditions or attributes respectively found in each case. In Cases 1 and 4, both codes were the least frequent coded within their parent categories. In Cases 2 and 3, both codes were referenced with moderate to high frequency.

Similar to frequent statements made by all four teams, Elem 3 exemplifies the types of contextual connections between these two codes when a teacher explains:

> Pandemic-wise . . . we were so focused on getting instruction to the children, whereas you could sit at home and do what you wanted. But we made sure that, no matter what, the kids were getting the instruction they needed. We were always talking to each other and . . . making sure we had enough things for kids to do. I mean, there was never a time where I felt, even at home, that our group, that our team, wasn’t [working together].

Mindful organizing is the organizing behaviors of the team that generate reliable outcomes despite unpredictability or uncertainty; they reliably achieve goals despite increasing complexity (Su, 2017; Weick & Sutcliffe, 2015). When generating goal consensus, goals do not need to be discrete; goals can be overarching or based on incremental measurable achievements (Arzonetti-Hite & Donohoo, 2021). The teacher's reference to "pandemic-wise" acknowledges the complexity-born disruption of the experienced circumstance. The overarching goal described was "no matter what, the kids were getting the instruction they needed." Preoccupied with the thought of failing to attain that goal, the team organized their efforts such that "there was never a time" they were not working together as a team.

Table 7

Cross-Case Frequencies for EC-CTE and Mindful Organizing

Code	Case 1 Code Frequency	Case 2 Code Frequency	Case 3 Code Frequency	Case 4 Code Frequency
Enabling Conditions of Collective Teacher Efficacy	16	29	37	31
Embedded Reflective Practice	5	5	9	9
Supportive Leadership	0	6	5	7
Empowered Teachers	0	6	4	6
Goal Consensus	2	6	10	2
Cohesive Teacher Knowledge	9	6	9	7
Mindful Organizing	35	63	57	62
Preoccupation with Failure	3	14	10	7
Reluctance to Simplify	6	6	10	15
Sensitivity to Operations	8	13	8	5

Code	Case 1 Code Frequency	Case 2 Code Frequency	Case 3 Code Frequency	Case 4 Code Frequency
Commitment to Resilience	9	17	14	20
Deference to Expertise	9	13	15	15

Note. Parent codes for EC-CTE and Mindful Organizing appear left aligned. Indented codes under the parent codes represent the respective subordinate codes to the parent code.

Within the broader research, goals and outcomes rely on organizing successful efforts for achievement (Busby & Iszatt-White, 2014). Mastery experience research (Bandura, 1997) suggests that when teams achieve those goals, it builds a sense of CTE. It stands to reason that the teams whose described interactions during the pandemic emphasized Goal Consensus, with mostly overarching goal references, would also emphasize a preoccupation with potential failures as a means to achieving the mastery outcomes.

Cohesive Teacher Knowledge, Sensitivity to Operations, and Deference to Expertise. Cohesive Teacher Knowledge was among the most frequently referenced EC-CTE codes across all cases. Table 7 shows it was the most frequent for both Cases 1 and 2, and the second most frequent for both Cases 3 and 4. Deference to Expertise shows a similar strength among the Mindful Organizing codes across the four cases. Table 7 shows Deference to Expertise was one of two most frequently Mindful Organizing references in Case 1. Case 2 shows Deference to Expertise as the third most frequently coded in this category, with 13 references compared to 14 and 17 coded references as the most frequent. Case 3 shows Deference to Expertise was coded 15 times making it the most referenced of the Mindful Organizing codes while it was the second most frequently rated code for Case 4 with 15 references.

Sensitivity to Operations is characterized by teams who know what work is actually taking place rather than relying on assumed, intended, or abridged descriptions of work (Weick

& Sutcliffe, 2015). Likewise, Cohesive Teacher Knowledge is the degree to which teachers know what practices other teachers are using and their agreement about what practices work best (Arzonetti-Hite & Donohoo, 2021). Consequently, the referenced experiences coded for Sensitivity to Operations also showed contextual references to teachers knowing what was being taught by one another and how it would be taught by each person. At the conclusion of the focus group interview with each team, they were asked to share any other stories or examples of their work that might contribute to the purpose of the study. Providing a representative example of sentiments replicated in all cases, a teacher from Elem 2 stated:

> TEACHER 1. So we put our own spin on [what we each teach] because we're autonomous. But, you know, we also keep it pretty much the same . . . so that all of our students collectively are getting what they need. And we feel confident in that . . . I think we all just appreciate . . . all of our strengths. Some are good at one thing; some are good at another. It's not a comparison. We collectively come together and we strengthen each other. You know, we lift each other . . .
>
> ALL TEACHERS. . . . we rise by lifting others!

Knowing what is being taught, what operations are taking place in another team member's classroom, provides vicarious experiences, the second strongest source of collective efficacy (Bandura, 1997). It also provides team members with working knowledge of strengths, an inventory of capabilities possessed across the team. "We feel confident in that . . . we all just appreciate . . . all our strengths" implies an appreciation for the skill sets possessed by others on the team. Each team made references to such organizing behaviors similar to "a person who is good at one thing will do that for the group" indicating a replicated pattern across all cases.

In each of the four cases studied, the teams spoke about the unexpected tasks thrust upon them as a result of the pandemic. To find their way back to the expected, each team described deferring to the expertise of credible others, both among their team and outside of it (Weick & Sutcliffe, 2015). In the spirit of adaptation, each team made frequent references

indicating a deference to the skills, perspectives, and advice of credible others. A teacher from Elem 3 was discussing the value of knowing the strengths of her teammates when she stated:

> I think, too, we appreciate each other's perspective. So where I might go in with like a super-hot head and [say], “Why are we doing it like that?,” one of [my colleagues] will be like, “Well, you know, if you think about it this way. . .” and then I'm like, “You're right. . . . I should think about it that way.”

That Deference to Expertise in this statement, based on credible Cohesive Teacher Knowledge and a Sensitivity to Operations actually taking place in the classrooms of her colleagues, allows for social persuasion to influence the collective efficacy beliefs of the team. Drawing on the shared experiences of Elem 2, the team rises not by lifting each other up, but rather by deferring to the strengths of others in the times when those strengths are most needed. Such lift cannot occur unless team members are Sensitive to Operations occurring around them and have Cohesive Teacher Knowledge.

Embedded Reflective Practice and Reluctance to Simplify. Embedded Reflective Practice is the ongoing and collaborative process teachers use to critically evaluate their work in pursuit of improvement (Donohoo et al., 2020). Reluctance to Simplify is a team behavior characterized by refusing untested attributions of success or failure and resisting the lure of easy assumptions about outcomes or challenges (Weick & Sutcliffe, 2015). Both team behaviors denote a team’s unwillingness to accept things as they are and willingness to frequently rethink how they should be done (Sutcliffe, 2018). As noted in the analysis of Elem 3, both attributes denote a team’s need to question outcomes, seek better solutions, and push to find best practices.

The frequency of the codes associated with references to Embedded Reflective Practice and Reluctance to Simplify varied from group to group as shown in Table 7. It is important to note, however, they again varied similarly to one another within each group. There was also

consistent contextual correlation across all cases. A teacher in Elem 4 was discussing the need to try new ideas when she stated:

> We have the wildest ideas . . . but it was important that we just roll with it because we have what we have, and we have to make it work. . . . And so we . . . try almost everything before we say we can't do something.

It would be a mistake to draw equivocality between "we have what we have" and "it is what it is." Simplification prematurely categorizes (Sutcliffe, 2018) what one has as all one has. Elem 3, however, will "try almost everything" to find what works best. Elem 1 shares similar behaviors when organizing their reflections to improve outcomes stating, "we all kind of . . . get together trying to figure out what's the best way to approach it. . . . It's 'Alright, now what do we do?'" Her colleague emphasized the point sharing, "Right, and how we get around to what's going to work best for our team and apply that knowledge to us?" Both of these statements describe efforts to resist accepting their present circumstances as their only possibility. Using Embedded Reflective Practice tempered with a Reluctance to Simplify, all four teams' data showed attempts to find variety in explanations for their circumstances, as well as in their designs for new pathways forward.

Similar to descriptions of teams characterized by Reluctance to Simplify, Embedded Reflective Practice can shift attributions and assumptions just as they can raise expectations for outcomes (Arzonetti-Hite & Donohoo, 2021). Simplified, and therefore likely mistaken, attributions of success or failure can affect belief spirals that erode efficacy (Lindsley et al., 1995, as cited by Arzonetti-Hite & Donohoo, 2021). In contrast, using evidence and seeking multiple perspectives in the act of sensemaking (Weick, 1995) is more likely to produce reliably strong outcomes for teams facing workplace disruptions (Weick & Sutcliffe, 2015). Evidence-based attributions for outcomes considered from multiple perspectives affirm mastery experiences (Bandura, 1997) and cement them as part of a system of efficacy beliefs. These

four case studies also indicate that this desire to reflect and find “another way” shows strong Commitment to Resilience.

Commitment to Resilience. Each of the four teams studied across these four cases spoke of their desire and need to learn. During each interview, teams were asked how, as a team, they responded to failure. As the teams pondered the question, however, a pattern regarding team learning emerged, which Weick and Sutcliffe (2015) regard as an important part of a commitment to resilience. As Elem 1 considered their experiences with failure for a few seconds, the following dialogue emerged:

> TEACHER 1. I think we discuss this.
>
> TEACHER 2. We talk about it.
>
> TEACHER 1. And then we have a way to make it right. You know, how do we take that failure to turn it into a success? That’s what’s so strong about all of us.
>
> [A few minutes later] TEACHER 3. And even if one of us can’t give something to a certain . . . problem, they’re (points to the team) willing to step up in a different way. I feel like we all step up.

The team’s dialogue was quick to rebrand failure as a next-success. Weick and Sutcliffe (2015) suggest that a Commitment to Resilience is identified by teams that learn without blame, “imagine detailed next steps, and recombine fragments of potentially relevant past experiences” (p. 94). All four cases showed evidence of teams willing to learn from others as they combine potentially relevant past mastery experiences into imagined new solutions that induce the collective efficacy of the team.

When asked how they managed failure, after a few seconds of thought, Elem 4 humorously proclaimed, “There aren’t any!” They continued to wrestle with the thought of team failure and what it might look like. After several minutes, a teacher said the following:

> Our arrogance about the failure . . . sorry about that. But I think you feel like a failure when you don't think you did the right thing or that you didn't do the best you could do. And there's nobody on this [Zoom® meeting] that ever feels that way.

