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**A CASE ANALYSIS OF COLLECTIVE TEACHER EFFICACY IN A PRACTITIONER
INQUIRY COMMUNITY**

A Dissertation in
Curriculum and Instruction

by

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ABSTRACT

Collective teacher efficacy has gained growing attention in the field of teacher education due to its potential to enhance student experiences and life chances, as well as foster positive teaching practices and dispositions. It is believed that an inquiry-based learning community provides a promising environment for the development of collective teacher efficacy. However, limited studies have specifically examined the development of collective teacher efficacy among educators who engage in professional learning within contexts such as inquiry communities. In response, this case study was conducted in order to investigate the development of collective teacher efficacy among educators who were engaged in a practitioner inquiry community within the context of a graduate seminar.

This study features a case analysis of collective teacher efficacy in a practitioner inquiry community. Four educators were selected as primary participants, while five were selected as secondary participants. They all completed a series of five semi-structured interviews, which served as the study's primary data sources. Secondary data sources included artifacts, field notes, and analytical memos. Data from these multiple sources was analyzed using a framework designed to study collective teacher efficacy within a specific context. This analysis led to the generation of themes to describe the contextual factors of the inquiry community, the aspects of experiences that tapped into the efficacy-shaping sources in the inquiry community, and the educators' beliefs regarding collective teacher efficacy in this specific inquiry community.

The findings of this study reveal the intricate processes of collective teacher efficacy development and demonstrate the value of collective teacher efficacy development for educators. All sources of collective teacher efficacy are evident and influential. The findings suggest a need to reconceptualize the four sources in an expanded view of educators' professionalism. The study's findings also indicate the need to design inquiry communities in a direction that develops

collective teacher efficacy serving both students and educators. This study contributed to the literature by documenting how the four efficacy-shaping sources played out in an inquiry community.

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Chapter 1

INTRODUCTION

The purpose of this study is to understand and characterize the development of collective teacher efficacy among teachers who are engaged in a practitioner inquiry community that centers educational equity. In Chapter 1, I establish the need for a study on the development of collective teacher efficacy in teacher education. I begin with a brief critique of the recent teacher education movement. Next, I frame the study's problem and argue for its significance. I offer a concise statement of the study's scholarly, practical, and personal purposes (Maxwell, 2013). I conclude the chapter with a discussion of the study's potential contributions and an overview of the dissertation's remaining chapters.

Background of the Problem

The notion of teachers as a team of professionals who work collaboratively towards shared goals and respond to the pressing, evolving needs of students and families is growing in size and importance. The perennial pandemic has reminded us that our realities are ever changing and challenges continuously emerging. Searching for fixed solutions and fixed practices does not work, and therefore should not be considered as the goal for pursuit. This means that in teacher education, we must shift away from a focus on finding solutions and instead towards embracing "challenges" and "problem-solving" (Hallman et al., 2022). In this shift towards embracing challenges, teachers perceive themselves, and are perceived by others, as professionals who make critical decisions based on their professional judgment; they are positioned in agentic ways in relation to their students and classrooms (Hallman et al., 2022). The call for this shift asks that in

teacher education, we work towards developing adaptive teachers who are prepared to rise to challenges.

Another particular concern raised is about the seeming overemphasis on individual teacher development. Michael Fullan, the director of Global Leadership, has been devoted to reforming education for the moral purpose of all children's learning. After years of working with local leaders and policymakers, Fullan (2021) recognized the problem with individualism in teacher education, stated, "arising from an individualistic tradition, various forms of collaboration began to occur over time but, by and large, these early forms tended to be superficial" (Fullan, 2021, p. 23). Collaborative work, built on the image of self as a teacher and for the benefit of individual classrooms, exerts limited impact and does not lead to system change that we need and desire. Fullan argued that education reforms that truly improve student learning require a profound and whole system change. These education reforms require efforts and missions beyond individual teachers and classrooms. Fullan proposed that we pay attention to the development of social intelligence, which is "the propensity to work with others to achieve common goals" (p. 23). There is a need for teachers to see themselves as members of the teaching community, so that individual and collective efforts can be part of the larger systemic change. To bring about the systemic change we desire, we need to put value and effort into the development of collective identity and action.

This development of collective identity and action is known as "collective teacher efficacy." Collective teacher efficacy involves teachers' collective identity and the faith in their capability to perform actions that can positively support student learning. Collective teacher efficacy is defined as "educators' shared beliefs that through their combined efforts they can positively influence student outcomes, including those who are disengaged, unmotivated, and/or disadvantaged" (Donohoo, 2018). Collective teacher efficacy comprises more than confidence or judgement of the group capability. Such collective beliefs could exercise human agency by

motivating teachers to take actions and collaborate purposefully to achieve the collective educational goals. In other words, teachers who have a strong belief in collective efficacy show a commitment to shared goals and a commitment to collaborating with others towards these goals (Bandura, 1997; Goddard et al., 2000). Such a construct indicates a shift from the image of self in one's classroom to the image of self as part of educational communities that work towards improving student learning. If we are to prepare teachers for contributing to change that could advance equity and social justice on a larger scale, we need to understand how we could support teachers to develop collective teacher efficacy in teacher education. Collective teacher efficacy is a construct in need of thorough understanding in teacher education.

Conceptualizing the Research Problem

The concept of collective teacher efficacy has become increasingly important for its role in developing teachers to respond to novel, complex challenges and promote the wellbeing and learning progress of all children. A considerable amount of literature has recognized the impacts of collective teacher efficacy on teaching and learning. Recent evidence shows that collective teacher efficacy is among the most important factors that considerably accelerate student achievement (Hattie, 2019), and is highly associated with the closing of achievement gaps (Hite & Donohoo, 2021). In addition, extensive research has shown that collective teacher efficacy is associated with many characteristics of adaptive teachers. Teachers with high collective teacher efficacy are found to take more risks to innovate and meet students' learning needs (Wilcox et al., 2014), approach work with more diligence and tenacity (Goddard et al., 2004b), and persist in teaching efforts despite encounters with temporary setbacks and failures (Hoy et al., 2002). Lyons et al., (2016) also found that teachers with a strong sense of collective teacher efficacy tend to expand communities by engaging parents as part of the team. Overall, teachers with a sense of

collective teacher efficacy are motivated to employ more inclusive, resilient approaches to working with students and other partners, such as parents.

Despite the recognition of the importance of collective teacher efficacy, the majority of collective teacher efficacy studies focused mainly on measuring the level of collective teacher efficacy in schools and its associated outcomes related to teaching and learning. It appears that the question of how to foster the development of collective teacher efficacy has not yet received the attention it should. It is not clear how collective teacher efficacy is shaped (Donohoo, 2018) and what causes teacher efficacy to increase or decrease over time (Takahashi, 2011). The knowledge about how collective teacher efficacy forms and evolves is important in informing teacher educators and program designers about how to foster the development of collective teacher efficacy.

One main obstacle in our understanding of the development of collective teacher efficacy is the lack of rigor in research methodology and the misalignment of theory and methods. Collective teacher efficacy is “an emergent group-level attribute” (Bandura, 1977, p. 478), which means that it takes time to converge “group members’ interdependent perspectives on group capability” (Bandura, 1977, p. 478). However, most studies use self-report scale (e.g., Goddard’s Collective Teacher Efficacy Scale) to measure collective teacher efficacy; such an approach does not permit a deep dive into the depths of collaboration and efficacy development within professional learning (Loughland & Ryan, 2022). In addition to the method used, Hoogsteen (2020), through his critical review, found that most studies collected one-time data to measure the perceptions of collective teacher efficacy (e.g., Loughland & Nguyen, 2020), and the timing of when collective teacher efficacy is measured was often not indicated explicitly in the studies. This lack of attention to the temporal dimensions of collective teacher efficacy poses a challenge for us to assess whether collective teacher efficacy changes over time. Little information about

when collective teacher efficacy is assessed also adds to the difficulty to identify what incident or interaction might contribute to the development of collective teacher efficacy.

In addition, there has not been much detailed descriptions of the contexts in studies of collective teacher efficacy. Most studies adopt a decontextualized approach, providing little information about the characteristics and culture of the organizations or communities. In her review, Donohoo (2017) also noted that most studies did not reference to the sources of collective teacher efficacy within context. It can be very problematic to interpret the development of collective teacher efficacy without sufficient background knowledge about the characteristics of the organizations or learning communities as well as interactions and events within the culture. There are still uncertainty how professional learning structures could be leveraged to foster collective teacher efficacy (Donohoo, 2017; Tschannen-Moran & Hoy, 2001) and how teachers tap into sources of collective teacher efficacy within professional learning (Donohoo, 2017, 2018).

To promote the development of collective teacher efficacy, teacher educators or leaders need knowledge about how collective teacher efficacy develops, and under which conditions it develops, so that we are working towards nurturing the optimal conditions for teachers to flourish. Research suggests that future studies should provide detailed descriptions of professional learning designs, explicitly tied to the sources of collective teacher efficacy (Donohoo, 2017). To achieve alignment between theory and methodology, multiple entry points into the research is needed (Donohoo, 2017). Among the varied professional learning designs, scholars have particularly called for research that considers professional learning where a community approach (Takahashi, 2011) and an inquiry-based approach is taken (Donohoo, 2017).

The practitioner inquiry community is one form of professional learning that engages educators to respond to challenges in teaching and learning in community. The practitioner inquiry community features a systematic, intentional study by educators of their own practices

(Cochran-Smith & Lytle, 1993, 2009). After teachers identify their “felt difficult and real-world dilemma,” teachers produce and analyze a wide variety of data to gain insights into problem-solving actions (Dana & Yendol-Hoppey, 2020). The inquiring process prepares teachers to take up challenges that arise in the classrooms and respond with the goal of improving student learning. While inquiry is utilized as a tool for transformative learning, the community functions to facilitate the intellectual, social, and emotional development of teachers. When an inquiry community approach is adopted in guiding teacher collaboration, it supports teachers to transform existing relationships, build purposeful connections among and beyond learning partners, and craft new professional identities to align with their practices (Wolkenhauer et al., 2022). The important role that a community plays in efficacy development was indicated by Takahashi (2011). He highlighted that teachers’ social environment plays a powerful role in shaping efficacy beliefs, especially when teachers study their own practices collaborative (Takahashi, 2011).

According to Sola Takahashi (2011),

Teachers’ reifications of data and the procedures of data analysis carried with them certain implicit message about the responsibility of teachers and their capacity to improve. In other words, how teachers made meaning of their work in their communities of practice connected to certain conceptualizations about what it means to be a teacher in their context, and these conceptualizations included facets of strong efficacy beliefs. (p. 739)

The potential for collective teacher efficacy to emerge and flourish in a practitioner inquiry community is also supported by experienced scholars in the field of practitioner inquiry. Dana and Yendol-Hoppey (2020) very recently identified the development of collective teacher efficacy as an additional benefit for teachers to engage in collaborative inquiry. However, no research has investigated the development of collective teacher efficacy in a practitioner inquiry community in any systematic way that could advance our understanding of collective teacher efficacy.

Thus, the problem this study seeks to address is the lack of deep understanding of the development of collective teacher efficacy in learning communities, specifically practitioner inquiry communities. The study seeks to understand what it means for collective teacher efficacy to be emergent, and what it means for collective teacher efficacy to develop over a period of time. I selected the practitioner inquiry community as the context for study for its unique characteristics in responding to challenges collaboratively. The study aims to provide rich characteristics of what the development of collective teacher efficacy entails in this particular context. Research transparency, especially data transparency, is central to this study.

Research Purposes

This dissertation study has three purposes (Maxwell, 2013). This study's scholarly purpose is to understand and characterize the development of collective teacher efficacy beliefs among teachers who are engaged in a practitioner inquiry community that centers educational equity. Its practical purpose is to inform the work of teacher educators who design and facilitate practitioner inquiry communities. Finally, the personal purpose is to inform my future work with pre-service teachers, in-service teachers, and fellow teacher educators.

Significance of the Study

The study contributes to two strands of literature. First, the study contributes to the literature of collective teacher efficacy, with a particular focus on the development of collective teacher efficacy over time. It responds to the calls of senior scholars of collective teacher efficacy, such as Donohoo (2018), who have observed a clear need for such studies in the unique context of inquiry-based learning communities. Second, the study contributes to the literature of

practitioner inquiry communities in teacher education. Similarly, it responds to the calls of senior scholars of practitioner inquiry, such as Dana and Yendol-Hoppey (2020), who recently recognized collective teacher efficacy as a potential outcome of teachers' engagement in practitioner inquiry communities.

Dissertation Overview

In Chapter 1, I argued that a study of the development of collective teacher efficacy in the practitioner inquiry community is needed. I began with an overview of the educational reform movement. Next, I conceptualized the research problem, focusing on the lack of rigorous, transparent research studies on the development of teacher efficacy beliefs and how this constitutes an issue for advocates of studies conducted in practitioner inquiry communities. I briefly outlined the study's purposes, and I concluded with a statement of the potential significance of the study.

In Chapter 2, I review conceptual and empirical literature pertaining to the construct of collective teacher efficacy and practitioner inquiry community. I propose a framework to study the development of collective teacher efficacy in a contextualized approach, informed by the review of literature. I propose the study's research question. In Chapter 3, I link the study's purposes, research question, and framework by outlining the research approach. Chapter 4 presents the study's key findings through a case analysis of what contextual factors and sources of the study participants perceived as supporting their collective efficacy, and how they understood their collective efficacy beliefs. Chapter 5 concludes the dissertation with a discussion of the study's contributions and its implications for practice and future research.

Chapter 2

A Review of Literature

The review is organized into the three major themes found in the literature. In the first section, I open with a review of the literature on the major construct to be studied—collective teacher efficacy. Within this first section, the sub-themes are theoretical, conceptual, and methodological underpinnings. In the second section, I turn to a review of the literature on the context, which in this case is practitioner inquiry communities. Within this second section, the sub-themes are the history and the terminology of practitioner inquiry, its pathway to equity, and the benefits of practitioner inquiry communities. In the third section, in an effort to synthesize collective teacher efficacy and practitioner inquiry communities, I look at these two concepts together with arguments on the need for research with primary focus on the development of collective teacher efficacy in inquiry-based learning communities. I conclude by presenting the research questions that drive the research methodology to be outlined in Chapter 3.

Conceptual Framework of Collective Efficacy

In this section, I begin with a review of the three theoretical underpinnings of teacher efficacy in general. Then, I discuss the different conceptual underpinnings of collective teacher efficacy. Finally, I review some widely-used methods to study collective teacher efficacy, and I research into and critique how recent studies investigate collective teacher efficacy.