She went on to say:

> So, even if [a lesson] didn't go the way that you thought it might, I'm not looking at it as a failure. . . . I don't think it should be viewed as a failure, maybe a learning lesson that maybe the next time I'm going to act this way or do this instead. But I . . . don't view it as a failure. I would view it as a learning experience to do something different the next time.

The team nodded and expressed their agreement, as if to indicate this type of resilient thinking was a team norm. Again, the data in this case suggests that resilience, born from team learning, is the strongest pathway out of failure. Perhaps more than a pathway out of failure, the data suggests a team's confidence in its capability to learn from mistakes strengthens the team's efficacy beliefs regarding their capability to manage the unexpected.

Elem 3 offered that they "brainstorm a lot!" when working through their failures. They described times in which they cried through challenges, yet considered different points of view, or leaned on the expertise of one of the other team members to find a better way. Discussing the need to sometimes step away from the work, one teacher stated the following:

> When one of us is going through something tough, the other two are there to just pick it up. Somebody is out sick for a long period of time, something serious has happened . . . because of our shared collaboration with plans . . . the other two just pick it up. And if somebody needs us, we just take over and do it.

Elem 3 showed their commitment to resilience in their commitment to one another. The statement makes evident that, bolstered by Cohesive Teacher Knowledge, Elem 3 "picks it up" and brainstorms to find a way to achieve success.

Elem 4, given their aforementioned propensity for curiosity, was unsurprisingly frank about failure and resilience. The newest member of Elem 4 stated:

> Failure is kind of embraced as a part of the process. . . . There is so much communication and maybe, like, recommendations of different resources and things. So if something fails, it's almost like someone has worked out that there's a better avenue to teach something.

Finding efficacy in the expertise of others, Elem 4 finds resilience when failure is a part of the process of discovery. A second teacher emphasized the point, stating, “So I think we’re constantly failing and reevaluating and readjusting. I think that’s why we work well here, because I think we are so curious and creative that we can just take it and go in a different direction.” The description of “reevaluating and readjusting” implies team resilience comes from Embedded Reflective Practice.

This pattern of all other elements in some way enmeshed with a Commitment to Resilience was seen across all four cases. It is not surprising then that this referenced attribute was also the most frequently coded across all four cases. These four efficacious school-based educator teams all shared a deep Commitment to Resilience and leveraged their expressed priority attributes in pursuit of that commitment. It is also noted within each of the representative examples provided, successful outcomes were found from resilient behaviors. Resilient behaviors, therefore, provided teams with mastery experiences, in turn producing stronger beliefs in each team’s capability to overcome the adversities of the pandemic. Commitment to resilience, grounded in the other attributes of mindful organizing and the EC-CTE strengthen the collective teacher efficacy beliefs of the four teams studied.

Dissimilar and Inductive Results. The power of a multiple-case study can be seen in the cross-case synthesis. Through this process, patterns emerge across all cases, such as those previously described. Cross-case synthesis, however, also allows for unique qualities of cases to be drawn out and considered (Yin, 2018). In the sections that follows, results dissimilar among cases will be considered.

Research integrity can be invigorated when searching for results that had not been previously considered (Creswell & Guetterman, 2019). Such anomalous results force the analysis to induce patterns along with those patterns deduced from the a priori conceptual link. These inductive results are similar to what Yin (2018) refers to as rival interpretations. The sections that follow, however, will show that those interpretations consider these anomalous and, indeed, the dissimilar results as supplementary to the results already described.

Supportive Leadership and Empowered Teachers. While patterns emerged across all four cases, one result was unique to a single case. It is important to note that the frequency of codes can be deceiving. As an example, the codes of Supportive Leadership and Empowered Teachers were not referenced within a data set, which was unique to Elem 1. This is not to suggest that Elem 1 did not feel supported by their school or district leadership, since that was never stated, nor does it suggest that they do not feel empowered by their respective leaders, also never stated. Any reference to Supportive Leadership or Empowered Teachers appeared as deeply inferential and therefore coding as such was not applied. In an example around the 30-minute mark of the interview, the team shared a strong set of statements exemplifying a team belief in themselves, when one teacher said, “I honestly feel there’s nothing we can’t do,” and a second teacher quickly echoed the sentiment with, “I agree with that too. I think that’s why [the principal] picked our team [for this study].”

This set of statements inferred that the Elem 1 fourth-grade teacher team had the full faith of the principal to work, solve, and practice their craft as they saw fit. Neither context, nor expressed sentiment, however, stated support or empowerment, thus those corresponding codes were absent from the reference. The statements, and others like them within the data, suggest that the absence of codes for these two important CTE conditions should not be considered as their absence in the lived experience of the team. They merely did not show up in the interviews. Infrequent codes, or references left uncoded should not be considered as insignificant codes (Creswell & Guetterman, 2019).

Heedful Interrelating. Successive reviews and coding of the data revealed numerous references access all cases that did not fit within the other 10 subordinate, a priori code categories. The frequency of these statements, with similar counts to the other coded categories, along with the contextual and descriptively rich evidence warranted additional themes be considered. These data add to the wholeness of lived experiences expressed by each of the four teams studied. These uncoded references did not, however, provide enough evidence to suggest a rival explanation for school-based educator team interactions that might influence CTE beliefs. Rather, as these uncoded references were considered and reviewed against the extant literature, they appeared to offer supplementary explanations for the social forces within efficacious teams that contribute to a system of CTE beliefs. In short, these inductive codes filled in the conceptual links underpinning this study; they brought about a fuller, more complete picture of the social forces and organizing behaviors of efficacious teams that shape CTE beliefs.

Each team provided evidence that suggested they perceived social forces to exist that bound them together as a specific type of group; a family was the most represented perceived social force. The members shared stories in which they constructed their behaviors in accordance with the perceived social forces. Subtle yet important, the members shared how they each then ensured that those behaviors contribute to the group. The references—envisaging, constructing, and contributing or subordinating to the perceived social forces—are best explained by Heedful Interrelating (Weick & Roberts, 1993).

Weick and Roberts (1993) referred to Heedful Interrelating as collective mind. They were intentional in choosing the word collective because it connotes individuals interacting as if they are part of a specific group even though there was no such direction to organize themselves as they have. Elem 3 personified this idea when describing the unknown origins of their group behavior, suggesting, “I really don’t even know how that occurred . . . we just kind of shared these responsibilities as a unit without anybody telling us to do that.” The interrelations among

the collective group are enacted by paying increased attention to one another. Representations of a group's interrelating will show degrees of heedfulness (Weick & Roberts, 1993). This was evident in this statement from a teacher in Elem 2: "And then also balancing [our work] with the personal care for each other. Plus, the shared conviction of our belief in what we do." This statement shows the group member who was speaking believed the social forces between the members was more than just professional, it was personal and caring. Like Goal Consensus, this statement is a rich example of Representation of Perceived Social Forces; they believe their common conviction about their professionalism strengthens the social forces between them.

When group interrelating is heedful, team members subordinate themselves to the perceived social forces (Weick & Roberts, 1993). This simply means they are willing to interact in accordance with the rules of the represented social forces; they follow the norms. When a member of Elem 2 offered that she talked with her team members "more often than with my husband!" she was referencing her willingness to interrelate according to the perceived group norms. The group norm for all four school-based educator teams was to communicate frequently about their work and about their personal lives. The cross-case data showed references from each group suggesting that sharing personal events and experiences with the group was normative. It also showed that being part of these expectations helped them believe in their collective capability to meet the uncertain demands of the pandemic; the professional communications enmeshed with the personal communications were perceived to strengthened their CTE.

Elem 3 was discussing the different ways they interrelate when a teacher stated:

> I think we collectively have an interest in having all of us be successful . . . We all have, I think, a great amount of pride that we all look good together and nobody tries to one-up anybody else. . . . We're all so equally invested in each other's success.

The emphasis on collective interest is a reference to the way this team envisions the social forces that bring the group members closer together. Being equally invested represents the

investment expected of each team member. The statement lastly references the willingness of the members to follow, or subordinate themselves to, this perceived social force. It is evident that Elem 3's emphasis on being collectively invested in each other's success was referenced as part of what made the team successful.

The way each of the team members on each of the teams studied envisaged their group interrelations (Weick & Roberts, 1993) contributed to their beliefs about their successes; it was often referenced within the overall data in context with Embedded Reflective Practice. As noted, the four cases showed evidence that the teams rejected simplified answers attributable to external factors for successes or failures (Arzonetti-Hite & Donohoo, 2021; Weick & Sutcliffe, 2015). The cross-case data showed the four teams studied considered their interactions, each as an identified efficacious team, to be part of the successes achieved. The ways in which these teams interrelated contributed to their beliefs about their collective capabilities to achieve success. Each team's beliefs about the depths and strengths of their relationships, their belief in the ways they individually contributed to and affirmed those relationships, and their willingness to abide by the perceived rules of those relationships generates a system of collective efficacy beliefs.

***Psychological Safety*.** Each of the teams indicated moments of being vulnerable among each other. Vulnerability statements were referenced in ways that suggested a willingness to try anything, even if it might fail, such as was shown in the statements made by Elem 4 regarding failure being "part of the process," or sharing points of professional confusion with the team, such as when an Elem 3 member admitted to her colleagues that, despite being a teacher for many years, she sometimes cannot "wrap her head around" new directives, or sharing the emotional toll the pandemic was taking on them, which was something shared by all teams, whether through venting, yelling, crying, or taking time off to care for a loved one. It was clear from each group that there was a deep trust and confidence that each team member could

share what they needed to as they felt the need to. Further, they indicated that they could share their needs without worry of judgment or negative consequence.

Providing examples of Psychological Safety, Edmonson (2019) suggests that teams in which such safety exists communicate frequently in ways that are authentic, are necessary, contribute to finding challenges, and facilitate needed change. Psychological Safety is a group-level property also visible within team interrelations. As noted, each of the cases provided data that was rich in team member communications, that such communications were an expectation, and further, those communications were considered a strength. Describing their comfort with deferring to the expertise of colleagues, a member of Elem 3 stated, “We all naturally will take a lead in an area. I don’t think anybody would look at one other person and be like, ‘Well, [she] does all the work and this [other person] doesn’t.’” The statement goes on to talk about “being cognizant of each other’s time, or our family, our personal life, our work life” as part of knowing when to step in and “take the lead.”

Possessing the knowledge and the collective empathy to know one member needs other members to take the lead is indicative of strong psychological safety among the team. Team members need to be comfortable letting others see their distress. Other members need to be comfortable to take over the work without judging. Descriptions across all the data, such as the one shared from Elem 3, reveal team interrelations flowing with empathy and advocacy for one another.

Describing the most meaningful interactions among her team, a teacher from Elem 1 stated:

> I thought the conversation [was] just so genuine. I don't feel like I need to be . . . nervous. Whereas, other teams . . . don't really talk like we do. There's just that sense of love. I feel so comfortable I could go [to] them about anything in my life and feel that I'm never going to get critiqued about it or judged. And they're very open. We love that about each other.

It is evident within this statement that Elem 1's interactions consist of Edmonson's (2019) described authentic conversations. Those conversations give rise to intense emotions shared by the whole team, as indicated by the use of the pronoun "we" in the last sentence: "we love that about each other." Another member of Elem 1 elaborated saying, "There's no dumb questions with any of us. If we're having difficulty with something . . . one of us is very willing to step up and help somebody else." This statement, combined with the previous statement, creates a completeness to the value placed on each person within the team. Each team member can be authentically a person and a professional, advocate for their needs for either part of their life, and find the others will empathize then advocate for those needs in their willingness to "step up and help."

Because psychological safety is a group property (Edmonson, 2019), it can be influenced by others deemed credible to the group. This form of vicarious experience or social persuasion models interrelating behaviors that establish trust among group members. Elem 2 spoke of their leadership as part of a two-pronged influence, regarding their psychological safety when a member stated, "We get that message from above, that taking care of yourselves is the most important thing." The teacher goes on to share that self-care is not questioned. Rather it was supported even to the point of the principal covering her classes if needed. She concluded the statement, saying, "So, I feel like it's two pronged. It's both from above and from each other." The team shares the empathy and advocacy modeled by the school principal, and, in doing so, the team members feel confident in meeting their own personal and professional needs while also being heedful of the needs of others.

Innovating and acting on curiosity in a time of ambiguity, suggests Edmonson (2019), requires that teams are supported within psychological safety. When asked to elaborate on Elem 4's perceived group identity as being curious, a teacher stated, "I've rarely asked, 'Hey, can I try and do this with this student?' and been told 'No, that's not how we do it here.'" The statement indicates that there is a comfort to innovate among the team and administration.

Indeed, there is psychological safety because curiously innovating is how they do it there, as previously described by Elem 4.

Psychological safety allows team members to interrelate in ways that meet the expectations perceived within the social forces of their respective school-based educator teams. Team members were empathetic to their students' needs, and their own needs as people and professionals, while exchanging advocacy to meet those needs for self and others. This flow of empathy and advocacy is indicative of the *collective mind*, heeding the interrelations of the team, as described by Weick and Roberts (1993). Mastery experience, and therefore efficacy beliefs, can be eroded by failure (Bandura,1997). When, however, failure is contextualized as a learning experience, as Preoccupation with Failure was often referenced, and there exists a team-level attribute that mistakes, challenges, and problems are expected to be shared for the group to resolve, collective teacher efficacy in resolving uncertainties, such as those each team interviewed endured during the pandemic, grows.

Summary

Yin advises (2018) that a multiple-case study requires each case to be treated as if it were its own experiment. It must, however, be considered fully such that the analysis is impressed with the totality of each individual case. After the fullness of each case experience is analyzed, all cases are considered in relation to other cases. The analysis of results followed this same process.

The analysis of the four cases discussed throughout this chapter presented each case as a complete study, attempting to look at the rich experiences offered by each focus group interview. Coding was conducted for the a priori conceptually linked components of EC-CTE and mindful organizing respectively. The combination of uncoded yet revealing data and the search for rival explanations of the data (Yin, 2018) helped to identify the inductively developed codes for Heedful Interrelating (Weick & Roberts, 1993), along with its component parts, and Psychological Safety (Edmondson, 2019).

Rather than rival explanations, these additional codes offered a fuller answer to the research questions posed within this study. The CTE beliefs among these teams were described in terms indicating the strong presence of the EC-CTE. Those conditions were invigorated by the mindful organizing behaviors with which the teams conducted themselves. Mindfully organizing the EC-CTE conditions, represented by the five subordinate codes, was observed as the way in which team members perceived group expectations to interact despite no explicit directive to do so. The data suggests they did so because it strengthened their collective efficacy in their ability to meet with eventual success. More importantly, their success meant the success of their students. To interrelate with heed for other members, in such vocal and vulnerable ways, required a strong team-level presence of Psychological Safety, which in turn provided the confidence to mindfully organize the EC-CTE.

Notable for its counterintuitive presence in the data, there were significant amounts of laughter among team members as they reflected on their group interactions throughout the course of the pandemic, a time implied by each team as the most difficult time of their careers. Comfort in sharing with one another vulnerable stories, events, or needs was present in the overall data, a strong indication of psychological safety. Evidence of consistency in practices as well as value for unique team member skill sets were noted. The interview data suggested that these efficacious teams were reluctant to accept circumstances at face value. They imagined better ways to do their work, accomplish their goals, and successfully organize themselves in light of the tasks given to them. The stories recounted within the data showed a pattern of empathy and advocacy for one another. Interestingly, no one person or persons were discernible as a team leader within the data sets. Attribution of success, organization, innovation, care, or team advocacy were distributed among members or more generally described as “something we do,” but never as something a singular person does. Lastly, every case found significant descriptions and direct statements recounting the many ways each

member of each team sees their team as a family, or some other personalized representation of bonds stronger than just professional connections.

Descriptively rich, emotional retelling of team interactions during the pandemic provided relatable and credible evidence of the properties of CTE present at the team level. Heedful interrelating, or the collective mind as it was called by Weick and Roberts (1993), along with psychological safety were observed in the data to provide the substrate within which the EC-CTE and mindful organizing behaviors were able to surface as integral ingredients in the composition of CTE beliefs. Feeling psychologically safe, the heedful interrelating depicted by empathy and advocacy allowed the teams to mindfully organize the enabling conditions of collective teacher efficacy. The data suggests an autopoietic, or self-adapting, system of school-based educator team interactions that influence CTE beliefs among the four teams studied; a CTE belief system emerges from the data. The system of CTE beliefs will be discussed along with other relevant findings in the next chapter.

CHAPTER 5:

CONCLUSION

The theoretical framework supporting this study was designed through an integrative approach that braided social cognitive theory and complexity theory together. The framework was designed to explore the influence and formation of teachers' collective efficacy beliefs as emerging from the interrelations of educator team members. School-based educator teams, composed of teacher-to-teacher interrelations, provide the contextual microenvironments (Bandura, 1997) in which complex interacting conditions give rise to CTE beliefs. It is the immersion into this complex network of interacting environmental, behavioral, psychological, and relational conditions that the following research questions were answered:

1) How can interactions among members of school-based teams within public elementary schools be used to understand collective teacher efficacy antecedents?

2) How can interactions among members of school-based teams within public elementary schools be used to understand the conditions that support collective teacher efficacy?

School-based educator teams could be considered an organism (Wheatley, 2006) inside an ecosystem that is the school as an organization. The metaphor of the teacher-team-as-an-organism brings the complex, interacting conditions that influence teacher efficacy beliefs into a clearer view. Single-cell organisms are simple organisms. When cells combine, and groups of cells link together the organisms become increasingly more complex, self-sustaining, and sentient. It is through this lens that teams were viewed and the team-level conditions of teacher efficacy beliefs were explored.

Complex, in line with complexity research (Fidan & Balci, 2017; Mendes et al., 2016; Tourish, 2019, refers to the multiple interacting condition categories—a system of connected conditions—that were found in the focus group interview data. That data was derived from the four unique educator team cases identified as the unit of study for this research. The use of the

word *complex* has, in no way, been used to mean *hard* or *difficult* conditions. Indeed, it was these conditions, interwoven and threaded throughout the team experience, that gave rise to each team's belief that they could and likely would be successful in spite of the universally disruptive effects of the COVID-19 pandemic. Rather, the word *complex* is used to specifically denote the multiple types of conditions interacting in multiple and dynamic ways.

The irony of complexity is that once something is understood for its complexity, it becomes, in that moment, less complex. Once the complexity of a challenge, or set of conditions, is met with equal or greater variety of resources, interpretations, and solutions, the problem at had becomes simplified, manageable, and familiar (Sutcliffe, 2018; Weick & Sutcliffe, 2015). Valuing the inherent complexity of a phenomenon and the facets that make it complex is the first step in making dynamic systems conceptually less complex (Stacy, 2011). The research questions underpinning this study sought answers that would bring the complexity of CTE antecedents into clearer view. The data gathered and results found answer those questions and therefore contribute to the broader CTE research by clarifying the complex nature of CTE antecedents.

In the subsequent sections of this chapter, further clarity is brought to bear on the complex conditions of CTE beliefs found within the results of the present study. That clarity is accomplished by first revisiting the four interacting conditions identified in Chapter 4. Those conditions will be examined relative to the findings and contextualized within the respective bodies of literature. The literature will be used to explain how those conditions might influence one another such that, together, they are filtered through the four sources of CTE and ultimately influence teams' efficacy beliefs. Implications of the research will be discussed with regard to the ways in which the research findings could benefit practitioners, school and system leaders, and school-based educator teams. The research implications are discussed with the intention of providing recommended actions for practitioners, educational leaders, and policy makers. Lastly, recommendations are provided for future qualitative and quantitative research.

Interpretation and Importance of Findings

When, 2,000 years ago, Democritus first conceptualized the atom, he arguably gave the world something to look for that was, at the time, unseeable. In essence, Democritus gave humanity something to search for. Believing that unseen, interacting, and compounding forces shape the world gave humanity a reason to look for those forces, learn from them, and therefore better understand what makes us who we are and everything around us what it is; believing is seeing (Weick, 2011). This study was conducted with the intention of seeing what is not easily seen: that which emerges in the liminal spaces between human interactions and organizational circumstances that might contribute to CTE beliefs. The research questions in this study considered the four sources of CTE as CTE *antecedents* and the contexts in which those experiences occurred as the conditions. Separating antecedents as such helped to *atomize* the experiences within the data gathered.