Theoretical Underpinnings of Teacher Efficacy

Central to the construct of teacher efficacy beliefs are two schools of thoughts: Rotter's (1966) social learning theory and locus of control theory as well as Albert Bandura's (1977, 1986, 1997) social cognitive theory. Grounded in social learning theory, Julian Rotter (1966) published an article entitled "Generalized Expectancies for Internal Versus External Control of Reinforcement," emphasizing the role of expectancies in determining behavior. To understand the behaviors in classrooms, Rotter pointed out two types of control, internal or external. The beliefs of internal control occur when teachers contribute student learning to the impact of their teaching activities; in other words, teachers believe they can control student learning. The beliefs of external control occur when teachers consider student learning to be affected by the environment rather than by their teaching efforts. The concept of internal and external control was later extended to literature on efficacy. Inspired by Rotter's (1966) article, the RAND researchers studied the effectiveness of various reading programs and interventions. They posed the question, "Does control of reinforcement lay within the teachers themselves or in the environment?". Within this theoretical lens, teacher efficacy is understood as the extent to which a teacher believes that student learning is in the hands of the teacher, that is, internally controlled. In short, within the social learning theory, efficacy beliefs are formed when people recognize their ability to control future events, as opposed to external forces.

Later in 1977, Bandura defined self-efficacy based on Social Cognitive Theory. In his 1977 article "Self-efficacy: Toward a Unifying Theory of Behavioral Change," Bandura (1977) described perceived self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p.3). The key to forming efficacy beliefs, according to Bandura (1977), lies in the perceptions that people have toward their

capacity to complete tasks or goals, to put into practice the courses of action. In other words, the formation of the efficacy beliefs is cognitive work.

Bandura (1977) differentiated his conception of efficacy based on social cognitive theory from the conception of efficacy based on Rotter's Locus of Control Theory. While in Rotter's (1966) internal locus of control, efficacy is built on the recognition of the relationship between actions and outcomes, Bandura's (1977, 1986, 1997) social cognitive theory focuses only on one's beliefs about individual or group capability to produce certain actions. Roger Goddard, Wayne Hoy, and Anita Hoy (2000) provided an example to illustrate such differences; they explained, "one may believe that a particular outcome is internally controllable, that is, caused by the actions of the individual, but still have little confidence that he or she can accomplish the desired actions" (p. 481). Despite its difference, Tschannen-Moran et al. (1998) integrated the two theories to develop a model of teacher efficacy, which was subsequently extended by Goddard et al. (2000, 2004a) as a model of collective efficacy. The integration of two long-standing theoretical strands of efficacy offers a more comprehensive understanding of how and why efficacy beliefs develop (Adams & Forsyth, 2006).

The concept of efficacy beliefs that emerged from social cognitive psychology has dominated the field many years until Takahashi (2011) who recently challenged such theoretical underpinnings. He critiqued that this approach strictly positions individual cognitive processes as the central mechanism of belief development, because it treats context as a series of factors separate from individual and thus leads to a limited conceptualization of the role of context in teachers' efficacy belief development. Takahashi (2011) believed "teachers' meaning-making in their communities of practice shape their efficacy beliefs" (p. 733). He argued in situations where teachers engage in collaborative learning, a sociocultural perspective should be incorporated so as to attend to the role of implicit negotiations of meaning among individuals.

Conceptual Underpinnings of Collective Teacher Efficacy

In this section, I review two approaches to conceptualize collective teacher efficacy. The first way to conceptualize collective teacher efficacy was postulated by Goddard et al. (2000, 2004a), focusing on the formation and the influence of collective teacher efficacy. The second way to conceptualize collective teacher efficacy was developed by Donohoo and colleagues (2020, 2021), including the enabling conditions of collective teacher efficacy. Different from Goddard et al., the approach taken by Donohoo and colleagues (2020, 2021) considered the contextual factors that contribute to the formation of collective teacher efficacy. I will begin a review of the two conceptual underpinnings and explain how they inform my study.

The model of collective teacher efficacy was first developed by Goddard et al. (2000, 2004a), focusing on the formation and the influences of collective teacher efficacy, as shown in Figure 2-1. The scholars developed the model of collective teacher efficacy based on Bandura's (1997) self-efficacy formulation and the model of teacher efficacy by Tschannen-Moran et al. (1998). Their simplified model, developed in 2000, particularly elaborated on the emergent aspect of this construct by looking into the cognitive process- how collective teacher efficacy comes into being. Informed by Bandura (1997), they emphasized what is fundamental in the creation of collective teacher efficacy (Goddard et al., 2000, 2004a) are the four sources of self-efficacy information (Bandura, 1986, 1997), which include mastery experience, vicarious experience, social persuasion, and emotional state. However, they highlighted what is critical about the formation of collective teacher efficacy beliefs is the cognitive processing and interpretation of the four sources of information. In addition to the four sources, informed by Tschannen-Moran et al.'s (1998) model of teacher efficacy, they included the concepts of group competence and task analysis. Rather than functioning respectively, they stressed that "both analysis of the task and assessment of group competencies interact to orchestrate a conception of collective teacher

efficacy” (p. 501). Goddard et al. (2000) concluded that central to the formation of collective teacher efficacy is the attributional analysis and interpretation of the four sources of information. Their model sheds light on how collective teacher efficacy is a set of social cognitive processes.

In 2004, Goddard and colleagues refined the conceptual model by placing the influence of collective efficacy beliefs in relation to organizations. By highlighting the relationship between collective efficacy beliefs and an organization’s culture and goal attainment, they emphasized the influence of collective teacher efficacy on teaching and learning through teachers’ sense of efficacy. Although Goddard et al. (2004a) clearly acknowledged that “school contextual factors influence teachers’ perceptions of self efficacy for educating students successfully” (p.8), they treated contextual factors separately from the formation of efficacy beliefs. Guba and Lincoln (1981) asserted that “it is virtually impossible to imagine any human behavior which is not mediated by the context in which it occurs” (p. 62). We need insight into the particulars of how and why something works and for whom it works within the contexts of a particular classroom (Cochran-Smith & Lytle, 1993).

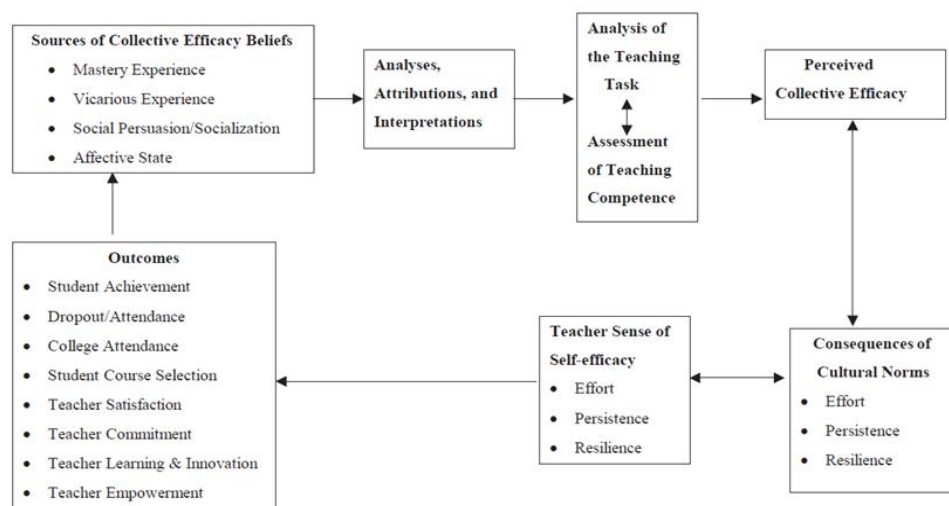


Figure 2-1: Proposed model of the formation, influence, and change of perceived collective efficacy in school (Goddard et al., 2004a).

Recognizing how the previous studies lacked the consideration of contextual factors that contributed to the formation of collective teacher efficacy, Jenni Donohoo and her colleagues developed a model that situates the development of collective teacher efficacy in context. In 2020, Donohoo, O'Leary, and Hattie drew on relevant literature of collective teacher efficacy and validated with empirical evidence from two schools. They found five enabling conditions that foster collective teacher efficacy. These include empowered teachers, embedded reflective practices, cohesive teacher knowledge, goal consensus, and supportive leadership. Later in 2021, Donohoo, joined by Stefani Hite, incorporated the enabling conditions into a model for leading collective teacher efficacy in schools. As illustrated in Figure 2-2, in this model, they conceptualized how to lead collective teacher efficacy by considering the five enabling conditions (as school characteristics) and the four sources of collective teacher efficacy. They highlighted that “enabling conditions do not cause things to happen” (p. xix) but they increase the likelihood for teachers to gain access to sources of collective teacher efficacy. This integrated model not only depicts the formation of teacher beliefs but also acknowledges the critical role of contexts in teacher professional learning.



Figure 2-2: A model for leading collective teacher efficacy (Hite & Donohoo, 2021).

In addition to understanding the formation of collective teacher efficacy in context, Hite and Donohoo (2021) developed a matrix to understand the influence of collective teacher efficacy in context, specifically how collective teacher efficacy impacts teachers' receptiveness to change. The matrix in Figure 2-3 illustrates teachers' four reactions to change, mediated by collective teacher efficacy:

- If changes are introduced initially to teachers with low collective efficacy, teachers are likely to be **dismissive and/or evasive**.
- If changes are introduced initially to teachers with high collective efficacy, teachers are likely to be **inquisitive** and are open to **adapting** their current practice.
- When changes have been introduced and expectations for implementation build up for a while, teachers with low efficacy are likely to become **unreceptive** and perhaps **combative**.
- When changes have been introduced and teachers have figured out ways to implement and perhaps see the results from the changes, teachers with high efficacy are likely to become **proactive** and **innovative**.

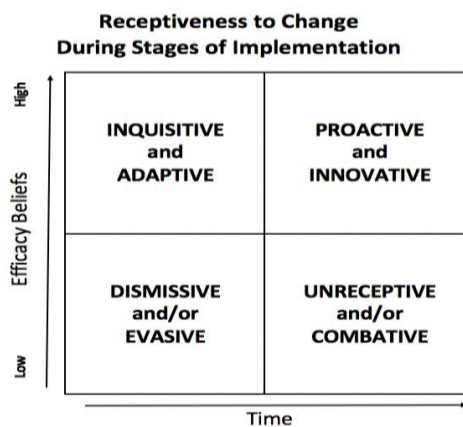


Figure 2-3: Receptiveness to change during stages of implementation matrix (Hite & Donohoo, 2021)

There are two benefits of using this matrix to identify the levels and the impacts of collective teacher efficacy. First, this matrix, which includes a temporal dimension, could be helpful in naming how collective teacher efficacy evolves over time and its relationship to changes in teachers' beliefs, dispositions, and practices. Second, collective teacher efficacy is task and context specific. Morris (2017) cautioned that researchers must continuously explore whether the dimensions or competencies included in research "reflect the full range of capabilities teachers consider in evaluating their effectiveness" (p.3). I think this matrix will allow for exploration of different domains of collective teacher efficacy beliefs. Additionally, it allows for contextualization of collective teacher beliefs by going into details of how collective teacher efficacy impacts teachers' beliefs, dispositions, and practices in their contexts.

Taken together, from Goddard et al.'s (2000, 2004a) model to Hite and Donohoo's (2021) model and matrix, I noticed both an ontological shift and an epistemological shift in how collective teacher efficacy is conceptualized. Ontology refers to the nature of the reality. While Goddard et al. believed that the formation of collective teacher efficacy can be affected by social cultural norms, Hite and Donohoo made an ontological shift by asserting that the development of collective teacher efficacy takes place within the social cultural context. This ontological shift indicates that collective teacher efficacy needs to be understood and made sense of within context. Epistemology refers to the nature of knowledge or the ways in which we know the world. While Goddard et al. used their model as a measurement construct and developed scales to measure the level of collective teacher efficacy, Hite and Donohoo used their model and matrix to understand how to lead collective teacher efficacy and how teachers with collective teacher efficacy respond to educational changes. Such an epistemological shift made by Hite and Donohoo is supported by Loughland and Nguyen (2020). They stressed the need to move away from conceptualizing collective teacher efficacy as a measurement construct to conceptualizing it as "a conceptual framework that can be used to design and analyze effective teacher professional

learning” (p. 158). They claimed that if the construct of collective teacher efficacy is considered in relation to teacher professional learning, we are more capable of looking at teacher learning more broadly by focusing on a theory of action. Thinking through a theory of action allows us to more clearly examine the relationship among teacher perceptions of professional learning, shifts in teachers’ collective teacher efficacy, shifts in teachers’ practices, and changes in student learning. Hence, Loughland and Nguyen contended that collective teacher efficacy can serve as a powerful conceptual framework to study the process of teacher professional learning so as to better understand how to foster teacher development.

In addition to the ontological shift and epistemological shift, Loughland and Nguyen (2020) suggested an axiological shift. Axiology is the philosophical study of value, which addresses what kinds of things have value. In their study that examines how aspects of a collaborative professional learning model exemplify the four sources of collective teacher efficacy, Loughland and Nguyen found substantial evidence of mastery and vicarious experiences as sources of efficacy, but limited evidence related to social persuasion and affective states. They contributed such a result to their unfamiliarity with the “novel categories such as social persuasion and teacher affective states” (pp. 157-158). They noted that a focus on teachers’ feelings and the role the social environment has on effective teacher learning could offer more insights into teachers’ agentic learning. To develop a full picture of collective teacher efficacy, future studies with more focus on teachers’ feelings and social interactions are therefore suggested.

Methodological Underpinnings of Collective Teacher Efficacy

Goddard et al. (2004a) synthesized four approaches to measure collective efficacy. The first approach involves aggregating individuals’ perceptions of self-efficacy. This method

calculates a group mean of self-referent perceptions, using statements like “I believe I have what it takes to improve student learning.” Bandura (1997) argued that perceived collective efficacy goes beyond simply summing up individuals’ personal efficacies. As such, this approach could be problematic because it primarily focuses on evaluating self-efficacy, which only pertains to individuals’ own beliefs about their capabilities.

The second approach is to aggregate individuals’ perceptions of group-referent capability. Unlike the first approach, this method shifts the focus from “I” to “we,” employing statements such as “I believe we have what it takes to improve student learning.” This approach to assess collective efficacy could capture how each individual perceives the capability of the group. The third approach builds upon the second one by finding the level of agreement among group members regarding their individual perceptions of the group’s capability.

The fourth approach involves community members engaging in discussions about their group capabilities and reaching a consensus about their sense of efficacy. However, this approach has certain limitations. Firstly, interaction influenced by social desirability can lead to bias and therefore compromise the validity of the assessment (Bandura, 1997). Another concern is that seeking a group consensus might obscure within-group differences in collective efficacy perceptions (Bandura, 1997).

There have been ongoing discussions regarding the effectiveness of different approaches in assessing collective efficacy. One specific discussion revolves around the question of whether individual perceptions of group capability could serve as a suitable measure. Bandura (1997) described perceived collective efficacy as an emergent group-level attribute, highlighting the time required for group members to converge their interdependent perspectives on group capability. Expanding on Bandura’s (1997) conceptualization, Goddard et al. (2004a) suggested that assessing collective efficacy as the aggregate of individual perceptions of group capability is

typically appropriate, as it also captures the emergent properties created by group interdependence.