Previous studies have described CTE *antecedents* only referencing the four sources of efficacy (Lee et al., 2016). By comparison, Adams and Forsyth (2006) parsed *antecedents* into remote and proximate sources of CTE, referencing when those influences occurred in relation to the formation of efficacy beliefs; closer to the formation were proximate sources, while experiences in the past were remote sources of efficacy. Donohoo et al. (2020) explored those proximate antecedents further when validating the EC-CTE. Anderson (2022) further delineates the EC-CTE into *key actors*, efficacy-influencing organizational members, and *habitual practices*, efficacy-enabling systems within the organizational context.

The separation of *antecedents, conditions,* and *sources* of efficacy was a helpful method of parsing constructs for the researcher. Such parsing, however, may cause broader confusion by attaching equivocal meanings to the word *antecedent*. Seen through the results of this study, the complex interweaving of contextual conditions and cognitive sources of efficacy suggests to the researcher that *antecedents* should refer broadly to the complex system of conditions within which efficacy beliefs are shaped.

By answering the research questions as they were constructed, the outcomes of this study add nuance to the broader understanding of the conditions that influence teachers' collective efficacy beliefs and how those conditions contribute to the four sources of efficacy beliefs. First, the methodology used in this study answers the request among CTE researchers for more qualitative CTE research (Donohoo, 2018; Ramos et al., 2014; Wheatley, 2005). More granularly, the use of focus group interviews to collect the data for this study suggests focus groups have methodological merit within CTE research. Understanding how group-level beliefs are shaped by the lived experiences of the group requires diligent study of the group as a unit of study (Edmondson, 1999) for which focus group interviews are uniquely designed.

Second, the results derived from this study provide evidence that the integrative theoretical framework braiding social cognitive theory and complexity theory has conceptual merit. Within the results, the researcher identified several experiential intersections between the environmental conditions described by EC-CTE and mindful organizing. The braided theory also allowed the researcher to identify two additional conditions not previously considered in this study. This suggests that the braided theory may provide a pathway to accomplishing Donohoo's (2018) suggestion of identifying greater variety of CTE antecedents and understanding the interactions between those antecedents.

Third, the integrative braiding between social cognitive theory and complexity theory supports the application of mindful organizing in public school settings. Mindful organizing is associated with the larger body of research regarding high reliability organizations (HROs) (Sutcliffe, 2018). HROs are organizations characterized by high potentiality for catastrophic mishaps, yet very rarely do those mishaps occur (Sutcliffe, 2018; Weick & Roberts, 1993; Weick & Sutcliffe, 2015). Nuclear power plants, air traffic control towers, and aircraft carriers are the types of organizations most associated with HROs. The present findings add to a growing body of research that suggests mindful organizing has applicability in fields more mundane than typical HROs, or at least in fields with less obvious potential for catastrophe (Busby & Iszatt-

White, 2014; Su, 2017; Sutcliffe, 2018). Indeed, Sutcliffe (2018) contends that this gap in the mindful organizing and collective mindfulness research is one of several that needs attention.

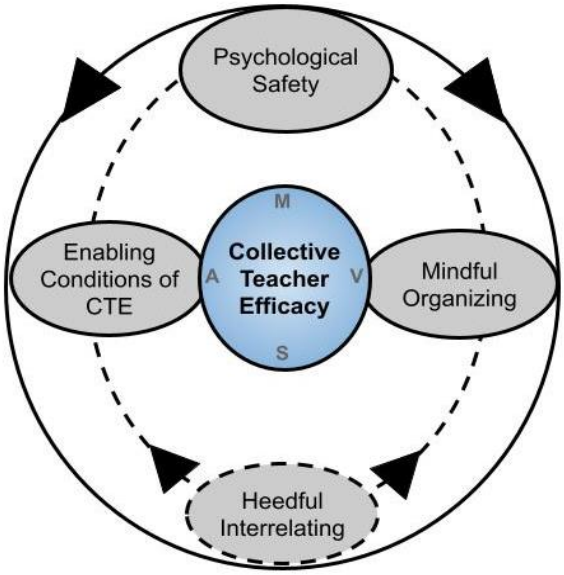
Likewise, the present study identifies schools as complex social networks set inside a larger organizational context (Fidan & Balci, 2017). Emergency rooms and hospital care is often associated with complexity contexts (see Edmondson et al., 2016, and Vogus & Sutcliffe, 2012. Edmonson et al. (2016) argue that education is beset by equally acute and complex challenges to those found in healthcare settings. The authors suggest that in both fields, “those closest to the delivery of crucial human services confront high expectations for changing their practices amid scarce resources and intense scrutiny” (p. 68). The complex system in which the seemingly simple exchange of teaching and learning take place are described as linked and layered (Bandura, 1997) or nested inside of multiple other enveloping and influencing nests such as the classroom, the school, the district, the state, and the federal government (Edmondson et al., 2016). Post-pandemic needs and expectations for schools are likely to increase the complexity of school environments and therefore the demands on learning teams within schools (Weiner et al., 2021). The theoretical lens and methodological framework of this study are replicable research designs that offer future application for mindful organizing, as well as psychological safety and heedful interrelating, in educational settings.

Fourth and final, the interactions of conditions influencing CTE is more fully conceptualized within this study as a complex system of four interacting conditions. Similar to the discovery of longitude and its influence on cartography, the unexpected findings of psychological safety and heedful interrelating highlights defining features of team-level, CTE-shaping experiences. With those findings, practitioners and researchers can better map a pathway to activate and embolden CTE beliefs. Figure 2 provides a map of the conceptual linking between the EC-CTE and mindful organizing behaviors found within the results, and the additional conditions of psychological safety and heedful interrelating also found in the results. Figure 2 therefore implies that the conditions that influence CTE beliefs can be explained by

four interconnected condition domains: environmental, behavioral, psychological, and relational conditions, respectively, were identified within the results. Each of the four conditions are mapped in such a way that a path, or influence, can be found to the four sources of CTE, represented by the initials for each of the sources—**M**astery experience, **V**icarious experience, **S**ocial persuasion, and **A**ffective states—inside of the centrally positioned CTE beliefs.

Figure 2

Complex Conditions of Teams' Efficacious Belief Systems



Note. Solid lines denote the potential moderating effect of psychological safety on the other conditions. Dashed lines represent the potential mediating effect of heedful interrelating between EC-CTE and mindful organizing. Connecting EC-CTE and mindful organizing nodes to the CTE center with indicates their reciprocal relationship to one another in the development of CTE beliefs. The initials 'M', 'V', 'S', and 'A' represent the four sources of CTE, mastery experience, vicarious experience, social persuasion, and affective states respectively.

The next section will link propositions from each conditional domain found within the results. Those linked propositions will be contextualized within the larger body of research. After

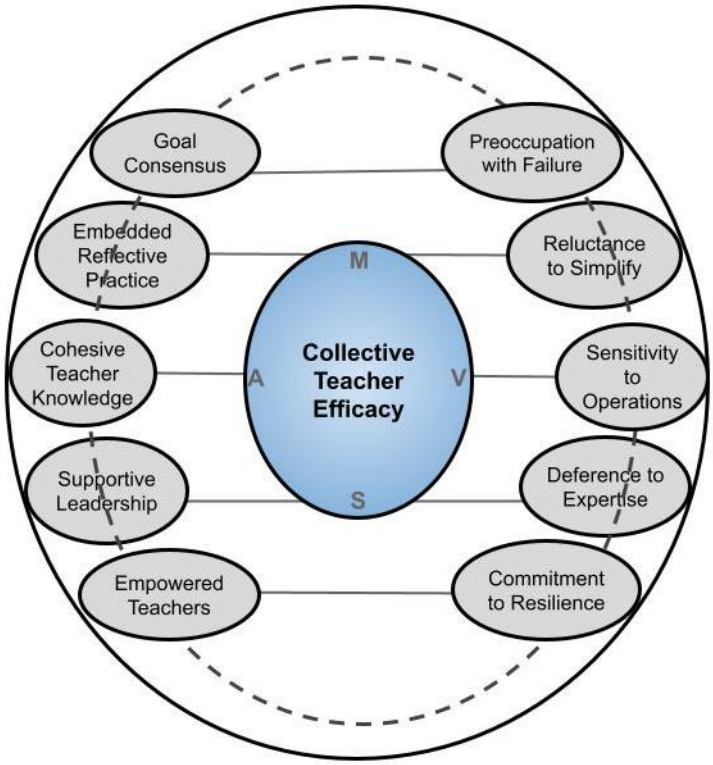
all the CTE conditions found in Chapter 4 are contextualized and mapped, practical benefits and applications will be provided.

Linking Team-Level Behavioral and Environmental Conditions of CTE

Using the broader mindful organizing and CTE research, interpretation of the results from this study indicates five specific links between EC-CTE and mindful organizing. Figure 3 shows those specific links, which are explained in the rest of this section, via the horizontal lines linking the specific environmental conditions of EC-CTE and behavioral conditions of mindful organizing. The center of Figure 3 shows the formation of CTE beliefs as filtered through the four sources of efficacy (Bandura, 1993, 1997). The solid-lined outer circle indicates that all conditions are context specific (Bandura, 1997; Donohoo et al., 2020), and therefore the CTE beliefs are contextually influenced. The dashed-line connects each of the EC-CTE and mindful organizing conditions to one another, indicating dynamic relationships among the EC-CTE and mindful organizing component conditions.

Figure 3

Linking Environmental and Behavioral Conditions of CTE.



Note. Pairings between the EC-CTE and mindful organizing behaviors are linked by horizontal lines denoting the associations found and supported by literature. The dashed lines weave between conditions denoting their dynamic interactions. The solid outer circle is the situational context in which the conditions are present. All lines can be traced to the four sources of CTE.

Goal Consensus and Preoccupation with Failure

Within the results, *goal consensus* and *preoccupation with failure* were often contextualized through similar references. The conceptual alignment between *Goal consensus* and *preoccupation with failure* is evident in Arzonetti-Hite and Donohoo's (2021) contention that, "as teams progress along their learning journey, they must be willing to revisit, revise, and rethink their goals in light of new understandings" (p. 18). Goal consensus helps to identify what failure might look like and promotes early correction of efforts that drift from identified mastery

strategies associated with goal attainment. Together they contribute to mastery experiences that shape CTE beliefs.

Embedded Reflective Practice and Reluctance to Simplify

The enabling condition of *embedded reflective practice* was identified within the results as linked with the mindful organizing behavior of *reluctance to simplify*. The four teams studied could be described as reluctant to simplify based on their self-described avoidance of assumed answers, assumed causes, and assumed outcomes (Weick & Sutcliffe, 2015). Enacted within an environment of *embedded reflective practice,* evaluating emergent circumstances based on evidence provides teams with more accurate attribution of success and failure (Arzonetti-Hite & Donohoo, 2021). Accurate, evidence-based attributions of success during attempts at team sensemaking are more likely to affirm true mastery experiences (Bandura, 1997). In short, teams' reluctance to simplify enacted within an environment of *embedded reflective practice* is likely to accurately affirm previous mastery experiences or produce future mastery experience resulting in stronger CTE beliefs.

Cohesive Teacher Knowledge and Sensitivity to Operations

Tracing the lines of Figure 3 down, the next horizontal link connects the enabling condition of *cohesive teacher knowledge* with the mindful organizing behavior of *sensitivity to operations.* The combination of those conditions generates accurate information about effective team practices (*cohesive teacher knowledge*) along with practices that are actually being used, how they are being used, and to what effect they are used (*sensitivity to operations*). *Cohesive teacher knowledge* provides vicarious affirmation of individual capabilities and the teams' abilities to successfully navigate future tasks (Arzonetti-Hite & Donohoo, 2021). *Sensitivity to operations*—knowing what is taking place and to what effect—can affirm group mastery experiences (Arzonetti-Hite & Donohoo, 2021). The interaction of affirmations regarding current applicability of previous mastery and current team capabilities to navigate the next challenge strengthen collective efficacy beliefs.

Supportive Leadership and Deference to Expertise

The link between *cohesive teacher knowledge* and *sensitivity to operations* was shown in the results of this study as also linked with the mindful organizing behavior of *deference to expertise.* Using the broader CTE and mindful organizing research, *deference to expertise* is more likely linked with the enabling condition of *supportive leadership,* as reflected in Figure 3. Making an argument for applying HRO behaviors, such as mindful organizing, to more commonplace organizations, such as schools, Busby and Iszatt-White (2014) argue in favor of a significant relationship between *relying on* and that which is *relied upon.* Weick and Sutcliffe (2015) contend that leaders *rely on* the expertise of those closest to the origin of work regardless of rank or title. Relationally, *deference to expertise* demonstrated by those closest to the implementation of work (Edmondson et al., 2016) is enacted and *relied upon* within an environment of *supportive leadership.* Arzonetti-Hite and Donohoo (2021) preempt this connection stating, “When it comes to complex systemic decisions . . . some level of collaboration [between supportive leaders and teachers] typically leads to a more effective outcome” (p. 101). Effective outcomes are, by design, outcomes to be *relied upon.* Recounting the relevant descriptions of mindful organizing within the literature, Sutcliffe (2018) implies the importance of a supportive leadership that migrates problem resolution across organizational levels to pockets of relevant expertise.

Reliable outcomes sought by *supportive leadership* and achieved by a *deference to expertise*, are, by example, outcomes indicative of mastery experiences. Deferring to the expertise of others is also, by definition, a vicarious experience. Lastly, supportive leaders are socially persuasive (Arzonetti-Hite & Donohoo, 2021). The linking of these two conditions influences three of the four sources for CTE formation.

Empowered Teachers and Commitment to Resilience

To support teachers by deferring to their expertise is to empower teachers to solve problems, resolve issues, and innovate new practices. Innovation and problem resolution both

require team-level learning from mistakes in pursuit of outcomes (Rauter et al., 2018). Weick and Sutcliffe (2015) characterize teams who behave this way as having a *commitment to resilience*. All four teams interviewed made strong references that indicate *commitment to resilience*. Those referenced commitments were enacted in environments populated with *empowered teachers* and *supportive leadership* that deferred to the expertise of the teams.

Empowerment is bestowed upon those believed to have had mastery experiences that deserve the mantle of influence (Bandura, 1997). By extension, empowerment is also a form of social persuasion. When a group *commits* to resilient action, they are, by definition, engaging an affective state. With mastery affirmed through persuasive and supportive leadership, teams' sense of commitment blossoms into stronger CTE beliefs.

Because reciprocal causality is an integral explanation of how efficacy beliefs form (Bandura, 1997), the direction and magnitude of the influence between the EC-CTE and mindful organizing behaviors remain unclear. Understanding such directionality and its magnitude falls outside the scope of this qualitative study. Conditions argued to mediate between and/or moderate the environmental and behavioral conditions may better explain the magnifying and directional reciprocity found within the complex system of collective efficacy conditions.

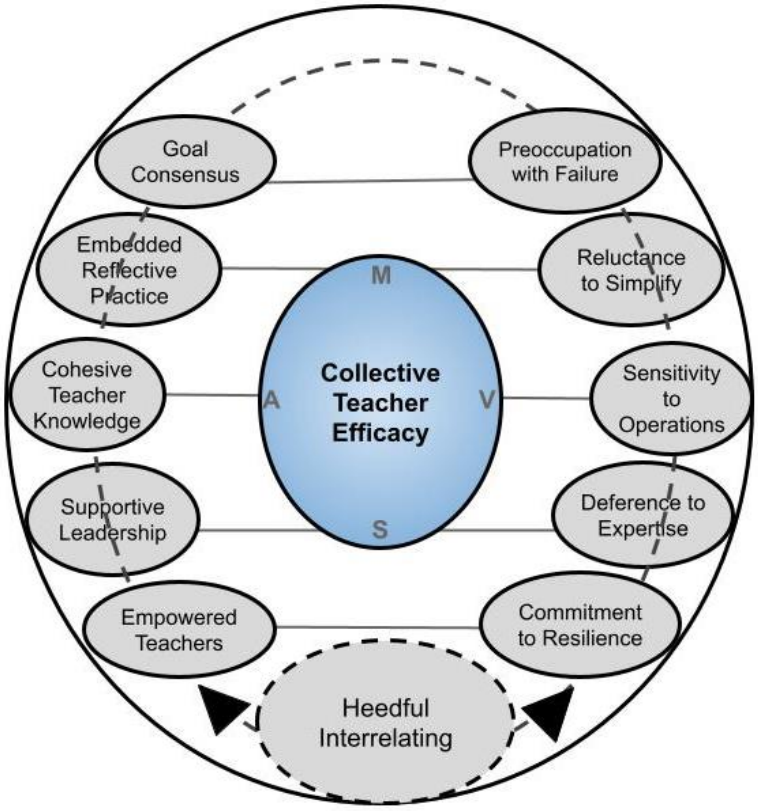
Heedful Interrelating as a Mediator

Researching the role that heedful interrelating plays in university student collaborative groups, Daniel and Jordan (2015) suggest that group "social and cognitive processes can foster or hinder the impact of collaborative learning environments" (p. 34). This is commensurate with Weick and Roberts's (1993) foundational study on the concept of heedful interrelating, or collective mind. The researchers identified that greater levels of heed in the interrelations of fellow group members creates more reliable outcomes in work environments prone to catastrophe. From the relatively catastrophe-free environment of the classroom (Daniel & Jordan, 2015) to the catastrophe-rich environment of the aircraft carrier (Weick & Roberts, 1993), the relational conditions through which teams interact influence the team's ability to

organize effectively and learn productively together (Daniel & Jordan, 2015; Solansky & Stringer, 2019; Stephens & Lyddy, 2016). Figure 4 shows that when the teams interviewed for this study mindfully attend to both personal contributions and interpersonal influences, those heedful interrelations gave shape and dynamics to the linked behavioral and environmental conditions of CTE previously described.

Figure 4

Heedful Interrelating as a Mediating Relational Condition of CTE



Note. Heedful Interrelated is added to the refined a priori linked conditions. Its position within the dashed lines and the arrows moving out from it denote its mediating role between the environmental conditions of the EC-CTE and the behavioral conditions of mindful organizing.

Figure 4 graphically situates the current findings within Solansky and Stringer's (2019) proposition that heedful interrelating conducts collective action. References found within the results of this research indicate that group members from all four cases envision their group as interacting in a set of specific ways for a set of specific reasons, with a set of specific purposes for which they were willing to play a role in achieving agreed upon outcomes. Those roles, identified through heedful interrelating at the bottom of Figure 4, were observed to organize team behaviors in such a way that they might influence the EC-CTEs that were impacting team efficacy beliefs. Other times, team member roles were identified as using the EC-CTE to mindfully organize team behaviors in pursuit of mastery outcomes or finding vicarious influences to bolster group efficacy. Likewise, the ways in which members envisaged their groups, and the ways they interacted in accordance with those representations of the group, provided a sense of comfort, safety, joy, and enthusiasm for their collective work; heedful interrelating contributed to the affective states influencing each teams' belief in their capability to overcome the challenges of teaching during a pandemic.

The ways in which teams in each case studied cogitatively represented their teamwork, and the ways they constructed their interactions in accordance with those representations, were identified to influence the contextual direction and importance of the previous two conditions. Specifically, when contextualizing the results within the relevant literature (Busby & Iszatt-White, 2014; Solansky & Stringer, 2019), heedful interrelating influenced whether the teams relied on EC-CTE to mindfully organize their behaviors, or the teams mindfully organized their behaviors to influence the needed EC-CTEs. Because all four cases held in common team-level efficacious beliefs, heedful interrelating's importance to the formation of CTE beliefs, as depicted in Figure 4, is not directly linked to the four efficacy sources. Rather, heedful interrelating operates between the environmental conditions and behavioral conditions that influence the formation of CTE beliefs.