Practitioner Inquiry in Teacher Education

Much of the current literature on collective teacher efficacy calls for particular attention to professional learning designs where inquiry-based approaches are taken. Practitioner inquiry is a form of professional learning that engages educators in the systematic, intentional study of their own professional practices (Cochran-Smith & Lytle, 1993, 2009). The essence of inquiry originates from teachers' questions and innate desires to make sense of their experiences (Cochran-Smith & Lytle, 1993). The systematic aspect refers to ordered ways of gathering information and documenting experiences for written record (Cochran-Smith & Lytle, 1993). The intentional aspect arises from activities that are deliberately planned, rather than spontaneous (Cochran-Smith & Lytle, 1993). Practitioner inquiry is a way of being as teachers, a way of understanding and improving the art of teaching and learning through problematizing and studying them with intentionality.

History and Terminology

The nature of the practitioner inquiry movement is dynamic because it “stemmed from several different but compatible intellectual traditions and educational projects (Cochran-Smith & Lytle, 2009, p. 5). Coming from varied traditions, practitioner inquiry is therefore used synonymously with action research, practitioner research, teacher research, and teacher inquiry (Dana, 2016). In this section, I introduce the terms through discussing the different but compatible intellectual traditions.

The term “action research” was first used by John Collier, who is a US Commissioner of Indian Affairs. In his 1945 article *United States Indian Administration as a Laboratory of Ethnic Relations*, he identified the means-end relationship between research and action that “research can be made a tool of action... that it ought to be the master tool” (p. 298). He further elaborated that research is “impelled from central areas of needed action” (p. 298). As a commissioner, Collier was passionate about using action research as a tool to ameliorate the conditions of oppressed people, more specifically to promote democracy within the Indian communities (Neilsen, 2006).

Action research gained popularity and was scientized through the work of Kurt Lewin, who was a German-American psychologist and friend to Collier. In his 1946 publication *Action Research and Minority Problems*, Lewin defined action research as “comparative research on the conditions and effects of various forms of social action, and research leading to social action” (pp. 202-203). Lewin’s notable contribution lies in the advance of the science of action research. To Lewin, the diagnosis of social problems was not sufficient; the diagnosis “has to be complemented by experimental comparative studies of the effectiveness of various techniques of change.” Devoted to “the development of more precise theories of social change” (p. 208), Lewin’s approach to action research was more science oriented (Neilsen, 2006).

Action research is explicitly adapted to the field of education through the work of Stephen Corey, who was a professor at Teachers College of Columbia University. In his article *Action Research in Education*, Corey (1954) defined action research in education as “research undertaken by practitioners in order that they may improve their practices” (p. 375). Corey elaborated on the action research process in education:

they accumulate evidence to define their problems more sharply. They draw upon all of the experience available to them as a source for action hypotheses that have promise of enabling them to ameliorate or eliminate the practical difficulties of their day by day work. They test out these promising procedures on the job, and again accumulate the best evidence they can of their effectiveness. They try to generalize as carefully as possible in

order that their research will contribute to the solution of future problems or the elimination of future difficulties that they face in their teaching or supervision or administration. (p. 375)

Corey considered action research to be helpful in gathering data purposefully for understanding and addressing challenges in classroom and school settings.

The active role of teachers was considered the center of action research through the work of Lawrence Stenhouse, who was a British educational thinker. In his 1975 publication *An Introduction to Curriculum Research and Development*, Stenhouse put forward the image of “teacher as researcher,” claiming that “curriculum research and development ought to belong to the teacher” (p. 142). Stenhouse (1975) highlighted teachers need to study their work themselves and that “it is difficult to see how teaching can be improved or how curriculum proposals can be evaluated without self-monitoring on the part of teachers” (p. 165). He later published a book called *Research as a Basis for Teaching* (1985) and described research by teachers as “systematic, self-critical enquiry.”

Action research was defined as a process to become critical through the work of Wilfred Carr and Stephen Kemmis. In their 1986 publication *Becoming Critical: Education Knowledge and Action Research*, they challenged the philosophical view of research where knowledge is generated from an empirical-analytic tradition by experts, and argued that such research and theorizing is effectual in improving the quality of teaching. They argued for a shift to research where knowledge was created by people in-situation and understood best by the people involved. They further postulated cycles of action research with four phases—planning, acting, observing, and reflecting. The purpose of the book was to highlight that action research in education needs to be critical through being (a) a constructive and reconstructive process, (b) grounded in the realities of educational practice, and (c) collaborated through discourse among teachers.

Teacher research and practitioner research as a form of social change received attention through the work of Cochran-Smith and Lytle, who in 1993 published *Inside/Outside Teacher*

Research and Knowledge. Building off the work of Lawrence Stenhouse (1985) who defined research as “systematic, self-critical enquiry,” Cochran-Smith and Lytle (1993) defined teacher research as “systematic, intentional inquiry about teaching, learning, and schooling carried out by teachers in their own school and classroom settings” (p. 27). They contended that teacher research is “a fundamentally social and constructive activity” (p. 24). In addition to serving as a heuristic for the individual, they stressed that teacher research must also be “cumulative and accessible to different people over time for a variety of purposes” (p. 25).

However, in their later publication *Inquiry as Stance: Practitioner Research for the Next Generation* (2009), Cochran-Smith and Lytle purposefully used the term “practitioner research” instead. Whereas their use of the word “practitioner” was intended to include a wider array of education practitioners (such as teacher candidates and teacher educators, etc), the use of the word “research” was a political move. On the one hand, they wanted to stress researching as a powerful tool for teachers to critique the inequities in schools and society; on the other hand, they wanted to challenge knowledge hierarchies by claiming research as part of teaching and teachers (Cochran-Smith & Lytle, 2009). Another major contribution was the shift from a view of research as a project to a more sustainable view of research as a worldview. They introduced the term “inquiry as stance” to describe “a way of knowing and being in the world of educational practices that carries across educational contexts and various points in one’s professional career” (p. viii).

Practitioner inquiry and teacher inquiry were used with the purpose of engaging educators through the work of Nancy Dana and Diane Yendol-Hoppey. Although the word “inquiry” was used earlier by Cochran-Smith & Lytle (1993) to illustrate the essence of teacher research that originates from teachers’ questions and innate desires to make sense of their experiences (Cochran-Smith & Lytle, 1993), the word “inquiry” was not used in this case as an umbrella for teacher research. In their book *The Reflective Educator’s Guide to Classroom Research: Learning to Teach and Teaching to Learn Through Practitioner Inquiry*, they (2020)

chose to use “inquiry” after years of experience coaching educators’ systematic study of their own practice. While the word “research” often carries baggage (such as studying for long hours in the library) and orients a process-product paradigm, the word inquiry could serve better to focus on the concerns of teachers and connect teachers to the goal of improving classroom practice (Dana & Yendol-Hoppey, 2020).

In my dissertation, I choose to use the term practitioner inquiry. First, my intention of using the word ‘practitioner’ is informed by Cochran-Smith & Lytle (2009), who described “practitioner” as a more inclusive word, compared to “teacher,” because it takes into account of “a wide array of education practitioners” (p. ix), such as teacher candidates, and teacher educators, etc. Since I involve practicing teachers, doctoral students, and teacher educators in my dissertation, I choose to use the more inclusive term to refer to educators in this space. Second, I use the term “inquiry” to highlight the practitioners’ intention to “challenge the inequities perpetuated by the educational status quo” (p. viii). The term “practitioner inquiry” is used in its broadest sense to refer to all teacher research that shares the above four features.

Inquiry as a Pathway to Equity

Dana & Yendol-Hoppey (2020) postulated an inquiry cycle to illustrate the cyclical process of how educators engage with practitioner inquiry. As educators embark on the study of their classrooms, they pose questions that are triggered by “felt difficulties and real-world dilemmas” (p. 27) and their recognition of the complexity of the classrooms. Educators intentionally produce and systematically analyze a wide range of data sources related to their classrooms, and respond to their new understanding by taking informed actions and sharing with others in and/or beyond their communities.

Practitioner inquiry is considered to play a critical role in advancing equity in education. Cochran-Smith and Lytle (2009) stressed that the ultimate goal of practitioner inquiry “always and in every context is to enhance students' learning and life chances for participation in and contribution to a diverse and democratic society” (p. 146). Similarly, Dana and Yendol-Hoppey (2020) argued that closing opportunity gaps, rather than achievement gaps, could better reflect the goal of inquiry to address the inequities in schools and within our society. While achievement gaps limit educators’ focus on student performance in standardized tests, opportunity gaps direct educators’ attention to tenants, such as cultural conflicts, deficit mindset, and low expectations (Milner, 2012). The practitioner inquiry process supports teachers to identify areas needed for action and change through evidence they generate and collect in their settings; this process often supports teachers to advocate for changes in pedagogy, changes in curriculum, and/or advocate for student in needs of further opportunities (Dana & Yendol-Hoppey, 2020).

Despite the fact that the ultimate goal of engagement in the process of inquiry is to advance educational equity, “not all teachers first come to inquiry with an equity focus, but rather discover this underlying problem of practice through time and several cycles of the inquiry process” (Dana & Yendol-Hoppey, 2020, p. 16). Although the inquiry process may not begin with a clear, well-defined equity focus, teachers are likely to gradually take on an equitable approach to understanding, challenging, or addressing the difficulties in classroom and school settings through varied perspectives gained from the community, literature, or student data.

Practitioner Inquiry Communities in Teacher Education

Central to practitioner inquiry is the concept of community. Considered to be rich and challenging contexts for practitioner learning, inquiry communities motivate educators to bring varied perspectives from local contexts and scholarly research into novel contact, in a way that

challenges the assumptions of schooling, links with larger change efforts and uncovers the complexity of teaching and learning (Cochran-Smith & Lytle, 2009).

The role of community has at least two dimensions. First, inquiry community is the site for knowledge to be local and public. Inquiry community offers time and space for teachers to open up classroom practices, obstacles, and innovations related to the local contexts. When teachers are supported to contribute to collective knowledge through publicizing their practices and beliefs, the knowledge become resources available for people involved to apply, spread, and extend. Cochran-Smith and Lytle (2009) described this type of community as “the context in which knowledge is constructed and used, and it is also the context in which knowledge is initially made public and opened up to the scrutiny of others” (p. 42).

Second, inquiry community encourages social and political interactions. It is important to note teachers are encouraged to position themselves in a critical relationship to knowledge and practice of their own and also those of others (Cochran-Smith & Lytle, 1999). While teachers study their own classrooms, they also treat the knowledge and theory produced by others as resources for interpreting and challenging. Cochran-Smith & Lytle (2009) stressed, for practitioner inquiry to serve as a mechanism to transform practice and enhancing students’ learning, the key “resides in the questions, theories, and strategies generated collectively by practitioners themselves and in their joint interrogations of the knowledge, practices, and theories of others” (p. 124). Inquiry community therefore develops an inclusive but critical approach to knowledge that empowers and challenges teachers.

Collaboration in/around Practitioner Inquiry Communities

Dana and Yendol-Hoppey (2020) introduced four collaborative structures that could provide the support necessary for encouraging inquiry. First, shared inquiry refers to two or more

inquirers sharing similar interests or concerns, and thus conducting a single teacher research project together. Second, parallel inquiry occurs when educators conduct their own individual teacher research projects in parallel to one another in ways that they could work collaboratively to offer support. Third, intersecting inquiry happens when individual educators explore different wonderings but under the same topic, and such junction of the intersection often facilitates collaboration and mutual influences. Fourth, inquiry support takes place when inquiring educators invite one or more professionals who are not currently engaging in inquiry to support their work. While the inquiring partners provide aid in formulating questions, collecting data, and analyzing data, they are often introduced to practitioner inquiry in a comfortable way and can benefit from staying connected to the systematic study of practice or embarking their own inquiry journey.

Potential of Practitioner Inquiry Communities in Developing Collective Teacher Efficacy

Dana and Yendol-Hoppey (2013), who have supported teacher inquiry for 25 years, have noted the importance of inquiring in a community. In their third edition of the book *The Reflective Educator's Guide to Classroom Research*, they provided four benefits of collaborating with others in the inquiry process. First, collaboration is motivating. Research is hard work and collaboration could provide “a crucial source of energy and support that keeps them going and sustains their work (p. 84)”. Second, collaboration is inspiring. Teacher talk supports teachers to question assumptions or givens about teaching practices, which is a process that is critical to making teaching problematic through the process of inquiry. Third, collaboration is empowering. Collaborating with others provides personal and professional support to voice the inquiry findings to call for change and overcome resistance to change. Fourth, collaboration makes inquiry and inquirers stronger. The collective power as knowledge-generating communities helps inquirers dream of bigger and broader influences.

In their fourth edition that was published recently, Dana and Yendol-Hoppey (2020) identified an additional benefit of collaborative inquiry – the development of collective teacher efficacy. They argued that when teachers study their own professional practice, they are able to use the process of inquiry to “better understand their ability to impact student outcomes” (Donohoo, 2017, p. 63) rather than “attributing student success or failure to factors outside of their control.” It is hopeful to hear the two senior scholars make an additional assertion about the benefits of collaborative inquiry by sharing their new conclusion. However, up to now, there has been no empirical study that investigates the development of collective teacher efficacy in practitioner inquiry communities in any systematic way.

Exploring the Presence of Collective Efficacy in Practitioner Inquiry Communities

In this section, I investigate the relationship between collective teacher efficacy and practitioner inquiry communities. Practitioner inquiry communities have been pointed out as an optimal context to study the development of collective teacher efficacy beliefs in the literature of practitioner inquiry (Dana & Yendol-Hoppey, 2020) as well as the literature of collective teacher efficacy (Donohoo, 2017). However, there is, so far, no empirical study that examines the development of collective teacher efficacy in practitioner inquiry communities in a systematic way. Therefore, I conducted a review of practitioner inquiry communities, focusing on two dimensions:

- How do the reported characteristics of practitioner inquiry communities serve as a condition for fostering collective teacher efficacy?
- How do the reported outcomes of practitioner inquiry communities relate to the development of collective teacher efficacy?

In this review, I included research on practitioner inquiry communities that were published in peer-reviewed journals in the recent 10 years, spanning January 1, 2013 to March 31, 2022. The terms from Appendix A serve as initial search terms for three databases: ProQuest Education, ERIC Education Journals, and PsycInfo. These searches yielded 171 abstracts. I organized each article's title and abstract into an Excel spreadsheet. After removing duplicates and excluding articles that were not published in English, I had 139 studies.

To ensure the relevance of the selected literature, the following inclusion criteria were applied during the selection process. First, the studies needed to be written in English. Second, the discussed community needed to include educators, which entails in-service teachers, pre-service teachers, and/or teacher educators, etc. Third, the inquiry community needed to be (part of) the primary focus. Fourth, the studies needed to report the characteristics, the processes, and/or outcomes of educators engaging in practitioner inquiry communities. Fifth, for teacher research to be considered as practitioner inquiry, they needed to be studies of which the questions or wonderings to be pursued are generated from educators' daily educational realities. All articles that did not meet these requirements were eliminated, which resulted in 14 studies eligible for full-text review.