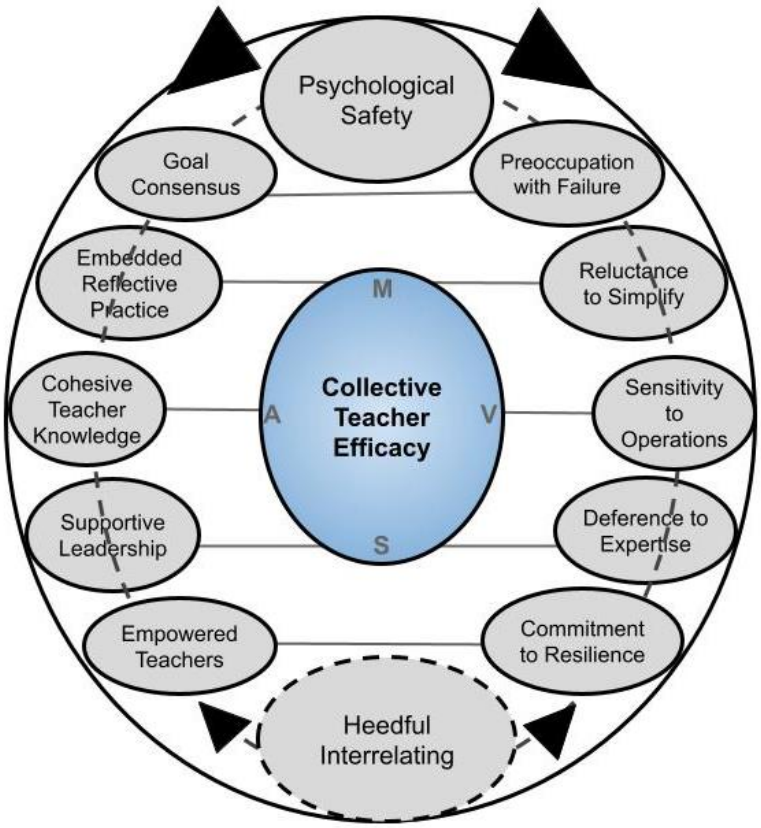
Psychological Safety as a Moderator

Psychological safety describes the shared belief that interpersonal risk-taking in the workplace is perceived by team members as safe (Edmondson, 1999, 2019; Newman et al., 2017). In their systemic review of the psychological safety literature, Newman et al. (2017) contend that much of the recent literature on the topic regards psychological safety as a team-level attribute. The psychological condition of feeling safe to disagree, raise unpopular concern, voice unrecognized failure, and admit mistakes has been found to have a moderating effect on numerous aspects of team behaviors (Newman et al., 2017). Newman et al. (2017) identified within the extant psychological safety research that team learning, creativity, valuing of expertise within team diversity, and even overcoming of the negative effects of geographical dispersion have all been identified as aspects of team life moderated by psychological safety.

Each team within the cases studied expressed a sense of psychological safety. The identified presence of psychological safety allowed the team members interviewed to take risks, speak up when resolutions were not working, and admit their own mistakes. The participating teams' experiences suggest perceived psychological safety contributed to team learning (Edmondson, 1999; Nembhard & Edmondson, 2011; Weiner et al., 2021). Descriptions of team learning behaviors as described by Weiner et al, (2021) with regard to psychological safety in schools during the COVID-19 pandemic are indicative of the coded data for embedded reflective practices, reluctance to simplify, commitment to resilience, and preoccupation with failure. Figure 5 shows psychological safety as moderating the necessary contextual conditions within which the other three conditions were enhanced or inhibited relative to the degree of perceived psychological safety present within the teams.

Figure 5

Psychological Safety as a Moderating, Psychological Condition of CTE



Note. The solid line surrounding the entire figure end extending from Psychological Safety implies the moderating influence it is identified to have on the remaining conditions.

Group trust, described as a willingness to be vulnerable in front of others due to perceived expectations and intentions of others, is conceptually similar to psychological safety, in which the group feels safe to take interpersonal risks (Edmondson, 1999, 2019; Newman et al., 2017). With group trust as an acceptable proxy for psychological safety, the research of Lee et al. (2016) becomes relevant to the results found within the case study data presented in Chapter 4. Using a field examination of 100 work groups in China, the researchers found that group trust had a moderating effect on group efficacy beliefs. The researchers found that

vicarious experience and affective states were most moderated by group trust. Given the greater body of research and the importance of psychological safety conveyed within the referenced data of this study, psychological safety, as displayed in Figure 5, is considered to have a possible moderating effect on the collective efficacy conditions present among the four cases interviewed for this study.

The perceived psychological safety referenced within the results of this study provide the substrate within which the other three conditions identified—heedful interrelating, EC-CTE, and mindful organizing—are healthy enough to influence the four collective efficacy sources, such that they invigorate the teams' collective efficacy beliefs themselves. Team members must trust the expertise of others, and the intentions with which that expertise is shared, in order to draw upon it (Cho, 2022). To find unexpected, potential problems requires a group to be comfortable with each other (Sutcliffe, 2018), while using embedded reflective practice to identify failures, misalignment with goals, and face new challenges (Arzonetti-Hite & Donohoo, 2021). To share unexpected findings, team members must feel comfortable to speak up when uncertainty whispers.

Sutcliffe (2018) argues that team-member voice is a critical tool when mindfully organizing. Sutcliffe further argues that leaders need to establish conditions of respect and trust for voice to become an effective tool. Mao and Tian (2022) found that, among 305 manufacturing employees, relational exchanges between supervisors and employees improved employee engagement when psychological safety was perceived by the employees. When considered in tandem with the EC-CTE identified by Donohoo et al. (2020), supportive leaders activate empowered teachers.

Teams struggle to mindfully organize without the participatory communication that psychological safety encourages (Renecle et al., 2020). Indeed, Weick and Roberts (1993) contend that the collective mind emerges among groups that are empowered to mindfully organize but less so for people who are simply grouped. The negotiated trust among members

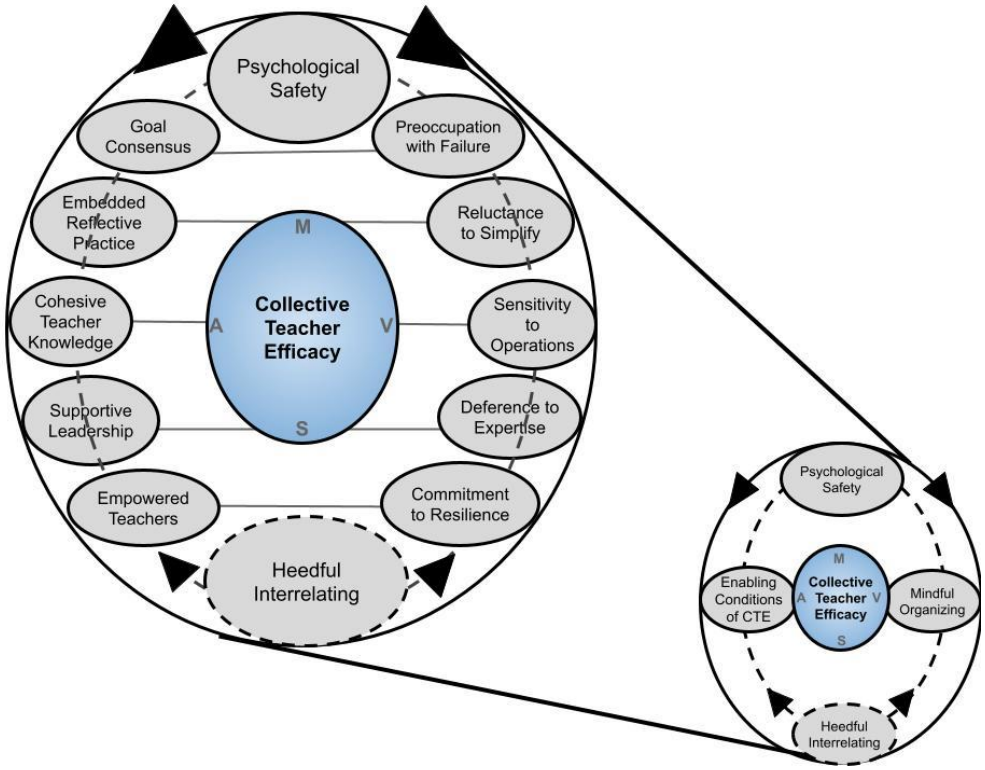
of the group supports their perspective taking, creativity, and team learning from challenges (Cho, 2022). This subsequently suggests that the psychological condition of interpersonal trust inflates or deflates the other conditions through the quality of its presence within the group. Psychological safety appears to filter out members' worries about their interrelating behaviors being perceived with ill feeling. With positive and empowered interrelating remaining, the behavioral and environmental conditions are ripened for collective efficacy-inducing interactions. In this, the complex system of CTE conditions can be seen.

The Complex System of CTE Conditions

Through the detailed descriptions of the component conditions, the whole complex, interacting system of conditions can be examined. Figure 6 illustrates the outcomes of this study. Specifically, it shows that each of the teams expressed strong feelings of psychological safety. The presence of strong psychological safety provides teams with the trust to heedfully interrelate in ways that allow members to collectively organize while being mindful of changing environmental conditions. Social cognitive theory (Bandura, 1997) argues that, as teams continue to process their circumstances and outcomes, collective capabilities are accurately attributed to rightful successes and failures, then rightly linked with emerging tasks to build CTE beliefs.

Figure 6

Evolution of the Complex System of CTE Conditions



Note. The full conceptual evolution of the Complex System of CTE Conditions is mapped. The four overarching and dynamic condition domains are identified in the bottom right of the figure. The solid lines extend to illuminate the details of the four domains so the specific conditions, their interactions, and their roles can be seen in the larger image.

Figure 6 shows the evolving maps from each of the previous sections in one final concept map. The original map of Figure 2 is seen in the lower right-hand corner. It represents the broadest and most simplified interpretation of the results found: four condition domains interact to influence four sources of CTE. The lines extending from the lower map represent the magnification of mindful organizing and EC-CTE to better identify links between component parts as identified within the research and/or the results of this study.

Psychological safety is positioned at the top of the figure. The solid lines extending around the rest of the figure indicate the potential moderating role that psychological safety plays among the other identified conditions. Heedful interrelating is seen at the bottom of Figure 6 with dashed lines extending through EC-CTE and mindful organizing. The dashed lines indicate the potential mediating role heedful interrelating plays between EC-CTE and mindful organizing. As noted previously, each of the four conditions is mapped with a pathway of influence to the four sources of CTE, represented by the initials for each of the sources inside of the centrally positioned CTE beliefs: **M**astery experience, **V**icarious experience, **S**ocial persuasion, and **A**ffective states.

As detailed in the previous chapter, all four teams described a strong sense of interpersonal trust and safety among their team members. The contextual importance of this psychological safety suggests that each team expected its members to be vulnerable, share their perspectives, and identify challenges such that the teams could be successful. Psychological safety was identified as having provided team members with the interrelational trust and bonds that defined each teams' norms. Their various ways of heedfully interrelating within psychologically safe working environments enacted mindful organizing behaviors. Simultaneously, those behaviors drew upon and reciprocally enhanced the EC-CTE. Completing the metaphorical circle, as represented by Figure 6 and the subsequent figures, the strong presence and contextual descriptions of psychological safety within the results suggest it may play a moderating role among the other identified CTE conditions.

Implications

The complex interactions among the four condition domains found within the results of this study provide practitioners, leaders, and policy makers with practical levers that when pulled can activate one or more of the four sources of CTE. Bandura (1997) argues that the conditions in which all experiences occur contribute to, and are filtered through, one of the four cognitive sources of CTE: mastery experience, vicarious experience, social persuasion, and affective

states. By exploring through team-level stories the many ways that efficacious teams interact and in what circumstances different interactions become priority behaviors, the complex system of CTE conditions becomes less tangled, more discernable, and therefore more useable for practitioners, leaders, and policy makers.

The four condition domains that were identified in this study are psychological conditions, relational conditions, behavioral conditions, and environmental conditions. The psychological conditions were contextualized within the extant research (Cho, 2022; Edmondson 1999; Lee et al., 2016; Nembhard & Edmondson, 2011, Renecle et al., 2020; Weiner et al., 2021) as having a possible moderating role among the other conditions that influence CTE. Similarly, heedful interrelating, as a relational condition, was situated within the larger literature (Daniel & Jordan, 2015; Solansky & Stringer, 2019) as having a mediating effect between the EC-CTE and mindful organizing behaviors. Figure 6 provides a conceptual map for practitioners to visualize the four conditions and how they interact with one another in the formation of collective efficacy beliefs. Likewise, Figure 6 provides a guide for teams and leaders to assess the relative strength and influence of any one or combination of some conditions on any other or all remaining conditions. The conceptualization of a complex system of conditions that influence efficacy beliefs allows leaders and educator teams to informally assess the strength of their own conditions and make adjustments with some knowledge of the ripple effect those adjustments will have.

Decision makers and policy makers seeking school improvement efforts, can evaluate team responses to change along the four identified condition domains. Doing so will provide school and system leaders with real-time indications of the relative collective efficacy of teams regarding any given change or disruption. Such indications may offer insight into what conditions need stimulation and support, and what conditions could be leveraged as strengths.

Beyond the practical implications, there are academic implications resulting from this study. There is relatively little CTE research in which small teams of educators make up the unit

of study. Hargreaves and Fullan (2012) argue that small groups of educators will form whether directed to do so or not. By extension, they imply that the composition of schools as organizations is a series of teams, networked or not. Bandura (1997) echoes this belief, identifying the importance of microenvironments of schools as important to the CTE research field. The present study identified important findings regarding antecedents of CTE by focusing on school-based educator teams as the unit of study. The method used to identify efficacious teams for study and the use of focus groups have significant implications for future research.

Regarding the larger body of mindful organizing research, most studies focus on negative possibilities of HROs. *Reliability* implies consistent performance despite the presence of unanticipated disruptions (Busby & Iszatt-White, 2014; Sutcliffe, 2018). Therefore, reliable nonevents—a lack of disabling disruptions—signify mindfully organized efforts (Sutcliffe, 2018). By exploring the interactions of teaching-team members during the pandemic, mindful organizing behaviors were identified as contributing to teams' perceived success during the pandemic. More importantly, mindful organizing was identified to have played an important role in the formation and sustentation of team-level efficacy beliefs. The present research supports the broader calls for extending mindful organizing research (Busby & Iszatt-White, 2014; Su, 2017; Sutcliffe, 2018) beyond the field of HROs.

Recommendations for Action

Collective efficacy among teachers is one of the strongest influences on student outcomes (Goddard et al., 2017). To understand collective teacher efficacy (CTE) antecedents is to categorize, sort, and map the conditions and sources that predispose teachers to believe in their capabilities to overcome challenges and influence outcomes. Mapping the complex system of CTE conditions remains an academic exercise until the conditions can be operationalized to influence a system of collective teacher efficacy beliefs. What follows are recommendations for practitioners, leaders, and policy makers for operationalizing the complex system of collective teacher efficacy conditions.

Leaders and Practitioners

Psychological safety of team members is a supportive leader's first lever in operationalizing teacher efficacy beliefs. Sutcliffe (2018) encourages leaders and organizational members to establish trust and respect across the organization with the intention of amplifying voices of concern, questioning interpretations, and avoiding mindlessness caused by habituation. Introducing models of inquiry, promoting curiosity, and collectively examining ideas and circumstances are behaviors that leaders and practitioners can enact to operationalize psychological safety (Edmondson et al., 2016). Leaders can organize, and practitioners can endeavor to know more about the competencies of their colleagues and how those competencies can support team learning (Edmondson, 2019). Renecle et al. (2020) suggest that a participatory climate in which there is perceived safety for *upward dissent* builds psychological safety, which in turn promotes mindful organizing behaviors. Both leaders and practitioners should self-assess the extent to which leaders encourage, and teachers feel comfortable with, expressing dissenting opinions to supervisors and other leaders. Leaders that model fallibility create a sense of safety for teams to learn from mistakes (Weiner et al., 2021).

Strong relational foundations rooted in norms of respect and contexts of trust catalyze mindful organizing behaviors (Renecle et al., 2020; Sutcliffe, 2018). Based on the findings from this study, such strong relational foundations mediate the links between teams' mindful organizing behaviors and EC-CTE. Leaders working to operationalize CTE beliefs would do well to observe and strengthen heedful team member interrelating. The CTE beliefs of practitioners will strengthen when members are mindful of their own actions as connected to the interactions of the group (Renecle et al., 2020; Solansky & Stringer, 2019). Heedful interrelating is activated when group composition, purpose, and norms are defined (Daniel & Jordan, 2015; Solansky & Stringer, 2019). Practitioners and leaders should engage teams in reflective protocols that ask team members to identify the ways in which they work as a team to produce outcomes, their norms for interacting, and even the metaphors they may use to describe their group. Doing so

highlights overlapping boundaries for the group inside of which members can become more mindful of their role in relation to the roles others have, and how all roles combine to impact group outcomes. Solansky and Stringer (2019) suggest to leaders that they ensure clarity of goals and the importance of varying roles to the effectiveness of the organization. Doing so helps teams remain heedful of what within the school should be relied upon and what is relied on (Busby & Iszatt-White, 2014) throughout shifting contexts.

The importance of the connections between the environmental conditions described by the EC-CTE and the behavioral conditions of mindful organizing may be explained by Weick's (2011) descriptions of closing the perception-conception gap. The EC-CTE lens is one through which leaders and practitioners can more accurately perceive the environmental conditions that strengthen collective efficacy beliefs. The mindful organizing behaviors distill those perceptions into mutually understood concepts so actions steps can be decided. To close the perception-conception gap using the complex system of CTE conditions maps, leaders and practitioners can evaluate the degree to which consensus exists for goals based on teams' familiarity with potential failure identifiers. Likewise, teams can point to possible failures in relation as inhibitors to reliable outcomes (Weick & Sutcliffe, 2015). Discussions from teachers to school and district leaders about potential failures and goal revisions would also give a strong indication about the degree of psychological safety perceived among the team members (Renecle et al., 2020). As another example, leaders should create opportunities for staff members to interact around common, best, and needed practices (Arzonetti-Hite & Donohoo, 2021), while ensuring teams are familiar with available operations that can and do support their efforts (Weick & Sutcliffe, 2015). Intentional interactions such as these move individual and disconnected perceptions along a continuum toward cohesive concepts about priority actions.

Teachers are empowered within environments where they can learn together from the outcomes of their collective efforts, and they have system-level influence based on their embedded and relevant professional expertise (Arzonetti-Hite & Donohoo, 2021). Teams

resolve to re-solve problems when they are empowered to join their expertise in learning from challenges (Weick & Sutcliffe, 2015). Sutcliffe (2018) suggests that mindful organizing produces team intelligence based on interconnectivity. It is within the liminal spaces between human interactions and organizational circumstances where collective efficacy is both needed and formed. The minimum action likely to produce the maximum benefit is to organize, with intention, team member interactions to reflect on past performance in relation to future needs.

Policy Makers

Smart organizations, and by extensions smart teams, thrive in environments that foster interconnectivity and are permeated by respect and interpersonal trust (Edmondson, 1999; Edmondson et al., 2016; Lee et al., 2016; Nembhard & Edmondson, 2011; Sutcliffe, 2018). Busby and Iszatt-White (2014) describe mindful organizing as a collective cognitive architecture. That same conceptualization of architecture can be extended to any of the CTE conditions identified in this study, or the complex system of CTE conditions as a whole.

Policy makers should ensure that the school-based and system-wide social architecture is intentionally designed to sustain interconnectivity between team members, various teams, and other school-based educator teams. Educators need time in the presence of one another to think and discuss (Arzonetti-Hite & Donohoo, 2021) what it means to be a team, to be a part of the specific team(s) they are on, and what their role is in relation to the roles of others (Renecle et al., 2020; Solansky & Stringer, 2019). In addition to policies that design and sustain interconnectivity between organizational members, policy makers should set policies that empower teachers to lead problem resolution efforts, elevate expertise based on requisite need, and amplify voices with unique perspectives and organizational counternarratives (Weick & Sutcliffe, 2015). Such policies promote what Preston and Donohoo (2021) refer to as *co-frontation*, or collectively confronting priority needs in ways that rely on and enhance psychological safety.

Recommendations for Further Study

The present study identifies important contributions to both the field of CTE and mindful organizing research respectively. Notable limitations, however, were present within the study. The limitations within the study provide opportunities for future research, while providing boundaries for contextual relevance of the findings.

With relationships defined through lived experiences, there is strong reason to apply the findings of this study to quantitative methods. Tarka (2018) argues that a challenge for analysis extending from structural equation modeling is the tendency to build models without prior grounding, or attribute directionality without testing rival hypotheses. The present study provides such grounding to examine relationships and potential directionality.

Although the present study met research standards for a qualitative, multiple-case study (Yin, 2018), the overall sample size was small. The findings can be generalized to educator teams in similar settings as those in which the case-study teams worked; however, the relationships between conditions remain theoretical. This study provides direction to apply the significant statistical force of, and resources needed for, advanced factor analysis and equation modeling. Such research could statistically evaluate the claims made within this study regarding the moderating and mediating roles of psychological safety and heedful interrelating respective to the complex system of conditions influencing CTE beliefs. Similar research could also evaluate the experiential link between EC-CTE and mindful organizing identified within the findings. Lastly, quantitative methods could be used to test the relationships identified between all four condition domains as they are described in the complex system of conditions influencing CTE.