Characteristics of Practitioner Inquiry Communities as Enabling Conditions for Collective Teacher Efficacy

Goal Consensus. Goal consensus is one specific condition that fosters collective teacher efficacy. Goal consensus within schools means that teachers have knowledge about school-wide goals that are realistic, clear, and specific, and there are processes in place for collaboratively establishing goals (Donohoo et al., 2020). Goal consensus is often mistaken as achieving

unanimity. While unanimity strives for a complete agreement, the emphasis of goal consensus is on “a process towards common understanding” (Hite & Donohoo, 2021, p. 28) and it is ongoing, iterative, and inclusive.

One reviewed study described one characteristic of practitioner inquiry communities as supporting the establishment of shared visions and goals (Shanks, 2016). Shanks (2016) examined 36 teacher candidates’ use of practitioner inquiry and the professional learning community (PLC) concept during their pre-student teaching field experience. He found that the PLC concept enabled the establishment of the long-term goal of improving student learning while the practitioner inquiry process oriented the teachers to set specific short-term goals to collect data and study literature that are relevant to their classrooms. Shanks argued that the experience with practitioner inquiry and the professional learning community helped teacher candidates develop the two shared dispositions. On the one hand, it helped teacher candidates to develop the disposition as change agents who are capable of supporting all students’ learning. On the other hand, the experience helped teachers accept the dispositions of collegiality and learn how to work with one another.

Empowered Teachers. Another specific condition that fosters collective teacher efficacy beliefs is having empowered teachers. Empowered teachers within schools means that teacher voices and expertise are valued and leadership responsibilities are delegated by growing teacher leaders with decision-making power (Donohoo et al., 2020; Hite & Donohoo, 2021). When teachers are empowered, they are “not content to narrowly focus on instructing their assigned students, but aspire to contribute systematically to the entire learning community” (Hite & Donohoo, 2021, p.54). If teachers are to consider their collective responsibility to all students, the development of “we, us, our” is important (Hite & Donohoo, 2021). Hite & Donohoo stress that it is important for teacher leaders to plan carefully for the right amount of structure and freedom so as to avoid initiative fatigue.

Some reviewed studies emphasized the need for empowered teachers in practitioner inquiry communities (Brooks & Adams, 2015; Gujarati, 2018; Skattebol & Arthur, 2014). Skattebol & Arthur (2014) described the importance of creating a “third place” between the academy and the field to empower teachers. In their collaborative practitioner inquiry between practicing teachers and academic partners, they observed that repositioning the academic partners as non-experts and meeting in teachers’ places empowered teachers to see themselves as valued educators and researchers. These authors also emphasized the value of heterogeneous groups in empowering teachers. When the teachers explained their insider experiences across a diverse expertise, it enabled them to attach a high value to their inquiry. Being a support of others’ inquiry allowed the teachers to see themselves “capable of contributing beyond their own insider experiences” (p. 361). Brooks and Adams (2015) highlighted the importance of creating a sense of purpose and community building in empowering teachers. In the project Alianza, the in-service teachers were required to conduct an inquiry-centered school-change project as coursework, which granted the teachers a purpose for engaging in advocacy and empowered them to take actions to address existing systemic inequities towards ELL students in schools. The learning community, structured in the form of Critical Friends Groups (CFG), created bond and trust between the teachers across schools which served to empower teachers to take risks. For example, one teacher was afraid of participating in home visits to the homes of ELL students. Inspired by how the home visit was influential to her CFG colleagues, she took up the challenge and found the visits to be transformational in her understanding of her ELL students and family. The learning community, such as Critical Friends Groups, as a vehicle to empower teachers was also indicated by Gujarati (2018). The teacher candidates described CFGs as “continuous opportunities to bring up areas for consideration that the MAT candidates had not thought of on their own” (p. 13).

Cohesive Teacher Knowledge. One of the important conditions that foster collective teacher efficacy is cohesive teacher knowledge. Cohesive teacher knowledge within schools means that teachers “are aware of the teaching practices of others and their agreement in regard to what constitutes effective assessment, instructional practices” (Hite & Donohoo, 2021, p. 55). To develop cohesive teacher knowledge, the key is to create structures for interdependent work that enable teachers to think and act as a team (Hite & Donohoo, 2021). Such cohesive teacher knowledge should be about the student learning experience and teachers’ collective responsibility to students, rather than individual teacher practice (Hite & Donohoo, 2021).

One reviewed study indicated that a prominent characteristic of practitioner inquiry communities is collaboration that encourages shared understanding of instructional experiences (Wagner, 2021). Examining the effectiveness of an online practitioner inquiry model, Wagner (2021) found that the online discussion-based platform, which was structured to move teachers through systematic cycles of question posing, reflection, action, and evaluation, afforded a sustained conversation. It enabled teachers to have a shared understanding of the topic, a familiarity with each other’s classrooms built over time, and to build trust for sharing ideas and offering suggestions. The teachers contributed their positive experience to “conversations that were grounded in ‘real-life’ classroom problems and questions of practice” (p. 191).

Embedded Reflective Practices. Another key condition that fosters collective teacher efficacy is embedded reflective practices. Embedded reflective practices within schools mean that there are processes by which teams work together to examine sources of student evidence to help inform their work and realize the results of their own efforts, other teachers’ efforts, and their combined efforts (Donohoo et al., 2020). The key for reflective practices of fostering collective efficacy is to focus on outcomes and impact (Hite & Donohoo, 2021). To support embedding reflective practices, leaders can use structures and protocols to help facilitate reflection that is based on evidence (Hite & Donohoo, 2021). Encouraging the use of disaggregated data and

multiple measures can help address inequity by paying attention to the strengths and needs of different subgroups of students through different aspects of their learning (Hite & Donohoo, 2021). Another key is to support teachers' sustained use of evidence-based strategies because it often requires multiple opportunities for teachers to be fluent in a newly implemented practice and thus see the impact (Hite & Donohoo, 2021).

Multiple studies showed that practitioner inquiry communities help keep teacher reflection focused on outcomes and impact (Beebe & Corrigan, 2013; Kim, 2018; So, 2013). Beebe and Corrigan (2013) found that the practitioner inquiry community was an effective model to encourage sustained reflection. Pairing up as a practitioner inquiry community, the teacher candidates and their mentor teachers reported greater engagement with the teaching process and heightened awareness of student learning. One preservice teacher described their increasing focus on "what the students knew and how they were learning the information they were being taught". One mentor teacher reported how the newly implemented instructional strategy was sustained long enough so as to really evaluate the impact on student learning. The teachers in Kim's (2018) study described the use of multiple sources of evidence in their practitioner inquiry community. The multicultural teachers not only collected materials related to Korean language education for multicultural students, but also examined the degree of Korean language ability of each multicultural students. Their selection of both the student learning data and school process data, according to Kim, could establish the foundational understanding about multicultural education in Korea. So (2013) described the combination of different approaches to embedding reflective practices in practitioner inquiry communities. The practicing teachers of So's study were encouraged to reflect on teaching practices in group discussion and reflective diary, and they particularly valued the writing process for "help(ing) them objectify and change their assumptions and thoughts regarding teaching practices" (p. 195). So concluded that the various forms of

reflective practices helped “promote the collaborative construction of knowledge within the inquiry community” (p. 195).

Supportive Leadership. The final condition—supportive leadership—serves the critical role as the space for the other elements of collective teacher efficacy beliefs to flourish. Supportive leadership within schools refer to both formal and informal leaders, who not only provide support and care to help teachers carry out duties effectively and focus on teaching and learning, but also acknowledge individual and team accomplishments. Compared to authoritarian leadership, collaborative leadership, in which hierarchy is flattened, is more promising to fostering a sense of collective efficacy. However, to provide effective support, it is important for leaders to cultivate a leadership mindset and recognize the type of collaboration that works for the team. Hite and Donohoo (2021) suggested taking an anthropological role to form deepened understandings of what support is needed in the specific context, so as to know what specific practices will be the most impactful.

A few reviewed articles affirmed the need for teacher educators to offer support in multiple ways (Adams, 2016; Cheng & Li, 2020; Dodman et al., 2014; Kellner & Attorps, 2020). The in-service teachers of Cheng and Li’s study (2020) described the types of feedback from the university researchers that supported teachers as they conducted practitioner inquiry. They argued that feedback was helpful when they provided alternative perspectives for appreciating their work, for considering different ways to consolidate student learning, and for re-emphasizing existing teaching practices. Similarly, the in-service teachers of Kellner and Attorps’s study (2020) highlighted how feedback from the researchers and mentors from the university to help them focus on a core content through “discern(ing) various aspects of subject matter knowledge and pedagogical content knowledge” (p. 373). While the previous studies emphasized facilitation and feedback of inquiry for in-service teachers in school-university partnerships, Dodman et al (2014) studied the role of the professional development school (PDS) as a unique structure to

drum up support for teacher candidates. The PDS design enabled teacher candidates to receive support from both the university faculty and their clinical faculty. The clinical faculty who are knowledgeable about practitioner inquiry often helped with data collection or mentored the teacher candidates in formulating questions and action plans. Thus, they could “provide a daily guiding presence for the process as interns continually reflected on their actions and data” (p. 96). The teacher candidates of Adams’s study (2016) highlighted the importance of “optimal” support from mentors that do not take away ownership. They argued that to support teacher candidates in the collaborative inquiry process, mentors need to “provide as much support as they needed, quickly learning when to step in and when to step back; when to offer advice, and when to let the interns discover something for themselves” (p. 30).

Outcomes of Practitioner Inquiry Communities in Relation to the Development of Collective Teacher Efficacy

Collective teacher efficacy is defined as “the perceptions of teachers in a school that the faculty as a whole can execute the courses of action necessary to have positive effects on students” (Goddard, 2001, p. 467). The development of collective teacher efficacy is often associated with the development of self-efficacy and is involved in the development of teacher identities. According to Tschannen-Moran and Barr (2004), in an environment with a high level of collective efficacy beliefs, it is likely that self-efficacy beliefs are developed. It was also stated that “efficacy beliefs may be as aspect of teachers’ identities which are reified in shared practice” (Takahashi, 2011, p.735). In other words, a professional learning site where self-efficacy beliefs flourish and identities are negotiated collectively could be places to detect the development of collective teacher efficacy beliefs.

Several studies highlighted the potential of practitioner inquiry communities to improve educators' self-efficacy (Beebe & Corrigan, 2013; Dodman et al., 2014; Kellner & Attorps, 2020). The in-service teachers of Kellner and Attorps's study (2020) reported increased self-efficacy in teaching specific content areas and engaging students. They contributed their increased self-efficacy beliefs to gaining improved subject matter knowledge and seeing changes in their teaching practices. In Beebe and Corrigan's study (2013), the mentor teachers expressed that working alongside the teacher candidates in the practitioner inquiry community increased their efficacy in addressing problems in the classroom. They argued that being involved in the practitioner inquiry community brought them to realize that there is a healthy way to deal with stress and challenges in classrooms. One mentor teacher elaborated that practitioner inquiry urges educators to "take responsibility for finding solutions rather than blame."

Some papers reported the role of practitioner inquiry communities in shaping educators' collective identities (Yuan & Burns, 2017; Skattebol & Arthur, 2014; Willegems et al., 2018). For example, in their detailed investigation into teacher identity development, Yuan and Burns (2017) examined two in-service teachers' identity shifts in the practitioner inquiry community with a university research team. The two teachers reported shifts in their perceptions of self, from self as 'lonely fighter' in their classrooms to self as 'collaborator' in the inquiry community. Yuan and Burns concluded the inquiry community played a key role in providing "new forms of engagement, imagination, and alignment in their professional work" (p. 745) to facilitate teachers' collective identity formation. Similarly, Willegems and colleagues (2018) supported that practitioner inquiry communities offer opportunities for teacher candidates to develop into extended professionals who are more willing to take up shared responsibility, collaborate with colleagues, and innovate based on the reactions and results of students. Skattebol & Arthur (2014) described the practitioner inquiry community as having the potential to "shift the discourse of

individualization and also reinforce democratic ideals by emphasizing professional connectedness and shared responsibility” (p. 363).

In order to address the absence of transparent research on collective teacher efficacy within practitioner inquiry communities, an analytical framework was developed by synthesizing the relevant studies. The analytical framework, presented in Table 2-1, consists of three distinct categories. The first category focuses on the contextual factors influencing collective teacher efficacy, drawing from the work of Donohoo et al. (2020) and Hite and Donohoo (2021). The second category explores the formation of collective teacher efficacy, building on insights from Bandura (1986) and Loughland and Nguyen (2020). The third category focuses on the levels of collective efficacy, drawing from the work of Hite and Donohoo (2021). This analytical framework was useful for formulating research questions and interview questions as well as for establishing the code book. Through a close reading of the aforementioned studies, codes, subcodes, and corresponding definitions were developed in the code book (Appendix B).

Table 2-1: A framework for studying the development of collective efficacy within context

Contextual Factors of Collective Teacher Efficacy	Conditions that enable collective teacher efficacy include:	In this promising condition for fostering collective teacher efficacy (Donohoo et al., 2020; Hite & Donohoo, 2021):
Goal Consensus		Improvement goals are <ul style="list-style-type: none"> ● established by the whole community ● realistic ● clear and specific ● set through a collaborative process
Empowered Teachers		Educators are <ul style="list-style-type: none"> ● entrusted to make decisions ● provided leadership opportunities ● having a voice ● valued for their ideas and experience
Embedded Reflexive Practice		The teaching community <ul style="list-style-type: none"> ● re-examines continually how teaching practices support student learning ● examines multiple sources of evidence to assess student learning

		<ul style="list-style-type: none"> ● seeks and uses student feedback regularly 						
Cohesive Teacher Knowledge	Teachers in this community	<ul style="list-style-type: none"> ● share beliefs about effective instructional approaches ● agree on what constitutes effective classroom instruction ● agree on impactful assessment strategies ● understand the teaching practices of one another 						
Supportive Leadership	The community facilitator	<ul style="list-style-type: none"> ● supports teachers in carrying out their tasks ● shows concern ● supports the community to focus on learning and teaching ● acknowledges the accomplishments of individuals and teams 						
Formation of Collective Teacher Efficacy	Sources of collective teacher efficacy (Bandura, 1986) include	Professional learning provides teachers with (Loughland & Nguyen, 2020):						
	Mastery experience	<ul style="list-style-type: none"> ● ongoing improvement and learning ● time to develop skills and deep knowledge ● a focus on student outcomes 						
	Vicarious experience	<ul style="list-style-type: none"> ● opportunities to learn from each other ● working relationships 						
	Social persuasion	<ul style="list-style-type: none"> ● communication, particularly collaborative and dialogic discussion 						
	Affective states	<ul style="list-style-type: none"> ● social emotional aspects of teaching and learning 						
Levels and Impacts of Collective Teacher Efficacy in Stages	When changes are introduced at...	<table border="1"> <thead> <tr> <th>Early Stage</th> <th>Late Stage</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> ● dismissive ● evasive </td> <td> <ul style="list-style-type: none"> ● inquisitive ● adaptive </td> </tr> <tr> <td> <ul style="list-style-type: none"> ● unreceptive ● combative </td> <td> <ul style="list-style-type: none"> ● proactive ● innovative </td> </tr> </tbody> </table>	Early Stage	Late Stage	<ul style="list-style-type: none"> ● dismissive ● evasive 	<ul style="list-style-type: none"> ● inquisitive ● adaptive 	<ul style="list-style-type: none"> ● unreceptive ● combative 	<ul style="list-style-type: none"> ● proactive ● innovative
Early Stage	Late Stage							
<ul style="list-style-type: none"> ● dismissive ● evasive 	<ul style="list-style-type: none"> ● inquisitive ● adaptive 							
<ul style="list-style-type: none"> ● unreceptive ● combative 	<ul style="list-style-type: none"> ● proactive ● innovative 							
	Teachers with low CTE (Hite & Donohoo, 2021):							
	Teachers with high CTE (Hite & Donohoo, 2021):							

Research Questions

Informed by the preceding discussions, this dissertation study explores the following research questions:

- How does an inquiry community create an enabling condition for fostering collective teacher efficacy?
- Through what aspects of experiences do the participants perceive the inquiry community as supporting their collective teacher efficacy by tapping into the sources?
- How do the participants understand their collective teacher efficacy in the inquiry community?