Time and resources were limited when conducting this study; however, the importance of studying the formation of collective efficacy beliefs at the team level underscores the results of this study. Much of the social cognitive theory research uses quantitative surveys to generate findings (Donohoo, 2018; Ramos et al., 2014); however, the mindful organizing research often

relies on qualitative studies (Renecle et al., 2020; Sutcliffe, 2018) for related findings. Braiding these two theories together may have value beyond the theoretical framework of this study. Mixed method designs used to study CTE beliefs and mindful organizing behaviors, specifically within public schools, will offer more nuanced and practical understanding for each concept, the combination of the concepts, and their influence on public school environments.

Mindful organizing has had little academic connection to public schools (see Hoy, 2003 Marzano et al., 2018). Likewise, heedful interrelating's similar connection to HROs has limited its application beyond high-risk organizations (Busby & Iszatt-White, 2014). Psychological safety research stretches beyond high-risk organizational environments, but stalls with learning teams in creative industries (Edmondson et al., 2016; Newman et al., 2017). To date, limited research exists that explicitly connects public schools and the three additional condition domains identified within this study as being crucial to the formation of CTE beliefs. The absence of these constructs as influences in school settings represents significant opportunities for future research in education, educational leadership, and school change efforts.

Lastly, Anderson (2022) suggested that the stories teams tell themselves about their experiences create CTE narratives. Those narratives evaluate mastery experiences, identify vicarious experiences, generate social persuasion, and influence the affective states of the group. There is the potential that the CTE narratives of school-based educator teams also influence the heedful interrelating of group members. The CTE narratives may contribute to the emergence of a collective mind among the group. Based on the findings within the present study, it is plausible that CTE narratives are shared between members of the groups interviewed which, in some way, may be connected to team member heedful interrelating. Future research in this area could further validate the concept of CTE narratives while also providing insight into the formation of interrelating behaviors that influence efficacy beliefs.

Conclusion

The present research was designed to study the lack of understanding among researchers and public school educators regarding CTE antecedents and the conditions that support them (Donohoo, 2018; Donohoo et al., 2020; Ramos et al., 2014; Tschannen-Moran et al., 2014). The purpose of this qualitative multiple-case study was to better understand collective teacher efficacy antecedents and the sources that support them through team member interactions within school-based teams in public elementary schools. The study design separated the known CTE sources identified by Bandura (1993, 1997, 1998) as antecedents from the conditions that support CTE belief formation. To meet the purpose of the study with questions that would address the research problem, the following research questions were designed:

1) How can interactions among members of school-based teams within public elementary schools be used to understand collective teacher efficacy antecedents?

2) How can interactions among members of school-based teams within public elementary schools be used to understand the conditions that support collective teacher efficacy?

A comprehensive, thematic literature review provided substantial argumentation for an integrative theoretical framework that braided social cognitive theory with complexity theory. Collective teacher efficacy was conceptually described within the context of social cognitive theory (Bandura, 1997). Schools were contextualized as complex organizations (Fidan & Balci, 2017) and therefore situated within the complexity theory literature (Mendes et al., 2016; Tourish, 2019. Specifically, the relevant CTE research was cross referenced to conceptually link the EC-CTE with mindful organizing (Weick & Sutcliffe, 2015) behaviors as a prior conceptual explanation for influencing conditions of CTE beliefs. Lastly, multiple-case study design requires that cases be bound in some way (Yin, 2018. The cases included in the present study were focused on the interactions between members of school-based educator teams during the

COVID-19 pandemic. As such, the literature review concluded with a review of team organizing behaviors and team learning (Rauter et al., 2018 Strahan née Brown et al., 2019; Yoon & Kayes, 2016) when disrupted by external perturbations.

The findings detailed in the previous chapter were sorted and organized into a coherent analysis in Chapter 5. Starting with the end in mind, the four conditions identified within the findings were conceptualized into an overview of the system of complex CTE conditions and how those conditions interact to influence CTE beliefs. To answer the research questions, greater detail regarding each of the four conditions, their contextual interactions derived from the research data of this study and the extant literature, and their influence on the sources of CTE were provided in subsequent sections of this chapter. The a priori link between EC-CTE and mindful organizing behaviors affirmed in Chapter 4 was refined within Chapter 5. Five sets of dominant links, as seen within the study data and affirmed within the literature, were explained. The specific links identified between EC-CTE and mindful organizing were:

- *goal consensus* and *preoccupation with failure,*
- *embedded reflective practice* and *reluctance to simplify,*
- *cohesive teacher knowledge* and *sensitivity to operations,*
- *supportive leadership* and *deference to expertise,*
- *empowered teachers* and *commitment to resilience.*

The unexpected findings from Chapter 4 of psychological safety and heedful interrelating were also integrated into the complex system of CTE conditions in Figure 4 and Figure 5, respectively. Heedful interrelating was argued to have played a mediating role between the EC-CTE and mindful organizing behaviors. To complete the complex system of conditions that influence CTE beliefs, psychological safety was argued to play a moderating role among all three conditions.

The concept maps developed throughout this chapter, specifically Figure 6, can be used by practitioners, leaders, and policymakers to operationalize and scale the two functions of

efficacy information processing: minding potential sources of efficacy and the heuristics used to leverage those possible sources into efficacy beliefs (Bandura, 1997). The system of complex conditions that influence CTE beliefs, as conceptualized in Figure 6, are the conditions to which organizational mindfulness—mindful organizing behaviors scaled across the group or organization (Vogus & Sutcliffe, 2012; Weick & Sutcliffe, 2015)—should be applied. Such collective attention highlights for teams and leaders a more robust and varied set of applicable efficacy indicators when considering group capabilities to successfully navigate unfamiliar events. To fulfill the two functions of efficacy information processing (Bandura, 1997), the complex system of conditions that influence CTE beliefs can also be used to develop the heuristics that teams and leaders should use to integrate team experiences into CTE beliefs.

Lastly, recommendations for future research were considered. The recommendations, considered broadly, identify future research opportunities for expanding the scale of the present research. Recommendations for using the present study as a model of future quantitative studies were outlined. The existence, benefits, and implications of mindful organizing in public schools were suggested for potential study. Lastly, the role that CTE narratives might play in the heedful interrelating of efficacious teams was considered for future study.

The intention throughout this study was to better understand the complex array of CTE antecedents. To fulfill that intention, the interactions between members from each of the four cases of efficacious school-based educator teams during the COVID-19 pandemic were studied. Those interactions revealed that groups of efficacious teachers are empowered within environments where they can learn together from the outcomes of their collective efforts and have system-level influence based on their embedded and relevant professional expertise (Arzonetti-Hite & Donohoo, 2021).

Mindfully organizing collective teacher efficacy within the context of psychologically safe teams, and in which members heedfully interrelate, reciprocally requires and promotes team learning through member interconnectivity. The complex system of CTE conditions

strengthened the participant teams' beliefs that they could successfully surmount the degree of disruption and uncertainty emerging at any given time during the pandemic. Given the influence of such mastery experiences, those team-level beliefs and resulting benefits are likely to persist long after the disruptions of the pandemic subside.

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Appendix:

Focus Group Interview Protocol

Greeting and Introduction:

Hello, _____.

Thank you so much for volunteering to be interviewed. I know this is a difficult time. I know how many other obligations you have! The fact that you would give your time to this study means a lot to me and to the study.

The interview should only last about 45 minutes. I will ask you some very broad questions. Answer them with stories, quotes, and examples as much as possible. Keep your answers focused on your experiences throughout the COVID-19 Pandemic. I may follow up and ask for more detail. There are no wrong answers for any of these questions, only the experiences. It's also important that everyone share their experiences. That means that difference is important. Focus groups do not look for consensus; they look for a full picture of experiences. The questions are semi-structured but it's best if we keep the interview as conversational as possible.

Does that make sense to you?
(pause)
Are you comfortable with that?
(pause)

Everything you say is confidential. No identifiable information will be shared with anyone. Any data from the interview that is shared will be redacted to maintain the confidentiality of anyone or place that might be mentioned. The interview will be recorded, but only for the purpose of transcribing it later.

Do you agree to be recorded?
(If yes, "Thank you!" If no, "Thank you for your honesty. I will take detailed notes only.")

Do you have any questions for me so far?
(Pause for response)

Please know that you can stop the recording any time for any reason. You can also tell me to take something out if you do not want me to record it.

The purpose of this interview is to collect stories about how you as a team has interacted during the pandemic that might contribute to your collective belief in your capabilities to positively affect outcomes in (School name). Your interview will contribute to a better understanding of the social sources and conditions that shape the collective efficacy beliefs of school-based educator teams.

Opening
Tell me your name, how you identify your gender, and how long you have been working on this same team with other members here today?

Introduction
On a scale of 1-5, with one being hardly ever and 5 being multiple times a day, how often do you interact with each other?
(Extension) how much of those interactions are about work related needs?

What do you know about collective teacher efficacy?

What is the most meaningful or exciting part of interacting with this team?

(Extension questions) What role does conflict play in your team interactions?
What role do "what if" scenarios play in your team interactions?

There is so much we can say about working through the pandemic, but a picture is worth a thousand words. Silently, I would like you all to participate in drawing a picture of your teamwork throughout the pandemic. (Large chart paper and colored pencils will be available). **Skill with drawing is not needed, stick figures, labels, anything to represent with pictures your experience**. (The experience level sets the room. It engages all participants setting the expectation that everyone participates. It also serves to activate recall of experiences. The pictures are not used for analysis but may be referenced if relevant evidence exists.

Looking at specific parts of the drawing, link them to specific experiences? What story was in your mind when you drew something specific in the picture?

So clearly the pandemic was a challenging team experience. Was it the toughest experience you have ever had in teaching?

How do you as a team bounce back, or maintain your belief that you can succeed with your students? Silence will be used to encourage deeper stories after anticipated brief responses. If needed… **What stories might be an example of how your work with each other helps or hinders your resilience?**

Describe the process they go through to find and address problems?
(Probe: How do they look for the potential problems? May need specific examples like student behavior, classroom – or virtual learning management, and academic interventions)

How do you know what one another is really doing with your students?
Is it important to know that? How does that help you or does it get in the way?

How do you, as a team, approach situations in which you don't have the needed skills or resources? Follow up - **Who do you approach?**

This is my last question.

Tell me a story that describes how your team approaches failure?

Closing

Before we finish, is there anything else about the collective efficacy and mindfulness experiences of learning teams that you think would add to the study? Is there anyone you think I should interview that would have learning team stories that might add to this study?

Thank you so much for being a part of this study. If you think of anything else, please reach out. As I work through the transcriptions, redaction, and coding, of this interview, should I have any other questions, would you mind if I follow up?

Thank you again.
(End Recording)