Chapter 3

Methodology

The scholarly purpose of this dissertation study is to understand and characterize the development of collective efficacy in a practitioner inquiry community. The practical purpose of the study is to inform the work of teacher educators or leaders who design and facilitate practitioner inquiry communities. The overarching research question for the study is: How might collective teacher efficacy beliefs develop among educators who engage in a practitioner inquiry community? In Chapter 3, I outline the research approach for my study. I begin by arguing for my decision to conduct a qualitative case study. Then, I describe the study context and how I identified participants. I describe the data sources and methods of analysis. I conclude the chapter with a brief discussion of my understanding of trustworthiness and research ethics.

Qualitative Case Study Research

For this dissertation, I adopted an embedded, single-case approach (Yin, 2018). This approach is particularly useful in addressing “how” questions (Yin, 2018), which are the main questions of my dissertation. Another advantage of using a case study approach is that it can capture the complexities of a contemporary phenomenon (Yin, 2018), which in my study is the development of collective teacher efficacy in a practitioner inquiry community. According to Yin (2018), defining the case is critical in designing and conducting a single-case study. As such, descriptions of the context, the case, and the units of analysis are presented below.

As illustrated in Figure 3-1, this case study describes the development of collective teacher efficacy through a practitioner inquiry community in the form of a graduate seminar. The

case study is situated within a single, large, but complex entity—the partnership between Kerry Creek University and Blue Rim Area School District Partnership. The case study has subunits of analysis. The main unit is collective teacher efficacy, which is a group-level characteristic (the “case”), and the smallest unit is the individual member.

This single-case study features a critical case (Yin, 2018). It is critical because among all the professional learning communities, an inquiry-based learning community is said to be a promising context to study the development of collective teacher efficacy (Donohoo, 2018). Conducting the case study in this critical practitioner inquiry community is likely to bring a significant contribution to knowledge and theory building by extending the theory. It is also critical because this specific practitioner inquiry community is unique in ways that it includes educators across the career span, including graduate students, practicing teachers, teacher educators, university faculty, and community educators.

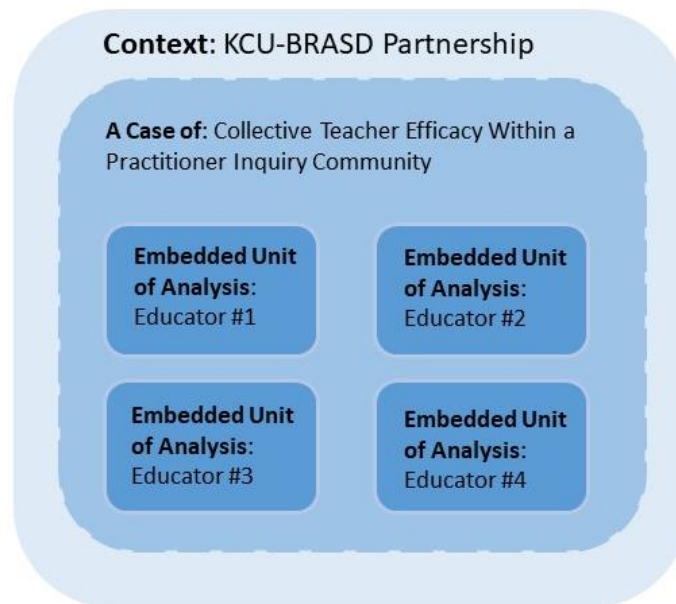


Figure 3-1: Embedded, single-case study design, adapted from Yin (2018, p. 48)

Context

I chose a graduate seminar as the study context, which was entitled “Research in School-University Partnerships.” This graduate seminar was situated in the broader context of a school-university partnership. Kerry Creek University is a research university which has long-existing partnerships with K-12 schools in the Blue Rim Area School District (the names of the university and school district are pseudonyms to ensure confidentiality). The KCU-BRASD partnership has a mission of including all partners in the district in learning for renewal, and the graduate seminar is one mechanism to achieve the mission. This graduate course aimed to “bring school and university partners together to engage in systematic studies of their practices in the education field” (Lionpath, n.d.). The seminar was offered in Fall 2022, from August 22nd to December 22nd. This graduate seminar, designed for all educators, included 10 educators in varying formalized roles, such as K-12 schoolteachers, beginning doctoral students, advanced doctoral students, master’s students, university instructor, environmental community educator, and teacher educator.

In this graduate seminar that featured an inquiry community, the instructor placed a strong emphasis on community-building, reflection, and discussion with a particular focus on goal setting, action-planning, meaning-making, and problem-solving. To nurture the inquiry community, the instructor employed three core practices: the arc of inquiry, guiding reflection, and professional dialogue (Wolkenhauer & Hooser, 2021).

Arc of Inquiry. The instructor framed inquiry as a process that drives learning, and introduced wondering development, data collection, data analysis, action planning, and sharing as continuous, iterative processes within the inquiry cycle. In this seminar, the educators were guided to learn systematically and strategically through practitioner inquiry. In the first part of the seminar, educators learned to support each other to articulate their difficulties, pluck up the

courage to challenge and question their own practices, and identify their needs and commitments. In the second part, they strategically made plans for gathering data and relevant information. They then intentionally produced a wide range of data (e.g., interviews, lesson plans, student work, professional literature) and systematically analyzed them. The third part involved sharing their learning process and insights with others in the seminar and developing action plans informed by their collective learning. Throughout the process, educators were also supported to document their inquiry processes in an Inquiry Brief. This assignment served to provide a visible trajectory of their inquiry journey.

Guiding Reflection. To cultivate a mindful inquiry community, the instructor facilitated individual and collaborative reflection, with the goal of promoting understanding of self, understanding of self in relation to others, and understanding of self within the larger educational community (Wolkenhauer & Hooser, 2021). To achieve that goal, the facilitator provided prompts to focus reflection on beliefs and practices, facilitated whole group debriefings after each community activity, and incorporated local resources (e.g., strategic plans) to help educators to connect their individual work to the broader teaching community. Additionally, educators were given dedicated time for individual journaling, which served as another assignment of this graduate seminar.

Professional Dialogue. To create a relational inquiry community, the instructor supported educators in engaging in professional dialogue within and beyond the inquiry community. The instructor selected and utilized conversation protocols (e.g., NSRF, n.d.; School Reform Initiative, n.d.) to assist educators in developing dialoguing skills, such as seeking advice, sharing perspective, and questioning interpretation. Furthermore, educators were encouraged to initiate professional dialogue with colleagues outside the inquiry community. As part of the seminar, one assignment included writing a letter to colleagues to involve them in understanding the role of school-university partnerships and practitioner inquiry for equitable education.

A distinct aspect of this graduate course was the location where the professional learning took place. This graduate seminar was held at one of the local elementary schools—Heights Station Elementary School. By grounding professional learning in a school context, educators may find it conducive to connect their professional learning to student learning. This approach also empowered practicing teachers by centering their working space as a site for professional learning. Further details about this study context are presented in Chapter 4.

Participants

Identification of Study Participants

I adopted Yin's (2018) two-phased approach to screen the primary participants for my case study. According to Yin (2018), a large number of eligible candidates warranted a two-phased approach, which includes familiarizing oneself with the entire pool and applying inclusion criteria. There were ten members attending this graduate seminar. Among the ten members in the inquiry community, I obtained written informed consent from nine members while one member decided to withdraw from the study in phase one. All the members of the practitioner inquiry community who gave consent were considered as eligible candidates as they all in some ways contributed to the development of collective teacher efficacy. This process is represented by Figure 3-2.

In phase one, I familiarized myself with the inquiry community by collecting relevant qualitative data about the entire pool. I obtained documentation and archival data generated in the seminar, such as individual wonderings. In addition, I gathered information about their role identities and teaching experiences through direct observations in the introduction phase of the

course. Then, I organized the qualitative data into a detailed table (Appendix C), which enabled me to gain a sense of the variety of role identities, teaching experiences, and wonderings (inquiry questions).

In phase two, I identified the primary and secondary participants. The primary participants were the focal subunits of analysis; the rest of the participants in the inquiry community would be the secondary participants as they were likely to be involved and addressed by the primary participants. To select three to five primary participants, I first applied the inclusion criteria as follows. The educators' practitioner inquiry questions must be: 1) sparked by felt difficulties and real-world dilemmas; 2) connected to student (widely defined) learning; 3) showing potential for connection to issues of educational equity; and 4) developed individually. Caution was exercised in understanding the relevance of educators' inquiry to equity, as Dana and Yendol-Hoppey (2020) noted that some teachers might not first come to inquiry with an equity focus but begin to unearth the ultimate goal for equity in the inquiry process over time. Therefore, I assessed inquiry questions with their potential to create more just and more equitable learning experiences. Among the seven educators who fit the inclusion criteria, I selected a final group of four primary participants, based on the thoroughness of the documentation and accessibility of the participants.

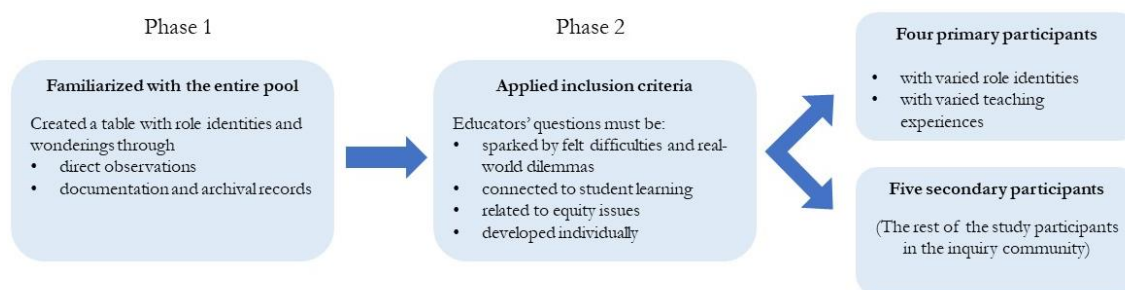


Figure 3-2: Identification of primary and secondary participants.

An Overview of the Four Primary Participants

The following is a description of the four primary participants in the study (the names of the participants are pseudonyms to ensure confidentiality). During the initial stage of this study, all study participants involved were invited to describe themselves. The primary participants' descriptions of themselves and their inquiry are synthesized in the following paragraphs, supported by evidence from field notes and documents.

Eva is a university instructor at Kerry Creek University, where she teaches undergraduate students majoring in STEM fields. Along with her teaching duties, Eva also supervises teaching assistants and provides professional development for faculty members in her department. Despite having no prior formal education in teaching, she is passionate about advancing her academic and professional pursuits. Therefore, Eva enrolled in a part-time PhD program and took this graduate seminar to deepen her knowledge and skills in teaching and research.

During this graduate seminar, Eva focused on supporting her undergraduate students by exploring the inquiry question: "How will my students experience the Universal Design for Learning (UDL) in my class and what impact will their perceptions have on my continued practice as an educator?"

Georgia is an environmental community educator who works at a local environmental center that partners with Kerry Creek University and the Blue Rim Area School District. She collaborates with local elementary school teachers to provide science lessons to young students and supervises interns at the environmental center, most of whom are recent college graduates. In addition to her job responsibilities, Georgia is pursuing a part-time master's degree and taking this graduate seminar as part of her degree.

In this graduate seminar, Georgia focused on supporting her interns to become reflective educators. Her primary inquiry question is, “How can I enhance my practice to better support the development of reflective practices among the interns?”

Oliver is a third-grade teacher with four years of teaching experience in the Blue Rim Area School District. He graduated from Kerry Creek University. As a part of his teacher preparation, he engaged in cycles of practitioner inquiry in his internship classroom. In one of the cycles, he studied the scientist identity of his kindergarten students, which deepened his understanding of student development and effective teaching strategies.

Recently, Oliver took this graduate seminar to further enhance his professional learning. In this graduate seminar, he focused on improving his practice in supporting his third-grade students. His primary inquiry question was: “What strategies can I implement to support my students in developing their identity as reflective learners?”

Hope is a first-year doctoral student in teacher education at Kerry Creek University, having previously taught at the elementary level in the Western United States. As part of her full-time PhD program, she was tasked with teaching an online graduate course on classroom management to a diverse group of practicing and preservice teachers.

In this graduate seminar, Hope sought to investigate her transition from teaching children to teaching adult learners online, with a focus on exploring her identity and values as an emerging teacher educator. Her inquiry question was framed as follows: “As I transition from a teacher to a teacher educator, what can I learn about my identity and values as the teacher educator I hope to be?”

Data Collection

Most case studies of high quality use a variety of sources (Yin, 2018). In my dissertation, I included multiple data sources to address the three research questions. The data collection was carried out in two phases.

The first phase focused on getting to know the educators and the inquiry community. I gathered demographic information about educators' educational backgrounds, reasons for joining this inquiry community, the strengths and challenges of their identities, their perceptions of the inquiry community, and the emergent wonderings they developed in the early stage of the inquiry community. Data sources in the first phase included the following two pieces of data.

Baseline Interviews. Individual semi-structured interviews were scheduled in the four and fifth week of the semester with the goal of developing a more comprehensive understanding of the educators' backgrounds and initial engagement in the inquiry community. The first set of questions were posed to gain insight into the educators' educational backgrounds (e.g., identities, demographics of students, strengths and challenges), adapted from Hall (2020). The second set of questions asked the educators to select from 19 items to describe their perceptions of the inquiry community (including goal consensus, empowered teachers, cohesive teacher knowledge, embedded reflexive practice, and supportive leadership). Items were adapted from the Enabling Conditions for Collective Teacher Efficacy Scale (Donohoo et al., 2020). The baseline interview protocol is in Appendix D.

Direct Observations. Observations about the group actions in real time are invaluable data to complement interviews with individual group members (Yin, 2018). I took field notes in the notebook, focusing on the activities, interactions, conversations, and group dynamics in the community. Right after each seminar session, I typed field notes and organized them into one document.

Documentation and Archival Records. Documentations and archival records are helpful because they can help verify names and spellings that might be addressed in interviews, and provide specific details that could corroborate information from other sources (Yin, 2018). I collected copies of course materials related to the graduate seminar. These included the course flyer, the course syllabus, and course agendas. In addition to course materials, I collected written work from all participants in the inquiry community, such as the wonderings generated in the inquiry community.

The second phase focused on collecting episodes of educators' perceptions of collective efficacy. This phase is the heart of my data collection. One major data source is a series of four interviews that were authentic, real-time snapshots of educators' perceptions of collective teacher efficacy as they engaged with key learning events in the inquiry community. An event-based sampling was adopted to focus on particular episodes in the participants' experiences (Shiffman et al., 2008). The four critical learning events within the inquiry community included: (1) wondering development, (2) data collection, (3) data analysis, and (4) action planning and inquiry sharing. Data sources in the second phase included four pieces of data.

Collective Teacher Efficacy Interviews. Individual semi-structured interviews were scheduled right after the above four key learning events. Individual interviews are a methodologically appropriate approach to study the group's perception of their collective teacher efficacy (Goddard et al., 2004a) because individual narratives are embedded in social relationships and structures, and could provide insights into "the connections between individual life trajectories and collective forces and institutions beyond the individual" (Maynes et al., 2008, p.3). The interview protocol is in Appendix E.

The first set of questions aims to gauge general perceptions of collective efficacy beliefs through emotion-focused questions. Emotional states are often elaborated with mastery moments, vicarious experiences, or social persuasion. Therefore, an emotion-focused approach is likely to

elicit a simple answer to a complex question about collective teacher efficacy formed and converged from varied sources. To support educators in identifying their emotions, I introduced the Feeling Wheel (Willcox, 1982) as a tool. I specifically chose Willcox's Feeling Wheel because it was comprehensive yet accessible. Informed by Zinker's (1978) concept of using art to provide support and Plutchik's (1980) comparison of emotions to colors, Willcox developed the Feeling Wheel. It encompasses six fundamental feelings, each represented by a primary color, along with 72 secondary feelings categorized by two levels of intensity.

The second set of questions aims to elicit details of collective teacher efficacy, through centering social interactions that develop collective teacher efficacy. Participants were invited to engage in the analysis of their own social network. Since collective teacher efficacy is constituted as the product of the dynamic interaction between the educators (Bandura, 1993, 1997), understanding educators' social interactions could help us get to the roots of collective teacher efficacy. The use of social network analysis provided a valuable lens to understand the meaning of interactions or the variability of social relationships (Froehlich et al., 2020). In this study, the participants were asked to identify significant others in the learning journey, and then elaborate on the nature of each social interaction. The elaboration on the structure and the content of social network will likely involve task analysis as well as evaluation of group competences, which are key to the construction of collective teacher efficacy.

Direct Observations. My observations in the second phase focused on the primary participants. I took notes of the activities, interactions, conversations, and group dynamics in the community that are related to the sources and the impacts of collective teacher efficacy.

Documentation and Archival Records. Similarly, in the second phase, I continued to collect copies of course materials related to the graduate seminar. In terms of written work, I collected written work from all study participants in the inquiry community, such as their inquiry briefs, presentations slides, and inquiry journals.

Analytical Memo. As “an intellectual workplace for the researchers” (Thornberg & Charmaz, 2014, p. 163), analytical memo is “the transitional process from coding to the more formal write-up of the study” (Saldaña, 2021, p. 70). During the process of data saturation, data analysis, and the write-up of the study, I followed the prompts and advice provided by Saldaña (2021). I kept one living document that I revisited every day when I worked with data. I recorded what went through my mind, using Saldaña’s prompts as my guide and inspiration rather than the bounded parameters. I dated each memo to help keep track of the evolution of my study.

Data Analysis

Data Organization

In case studies that involve multiple data sources, there is a potential for nonconvergence of evidence, which occurs when multiple sources are used to address different findings in a separate approach (Yin, 2018). To ensure the convergence of evidence in this study, I maintained clarity about the multiplicity of my data. This enabled me to triangulate the data and ensure the findings were supported by more than a single source of evidence. To facilitate this, I created a table (Table 3-1) to provide a clear overview of the data. Using numbers and dates, I indicated the timepoints at which data are gathered, which then allowed me to pay attention to the temporal dimensions and the unique perspectives offered by each data source. For this study, interviews were a primary data source. A total of 20 interviews were auto transcribed and validated using the AI transcription tool, Otter.ai, and then downloaded as PDFs.

Table 3-1. Organization of data sources to data collection timepoints.

Data Sources	Oliver	Eva	Georgia	Hope
Individual Interviews	Oliver, Interview 1/5, 9.14.22	Eva, Interview 1/5, 9.9.22	Georgia, Interview 1/5, 9.14.22	Hope, Interview 1/5, 9.9.22

	Oliver, Interview 2/5, 10.06.22	Eva, Interview 2/5, 10.3.22	Georgia, Interview 2/5, 10.10.22	Hope, Interview 2/5, 10.4.22
	Oliver, Interview 3/5, 10.27.22	Eva, Interview 3/5, 10.21.22	Georgia, Interview 3/5, 10.26.22	Hope, Interview 3/5, 10.26.22
	Oliver, Interview 4/5, 11.23.22	Eva, Interview 4/5, 11.29.22	Georgia, Interview 4/5, 11.16.22	Hope, Interview 4/5, 11.16.22
	Oliver, Interview 5/5, 12.12.22	Eva, Interview 5/5, 12.27.22	Georgia, Interview 5/5, 12.8.22	Hope, Interview 5/5, 12.7.22
Documentation & Archival Record	Letter to a colleague, wondering litmus test, inquiry brief, finding your findings, inquiry journal, inquiry presentation slides, action plan, and social network maps	Letter to a colleague, wondering litmus test, inquiry brief, finding your findings, inquiry journal, inquiry presentation slides, action plan, and social network maps	Letter to a colleague, wondering litmus test, inquiry brief, finding your findings, inquiry journal, inquiry presentation document, action plan, and social network maps	Letter to a colleague, wondering litmus test, inquiry brief, finding your findings, inquiry journal, inquiry presentation video, action plan, and social network maps

Another strategy I employed was to create a case study database (Yin, 2018). A case study database is an organized compilation of all the data from a case study, presented in both narrative and numeric form (Yin, 2018). Given that this study incorporated multiple data sources to account for the possibility of “multiple realities” (Yin, 2018, p. 129), it was crucial to structure data in a way that acknowledged its multiplicity and facilitated efficient utilization. To accomplish this, I used PowerPoint to create the case study database (Figure 3-3). For each participant, I organized their data sources and key ideas in eight slides. While the case study database required orderliness, it did not need to be highly polished (Yin, 2018). I used this opportunity to thoroughly review all the data sources. The eight slides included essential background information, pre- and post-perceptions of inquiry community, key notes and social maps derived from the four interviews, and notes from their artifacts. This systematic process of constructing the case study database not only facilitated organization but also allowed me to become more acquainted with the collected data.


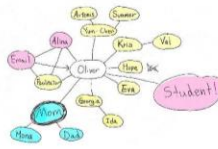
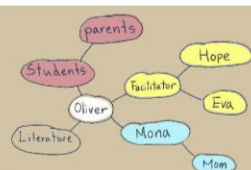
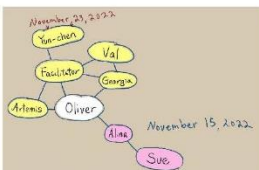

<p>1</p> <h3>Baseline Interview</h3> <p>Oliver</p> <p>Education experience</p> <ul style="list-style-type: none"> Undergraduate at KCU Had inquiry experience in his teacher preparation program <p>Teaching experience</p> <ul style="list-style-type: none"> Fourth year as a third-grade teacher at Florenberg Working at the girl group homes (age 13-18) Serving as a basketball coach to middle school students <p>Areas of Strength versus Challenge</p> <ul style="list-style-type: none"> Building relationships with students VS negative self talk <p>Social Environment</p> <ul style="list-style-type: none"> Collegial support: Alina, Lawrence, Jessica, Sue  <p>09.14.22</p>	<p>2</p> <h3>Perception of Inquiry Community (Pre)</h3> <ul style="list-style-type: none"> No 2: The goals for improvement are realistic. No 4: There is a process in place for members of the class to collaborate when setting goals for improvement and professional learning. No 8: People's ideas and expertise are valued in this class. No 9: The class continually re-examines the extent to which teaching practices support the learning of all students. No 19: The facilitator regularly acknowledges the accomplishments of individuals and teams within the class. <p>09.14.22</p>
<p>3</p> <h3>Wondering Development</h3> <ul style="list-style-type: none"> Inquiry focus: shifting from "incorporating multimodal reflection" through "developing an inquiry stance", and to "having students be reflective as who they are" Emotions of self: Excited, nurturing, peaceful, insecure, overwhelmed, optimistic, nervous, feasible, appreciated People: Facilitator, inquiry community members, students Key ideas: Learning to take risks; valuing student-centered classroom Emotions of others: Thoughtful, trusting, responsive, energetic, cheerful, worthwhile Change: inquiry as a project to inquiry as stance; intentional practices in his classroom  <ul style="list-style-type: none"> CTE: I'm hopeful that in the future that we, you know, whatever we may be doing that we would be able to, like, call upon different people in the class for help. CTE: I think it's just so nice to have other people helping you with the process. It's made me feel like better about what I'm doing and how I'm doing it. And it's also just enjoyable to be part of a community that wakes that. <p>10.06.22</p>	<p>4</p> <h3>Data Collection</h3> <ul style="list-style-type: none"> Inquiry focus: students adopting a reflective mindset Emotions of self: excited, overwhelmed, hopeful, thoughtful, peaceful, powerful, important People: Family, facilitator, inquiry community members, literature, students, students' parents Key ideas: confronting his assumption on students' understanding of reflection; teaching students' what reflection is; involving parents in student learning; supporting classmates by providing validation. Emotions of others: nurturing, creative, appreciated, frustrated, valuable Change: incorporating reflection as part of parent-teacher conferences; enhanced data literacy  <ul style="list-style-type: none"> CTE: if it weren't for like the group sharing different things and pointing things out... there's no way I would have got to where I am now. CTE: it's like a communal frustration that we identify or bring to light but it's something where we'll address and be like "oh yeah, this is frustrating, but that's okay". We're gonna get frustrated in moments of like collecting data. <p>10.27.22</p>
<p>5</p> <h3>Data Analysis</h3> <ul style="list-style-type: none"> Inquiry focus: students adopting reflection as part of their identity Emotions of self: overwhelmed, excited, optimistic, anxious People: Facilitator, inquiry community members, collaborator Key ideas: growing awareness of his own learning as a facilitator of reflection process; finding new wonderings; developing partnerships with colleagues; an inquiry community with shared goals and experiences; reflecting on his coaching skills; Emotions of others: intimate, discerning, daring Change: his development of a growth mindset; framing inquiry with asset-based, student-centered thinking  <ul style="list-style-type: none"> CTE: Eva was talking about the benefits she saw with her college students, and just giving them an option, and then it's like, "well it's working really well with those students, why can't it work well with like my students?" <p>11.23.22</p>	<p>6</p> <h3>Inquiry Sharing & Action Planning</h3> <ul style="list-style-type: none"> Inquiry focus: how am I framing my questions so that my students don't have that deficit type of mindset? Emotions of self: proud, responsive, nurturing, helpless, excited, skeptical, aware, overwhelming, daring, surprised, nervous, appreciated. People: Facilitator, inquiry community members, (orally, students, students' parents) Key ideas: gaining clarity on what data to include; sharing rather than performing Change: heightened awareness of his language and actions; with inquiry as stance, inquiry could be on a smaller scale  <ul style="list-style-type: none"> CTE: So if I [implied] could go to any of these people and they would, they would genuinely want to help me out with that sharing. CTE: if you're going to have an inquiry stance, you'll be able to tackle the harder problems. You'll be able to look at it through different perspectives. So it's not something where it's so a matter of fact, but rather, lets try all these different things... if that works well, how can we even improve upon that so I find so much about the final product, but just concerning to support students in any way possible. <p>12.12.22</p>
<p>7</p> <p>The same as pre-inquiry</p>	<p>8</p>
<h3>Perception of Inquiry Community (Post)</h3> <ul style="list-style-type: none"> No 5: Members of the class are entrusted to make decisions for the class. No 8: People's ideas and expertise are valued in this class. No 9: The class continually re-examines the extent to which teaching practices support the learning of all students. No 12: The class holds shared beliefs about instructional approaches that are most effective for student learning. No 17: The facilitator shows concern for the class. No 19: The facilitator regularly acknowledges the accomplishments of individuals and teams within the class. <p>12.12.22</p>	<h3>Artifacts</h3> <ul style="list-style-type: none"> Letter to a Colleague (Alina) Wondering Litmus Test Inquiry brief (old) <ul style="list-style-type: none"> Wondering: What strategies can I implement to support my students develop their identity as reflective learners? Inquiry brief (updated) Finding your findings Inquiry Journal Final Inquiry Presentation Slides Action Plan <ul style="list-style-type: none"> CTE: "Neither one of my wonderings would have been conceived without the help from everyone in the inquiry community. They were able to direct my focus towards providing students an opportunity to reflect regardless of how that looked. This newfound focus on equity allows me to reach students where they are and provides resources to encourage them to continue to grow". CTE: Talk to Alina, Jessica, and Lawrence about doing an inquiry cycle together; set up monthly meetings with Sue to converse regarding what is going well, what can continue to do to strengthen my practice and check for deficit mindset.

Figure 3-3: Case study database, using Oliver's case for example.

Process of Analysis

For my initial round of deductive analysis, I used the framework presented in Table 2-1 as an analytical lens, which was adapted from Hite and Donohoo's (2021) model for leading collective teacher efficacy. I used the codebook (Appendix B) based on the framework I developed (Table 2-1), and applied the eleven codes (goal consensus, empowered teacher, embedded reflective practices, cohesive teacher knowledge, supportive leadership, mastery, vicarious, social, emotional, CTE+, and CTE-) to all the interview data of the four primary participants. To account for additional items not captured in Hite and Donohoo's Model of Leading Collective Teacher Efficacy (Figure 2-2), I created an additional code, "others." To facilitate the analysis, I employed Zotero, an open-source reference management software, to code the 20 interview transcripts. In Zotero, I inserted comments, where I applied a priori codes to the segments using "[[]]" and simultaneously conducted Process Coding (Saldaña, 2021) by italicizing the notes of the actions/interactions with "***." The annotated notes were then exported to Obsidian, a note-taking software. This resulted in 20 notes in Obsidian, which I stored in one folder called "Quotes." In each note, I organized the coded data by including relevant information such as source and time (e.g., Oliver, Interview 3/5, 10.27.22) within each coded segment (Figure 3-4). Then, I compiled the coded segments across the primary participants pertaining to each specific code. This resulted in twelve separate notes in Obsidian, which I stored in one folder called "Codes" (Figure 3-5).

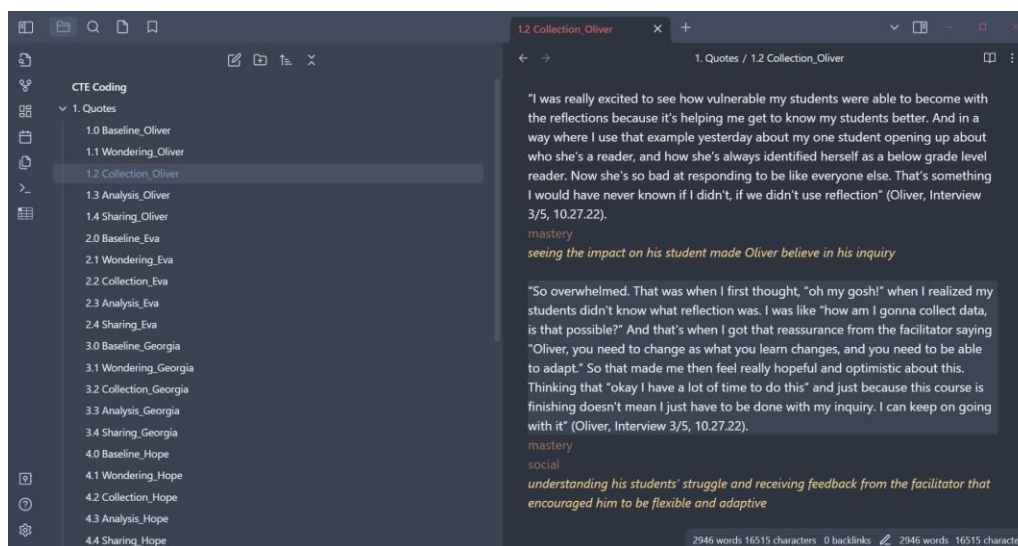


Figure 3-4: Annotated notes of each interview in the folder “Quotes” in Obsidian.

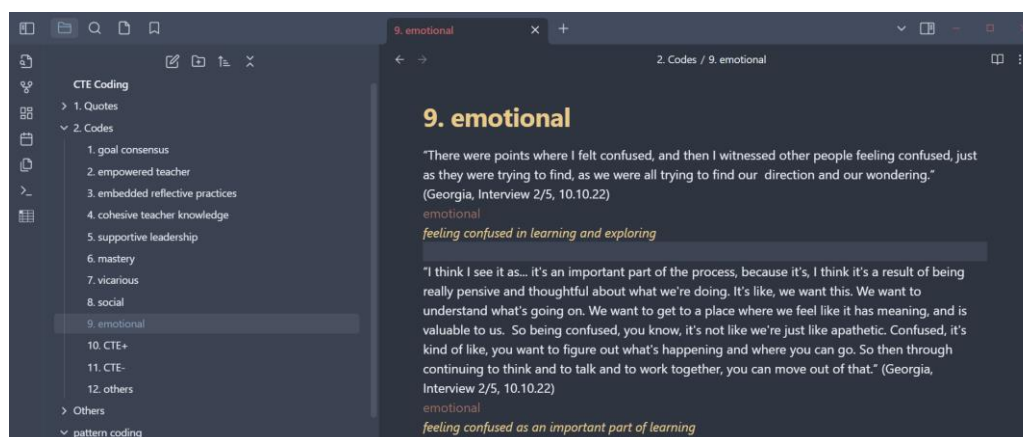


Figure 3-5: Coded segments organized by code in the folder “Codes” Obsidian.

In response to the first research question about context, I performed another deductive analysis specifically focused on the segments initially coded as “goal consensus, empowered teacher, embedded reflective practices, cohesive teacher knowledge, and supportive leadership.” Within each code, I applied the subcodes in Category One (Appendix B). For instance, under the code “goal consensus,” I used the four subcodes: Community, Realistic, Clear and Specific, and Collaborate. Next, I reorganized the coded segments based on these subcodes, and thoroughly

examined them to identify patterns and synthesize information within each subcode. The patterns derived from this analysis were then used to construct a comprehensive description of the research context. As an example, within the “goal consensus” code, I identified two distinct patterns: inquiry as a shared practice and community agreements as shared learning goals. To provide a vivid description of the case context, I used narrative description (Miles et al., 2020), weaving other relevant artifacts into the narrative. For example, related to goal consensus, I incorporated the course text (Cochran-Smith & Lytle, 2009) to illustrate the shared practice of using inquiry, as well as my field notes to introduce the community agreements established by the educators. Finally, I read through the narrative, and renamed the section as “community consensus” to capture the essence of this inquiry community more precisely. With this, I aimed to answer the first research question in detail.

To address the second research question, I focused on the subunit level, which was the individual participants’ experience within the inquiry community. By examining subunits of analysis in this single-case study, I was able to conduct a more extensive analysis that provided valuable insights into the single-case (Yin, 2018). To understand how collective teacher efficacy was formed, I selected one primary participant to illustrate how one efficacy-shaping source unfolded within the inquiry community. This analytical decision was informed by Goddard et al. (2000) who argued that collective teacher efficacy is the product of the interactive dynamics among group members. By paying attention to the subunits, I aimed to minimize the potential for individual perceptions to be overshadowed by the group’s overall perception. I first reorganized the segments based on individual participants. Since the general codes “mastery, vicarious, social, and emotional” were too broad, I conducted sub-coding to enrich the entry (Miles et al., 2020). This approach allowed me to gain insights into each participant’s experiences within each source and notice the variation in their experiences in relation to each specific source. For example, when examining the segments coded under the “emotional” code, I observed that Hope had the

most diverse range of reported emotional responses, which could serve as an exemplification of this source. Drawing from this examination, I made decisions on which participant's experiences would be utilized to exemplify the role of each efficacy-shaping source. Next, I extracted the selected participant's segments that were coded under each source. Then, I reorganized them to discern the underlying storyline and identify the empirically based patterns. After that, I used pattern matching logic (Yin, 2018), to compare empirically based patterns with predicted patterns as informed by relevant literature. The themes that emerged from this analysis provided the necessary insights to address the second research question, as I utilized individual episodes to illustrate the significance of each specific efficacy-shaping source.

To answer the third research question, I returned to the larger unit of analysis, the original case: perceived collective teacher efficacy, which Goddard et al. (2004a) conceptualized as individual participants' perceptions of group capabilities. Since the general codes "CTE+" and "CTE-" were too broad, I conducted subcoding to attribute more interpreted meanings to the data (Miles et al., 2020). During this process, I realized that the segments under the "CTE-" code were primarily related to perceived barriers to increased collective teacher efficacy, rather than about their felt decreased collective teacher efficacy. Therefore, the code "CTE-" was renamed as "Barriers to CTE." Instead of being used to address the third research question which was about the details of collective teacher efficacy, the coded segments were utilized to inform the study's discussion of factors that facilitated and impeded collective teacher efficacy.

As for the substantial data under the "CTE+" code, the application of subcodes allowed me to enrich the code through noting the particular characteristics, such as "CTE+ commitment to student learning," "CTE+ commitment to other educators," and "CTE+ more collaboration." Next, I clustered the subcodes according to commonality. To identify the participants' underlying perceptions of collective teacher efficacy, I adopted a more purposeful method called "themeing the data" (Miles et al., 2020, p. 73) to elaborate on the units of data. By applying extended

thematic statements to the assemblage of the subcodes and the associated units of data, I generated 12 statements of collective teacher efficacy (e.g., participants believed in their ability to consistently make efforts in supporting other educators).

Trustworthiness

This study was designed and executed with caution to meet standard conventions of trustworthiness. It is important to note that qualitative research does not primarily aim for validity (Stahl & King, 2020). Instead, qualitative researchers strive to achieve trustworthiness, ensuring that readers can have a sense of confidence in the researcher's reported findings (Stahl & King, 2020). To put it another way, readers should be immersed in richly detailed narratives that make the event or the object under study palpable, which is often accomplished through "thick description" (Geertz, 1973). In this study, I used the constructs of trustworthiness by Stahl and King (2020), which were informed by the principles outlined by Lincoln & Guba (1985), as a guide to cultivate trust in this qualitative study and its findings. Three approaches to understanding trustworthiness are as follows:

Credibility. Credibility is a crucial aspect of qualitative studies as it ensures the consistency and the congruence in the study's findings (Stahl & King, 2020). To establish credibility, I employed four approaches: theoretical triangulation, data triangulation, prolonged engagement, and ongoing reflective analysis (Stahl & King, 2020).

Theoretical triangulation was one way to enhance credibility by incorporating multiple theoretical orientations, such as social constructivism and poststructuralism, to guide the research and interpret the findings (Stahl & King, 2020). In this study, I combined Bandura's (1997) social cognitive theory to conceptualize collective efficacy as an "emergent group-level attribute" (p. 478) with a sociocultural theory to study collective efficacy within context. By integrating these

theories, the study acknowledged the influence of social cognitive processes on the development of collective teacher efficacy and the significance of contextual factors in shaping efficacy development.

Another strategy to promote credibility was through data triangulation, which involves the use of multiple sources of data to generate findings (Stahl & King, 2020). To increase trustworthiness in this study, I collected and triangulated multiple sources of evidence (e.g., observations, documentations, and multiple interviews). Specifically, conducting interviews with the same participants several times and on several occasions served in its own way as a set of multiple sources. The utilization of multiple sources of evidence provides multiple perspectives and measures of the same phenomenon.

Prolonged engagement within the research context was another way to establish credibility throughout the study (Stahl & King, 2020). My familiarity with the research context began in the fall of 2019, when I enrolled in the graduate seminar called “Research in School-University Partnerships” for the first time as a course participant but not a researcher. That engagement provided a good understanding of the course schedule and community activities, which informed my research design. Between the months of August 2022 and December 2022, I engaged in the research site for this study, actively participating in the graduate seminar and inquiring alongside the study participants to establish relationships and understand their learning trajectories.

Finally, reflective self-analysis was practiced, ensuring credibility throughout the study (Stahl & King, 2020). During long-term observations, I took field notes in a notebook, focusing on the various activities, interactions, conversations, and group dynamics within the community. Right after each seminar session, I typed field notes and organized them into one document. During the research process, I also maintained the habit of taking analytic memos to document all the procedures and decision making in my case study, particularly of data analysis. This reflective

habit was to ensure that rich details were documented and included to provide a “thick description” for readers to interpret the study’s findings.

Transferability. Transferability in qualitative research seeks to extend understanding by transferring findings from one context to another (Stahl & King, 2020). The goal is for patterns and descriptions from a specific context to offer valuable insights and suggestions that must be evaluated before they are applicable to a new context (Stahl & King, 2020). One way to enhance transferability is by providing thick descriptions that include contextual information about the research site, by ensuring transparency about the research methods employed, and by providing the time frames within which data was collected (Stahl & King, 2020). In this study, I gathered data from multiple sources, created a case database, and kept analytical notes to ensure that data was triangulated to then provide rounded, detailed descriptions of the graduate seminar.

Furthermore, I attempted to make the research process as transparent as possible by documenting and organizing the data sources by the specific time periods during which data was collected.

Dependability. Dependability also builds trustworthiness as a second researcher assists in interpreting and understanding the findings, creating trust between the reader and the study. To achieve trustworthy interpretations, two common communication practices are peer debriefing and peer scrutiny (Stahl & King, 2020). Engaging with another researcher’s perspective and reactions regarding research procedures and findings serves to validate the researcher’s portrayal of the phenomenon (Stahl & King, 2020). To create trust in this study, I scheduled weekly debriefings with my advisor and occasional debriefings with peers. During these debriefing meetings, I articulated the decisions made during the research process, critically examined my own findings, and sought feedback to refine approaches to data interpretation and representation.

Research Ethics

I followed an indigenous approach to developing research relationships (Windchief & Pedro, 2019). To build supportive, trusting, and caring relationships with study participants, I situated myself as being lifted by four butterfly wings of indigenous research: cultural sovereignty, love, relationships, and decolonization (Windchief & Pedro, 2019).

First, cultural sovereignty is the ownership of core beliefs through the spirit of our ancestors (Coffey & Tsosie, 2001). In the research process, I remained humble as a researcher, understanding my responsibility to honor the participants' stories, narratives, and feelings. Second, according to Tsinnajinnie et al. (2019), love involves designing and pursuing research projects that “come from a place of wanting good things for your people” (p. 46). In the research process, I chose to “be love” by learning alongside my participants and prioritizing their needs. For example, I invited the participants to choose the place they felt comfortable having the interviews, which resulted in having interviews in elementary school classrooms, outdoor seats, university offices, and home. Third, establishing relationships with a research participant, according to Tsinnajinnie et al. (2019), is to make efforts to find our connection through networks, friendships, experiences, or shared values. My intentionality about building relationships with my participants was evident by the way I related myself to their beliefs, their experiences, and their networks. For instance, one study participant facilitated a community activity that was open to the public. To understand her experiences and contexts more, I asked her if I could be part of that community activity she facilitated and learned alongside her. Finally, I embodied decolonization. “To decolonize in the practice of research is to truly commit to a community, to engage in the active agendas of that community, and to ultimately assist in the recreation of institutions embedded in a Native paradigm of sustainability” (Tsinnajinnie et al., 2019, p. 46). My approach to decolonizing was to participate in the inquiry community fully as a

responsive member, to listen actively, to engage in small groups and whole group discussion, and to invest in community values and their constructs.

In addition, there are three ethical principles for research involving humans, which include respect, beneficence, and justice (Belmont Report, 1979; cited in Glesne, 2016). In my dissertation, I included these ethical considerations into my everyday interactions with study participants, within the inquiry community, and in relation to the study data.

I ensured that participants felt respected, meaning that educators who participated in the study did so voluntarily and with informed consent. I obtained the approval from the Institutional Review Board (IRB) at my university to conduct this study before study recruitment and data collection. I ensured that participants were informed about the research by holding an “invitation to participate” meeting to explain the research and participant expectations. This meeting served as a formal invitation and addressed the study’s potential risks. I concluded this meeting by inviting participants to sign a written informed consent form approved by the IRB.

In terms of the principle of beneficence, I anticipated little harm in this study. To mitigate the possible risk of loss of confidentiality, I developed a data collection and management plan, which underwent review and approval by the IRB at my university. One of the approaches to mitigate the risk was the use of pseudonyms to replace the names of all individuals and institutions mentioned in the study. I also ensured that direct identifiers (e.g., the names of the schools and institutes) were not linked to the data, by storing the list that connected pseudonyms to direct identifiers separately from the coded data. Additionally, given that my academic advisor and dissertation chair also served as the instructor of the graduate seminar, specific steps were taken and approved by the IRB office to mitigate the risk of loss of confidentiality. The participants were informed that the instructor would not have access to any research data until final grades were submitted. The instructor would only have access to the research data that was anonymized and after final grades were submitted. The names of the educators who participated

in this study remained undisclosed. Moreover, in any publications or presentations, study participants would only be referred to by pseudonym.

To ensure justice in both research and teaching, I considered forms of reciprocity. I made efforts to create a research environment that educators participating in this study would find beneficial and enjoyable, while also benefiting the community in which the study took place. To achieve that, I maintained ongoing discussions with the instructor of the graduate seminar (also my advisor). These discussions focused on designing the study, refining interview questions, and shaping the interviewing process to support the establishment of a strong community, to facilitate the learning of study participants, and to meet the research objectives. For instance, when study participants expressed uncertainty about differentiating the process of data analysis from data collection during interviews, I consulted the instructor about how to bring clarity to support both the interviewing process and the participants' engagement with inquiry. Our discussion resulted in the decision to provide an explanation at the beginning of specific interviews, clarifying that data analysis in inquiry is an ongoing process starting from data collection, which encompasses both formative analysis and summative analysis. This collaborative relationship facilitated a more seamless connection between participants' learning experiences within the inquiry community and the study, enhancing the quality of their learning experiences and the interview process. Additionally, the interview process itself presented an opportunity for reciprocity, particularly when interviews were designed to help participants gain a deeper understanding of themselves or their community (Glense, 2016). By engaging in these interviews, study participants engaged in regular and focused reflection on their learning within the inquiry community, including exploring their emotions and social environments. Engaging educators in exploring these two dimensions of their professional learning promoted agentive learning in the whole community.

Chapter 4

Case Analysis

This study aims to investigate collective teacher efficacy developed in an inquiry community and how such efficacy can be fostered in this type of community. To achieve this goal, the research questions guiding the study are: (1) How does an inquiry community create an enabling condition for fostering collective teacher efficacy? (2) Through what aspects of their experiences do the participants perceive the inquiry community as supporting their collective efficacy by tapping into the sources? (3) How do the participants understand their collective teacher efficacy in the inquiry community?

The chapter is organized into three main sections. The first section offers a thorough description of the inquiry community as the case context, as perceived by the participants, including the contextual factors they believe contribute to their efficacy development. These factors do not shape efficacy beliefs but rather create an environment that allows efficacy-shaping information to emerge. The second section highlights the four primary sources of efficacy identified by the participants, discussing how their experiences through the four sources supported their collective efficacy. The third section provides a description of collective teacher efficacy as understood by the study's participants. The chapter concludes with a succinct summary of the findings.

Contextual Factors of Inquiry Community

This section provides a thick description of the research context, a graduate seminar. Specifically, this section outlines four study participants' perceptions regarding contextual factors

conducive to the development of collective efficacy. This section addresses the first research question: How does an inquiry community create enabling conditions for fostering collective teacher efficacy? This question involves identifying an enabling condition that foster collective efficacy (Donohoo et al., 2020), which were adapted into five contextual factors: community consensus, development of shared understanding, reflective practice integration, skilled facilitation, and professional empowerment. Data used in this section include interviews, observations, field notes, and course materials.

Community Consensus. The ultimate vision of the graduate seminar, as stated in the course flyer, is to transform education systems so that all learners, families, schools, workplaces, and communities thrive. To achieve this long-term vision of success, community members were introduced to a learning methodology known as practitioner inquiry, which involves educators' systematic and intentional study of their own practice (Cochran-Smith & Lytle, 2009). The goal of inquiry is to identify opportunities to make meaningful contributions to practitioners' communities, the field at large, and, ultimately, the world. After gaining an initial understanding of the process and purpose of this inquiry, the eleven community members were invited to share how they envisioned the possible impact they could make as a result of what they learned in the class. They also envisioned themselves as a practitioner-inquirer through drawing. On the first day, community members had already begun to consider their site of inquiry and they change they would like to make. A general consensus on the use of inquiry in the class had already begun to emerge.

In addition to consensus around the use of inquiry, the community also developed a set of community agreements to guide their learning in the class. These agreements were rules that members of the inquiry community agreed to follow in order to support each other. As they shared their hopes and fears on the first day, the educators wrote down what they needed from one another to get the most out of the class experience. These notes were then posted on a board,

and community members worked collaboratively to synthesize everyone's needs and identify common themes. The initial thematic headers that emerged from this exercise were an emphasis on practical application, desire for a safe space with supportive relationships, and curiosity about ways to collaborate (Field Notes, 08.23.22).

To move beyond acknowledging collective needs and towards building a consensus around shared needs, one approach this community adopted was to create actionable community agreements. In the third week of the semester, the facilitator presented a list of community agreements that had been developed based on everyone's input and organized under thematic headers. Each educator was given time to silently review the list and indicate which agreements they deemed most and least important, as well as any missing agreements. The community then engaged in an open discussion where they collaboratively refined and clarified each agreement, exploring why they mattered and how they could put into practice (Field Notes, 09.06.22).

Another approach to supporting the community to embody the community agreements was to revisit frequently and adjust based on the evolving needs. During the fourth week, the community revisited the community agreements to adjust based on these evolving needs. They took the time to assess each agreement's effectiveness and make any necessary modifications, such as adding, reordering, deleting, editing, or merging agreements. This collaborative process ultimately led to the creation of six community agreements, which were subsequently posted on the course website for reference:

1. Share our experiences in authentic and accessible ways so that we can connect to one another as teachers, researchers, and humans.
2. Make this space safe. We will be restful and respectful, and we will maintain confidentiality so that we can be vulnerable.
3. Use time purposefully and meaningfully.
4. Affirm and value one another's experiences and perspectives.

5. Collaborate and reflect. We will talk, write, and think through our ideas in multiple ways - whole group, small group, pairs, and on our own.
6. Give feedback and pushback that is honest and beneficial. We will help each other grow. (Field Notes, 09.13.22)

During the process of developing consensus over community agreements, the four study participants identified three key components as crucial: focusing on professional learning when setting goals, engaging in a collaborative process, and frequently revisiting and adjusting the goals. Overall, the community consensus in this class was established early on and involved agreeing on both the use of inquiry and how to learn together as a community.

Development of Shared Understanding. Within the inquiry community, educators gained a comprehensive knowledge of each other's roles and practices, and this resulted in effective professional learning through the use of discussion protocols and explicit instruction on the inquiry process and its role. Among the protocols, the study participants identified the Paseo Protocol and Inquiry Circle as particularly impactful for building wide and deep awareness of each other's identities and practices. The Paseo Protocol, also known as Circles of Identity (Appendix F), was developed by the National School Reform faculty. In this protocol, participants draw a web of circles to represent elements of their identities and then engage in five rounds of timed conversation with different partners, responding to prompts provided by the facilitator, which include:

1. With which descriptors do you identify most strongly? Why is that?
2. With which descriptors do others identify you most strongly? How do you feel about that?
3. Describe a time when one of the elements of your identity definitely worked to your advantage, either in your educational experience or in other areas of your life.

4. Describe a time when one of the elements of your identity appeared to hold you back, either in your educational experience or in other areas of your life.
5. Which element(s) of your identity do you carry with you into this class most strongly? And why?
6. What would you leave at the door when you walk into this school/classroom? And why? (Field Notes, 08.30.22)

This dialogical process enabled community members to share aspects of their personal and professional lives and make space for others to do the same. There was an obvious excitement among community members as they moved around and exchanged stories with vulnerability. After that, the educators reflected on their experience and identify who was present in this community, and the implications for school-university partnership. Together, class members noted the diverse roles of teachers, learning, community members, etc., and described partnership as a source of “inspiration, experiences, angles, involvement, complexities, reflection, comforting, intentionality, and purpose, etc” (Field Notes, 08.30.22). This activity resulted in a more well-rounded understanding of the uniqueness and interconnectedness of the educators in this community.

Another protocol that had been considered critical in developing deep understanding was Inquiry Circles. In the third week, the class members engaged in a community-building activity following a protocol called Inquiry Circles (Appendix G), which was developed by the School Reform Initiative. This protocol involved three phases: storytelling, retelling, and crafting a positive inquiry question. In the storytelling phase, the class members paired up with one class member, taking turns storytelling their joys, commitments, and dilemmas in one successful moment of their work, while being encouraged to take notes. In the retelling phase, the partner pairs introduced each other to the whole class by retelling the story they heard, and welcomed clarifying questions from the whole class. Finally, the partner pairs provided each other with a list

of positive inquiry questions that emerged through the storytelling and retelling process.

Designed with the purpose of encouraging both a positive narrative and empathetic culture, this activity allowed the class members to publicize their life stories with details and some depth of emotion. For example, to Oliver, the memorable story of a quiet student writing him a thank-you letter to show gratitude revealed his relationships with and commitment to his elementary students. Eva's approach to modifying the attendance policy and class assignments demonstrated her intentionality in promoting her college students' learning autonomy. For Hope, storytelling that "I was a sixth-grade teacher, but not anymore" disclosed her grief at the loss of her teacher identity as she left elementary teaching for graduate school (Field Notes, 09.13.22). This activity offered rare, powerful glimpses into the varying teaching life stories of the class members, which raised a growing awareness of each other's teaching missions, practices, and also struggles.

Meanwhile, the shared knowledge of practitioner inquiry was also fostered through explicit instruction and focused discussion. In the second week of the semester, the class focused on developing shared theoretical foundations of practitioner inquiry, which included the component parts and the purposes of inquiry. The lesson began with the facilitator offering a mini lesson on the inquiry cycle and its circular process. According to Dana and Yendol-Hoppey (2020), professionals often inquire into their own practice by means of five core parts:

- posing questions or wonderings
- collecting data to gain insights into their wonderings
- analyzing the data along with reading relevant literature
- making changes in practice based on new understandings developed during inquiry
- sharing findings with others (Dana & Yendeol-Hoppey, 2020, p. 10).

While the core elements of inquiry were presented as a circle, the concept of inquiry is more of a progressive approach to learning that involves generating multiple insights and strategies (Dana & Yendol-Hoppey, 2020). An insight approach encourages teachers to gain

insights into their instruction by studying practice from various perspectives and rendering professional judgment. On the other hand, a strategic approach assists teachers in making strategic decisions by selecting among and evaluating multiple sources and instructional strategies (Kennedy, 2016). The facilitator explained that some inquiring teachers might first collect data to gain some insights into inquiry wonderings they would like to form, and then strategically plan for further data collection. To emphasize this circular, iterative, dynamic process, the facilitator drew arrows indicating its various routes that professionals might take (Field Notes, 08.30.22).

With an initial shared understanding of the inquiry process, the class members together learned inquiry as a tool for equity. They first watched the video called “Inquiry as a Pathway to Equity,” which presented two unique cases where an advanced program (AP) teacher and a school principal used inquiry as a mechanism for addressing equity in their contexts. The facilitator invited the class members to consider their institutions’ strategic plans and share their purposes of inquiry and its role in addressing equity in their contexts, emphasizing Cochran-Smith and Lytle’s (1993) assertion that the overarching purpose of practitioner inquiry is to improve the lives and futures of children. This focused discussion created an opportunity for the class members to think on the same page.

Reflective Practice Integration. Reflective practice was a fundamental feature of the graduate seminar, supported by its learning methodology and structure. Practitioner inquiry, the learning methodology promoted in this graduate class, involves intentional reflection for the purposes of engaging educators in a planned process that heightens their focus on problem posing (Dana & Yendol-Hoppey, 2020). For instance, during the wondering development phase, class members engaged in critical self-reflection by taking the wondering litmus test (Appendix G), which guided their written self-reflection through the prompts such as:

- Is your wondering something you’re passionate about exploring?

- Does your wondering relate to and build upon your professional goals, and the goals of your professional community?
- Is your wondering focused on student learning?
- Is your question a real question? Something you don't already know the answer to?
- Is the wondering focused on your practice? (Dana & Yendol-Hoppey, 2020)

The process of guided self-reflection was instrumental in helping the class members to intentionally assess the alignment between their inquiry wondering, personal passion, goals, practice, and its impact on student learning. This reflective process facilitated the refinement of their inquiry wondering, as illustrated by Georgia, who narrowed her focus from supporting the growth of the whole school program teams to supporting the interns' development of a growth mindset (Field Notes, 09.25.22). The wondering litmus test served as a useful tool for Georgia to engage in self-reflection and evaluate her current wondering and revise her focus to better support the interns.

While inquiry involves intentional reflective practices, it also includes dialogic practices, such as emphasis on the use of scholarly literature. Reading offered inquirers an opportunity to place themselves in dialogue with authors of scholarly articles, videos, and blogs they created. These resources provide an additional avenue for participants to reflect on their perspectives, experiences, and trajectories in relation to a wide range of scholarly voices.

Fundamentally, inquiry communities serve as a structure that makes reflective practices visible, public, and therefore collaborative. The inquiry community is nurtured based on the belief that practitioners possess a significant amount of knowledge and expertise. In other words, the seeds of development are to be found in the community itself. Transformation of practice and improvement of students' learning can be achieved through collaborative generation of questions, theories, and strategies, as well as collective exploration and evaluation of the knowledge, practices, and theories of others (Cochran-Smith & Lytle, 2009). To illustrate this, one class

meeting was dedicated to public, collaborative reflective practices around inquiry plans. Using a protocol called Inquiry Brief Tuning (Appendix I), each participant had a chance to present their proposed inquiry plan and receive both warm feedback that identified areas of strength and constructive feedback that indicated the feasibility of the inquiry plan and additional areas for consideration. Then, the presenter reflected on what they wished to consider in refining the plan for inquiry. Finally, the whole session participants concluded with an open, whole group discussion. By fostering group interaction and providing a structured protocol, the inquiry community created opportunities for class members to engage in collaborative reflection, making their practice and reflection public for advice, feedback, and resource provisions. This collaborative approach led to greater depth of reflective thinking.

Skilled Facilitation. While the previous sections did not specifically focus on facilitation, it is clear that the facilitator played a crucial role in creating structures that afford learning resources and a culture of solidarity that maximize the use of resources through promoting community consensus, fostering shared understanding, and embedding reflective practices. Facilitation is a multifaceted process that involves supporting and empowering individuals and groups to learn and take action. In addition, skilled facilitation in the inquiry community includes instilling practitioner inquiry as a stance rather than as a project through a developmental approach. The facilitator accomplished this by raising awareness and increasing mindfulness.

In the third week of the semester, the facilitator explicitly introduced the concept of inquiry as stance by having the class members read Chapter One of the book, *Inquiry as Stance* (Cochran-Smith & Lytle, 2009), and discussed impactful passages with peers. Inquiry as stance is conceptualized as “critical habit of mind that informs professional work in all its aspects” (Cochran-Smith & Lytle, 2009, p. 121). The participants’ inquiry journals show that Georgia was inspired by the notion that “deep and significant changes in practice can only be brought about by

those closest to the day-to-day work of teaching and learning” (p. 6), while Oliver resonated with the idea of “putting students at the center of investigating topics of concern to them in their own lives and communities” (p. 12). Eva was moved by the idea that “at the heart of practitioner inquiry is problematizing the ends question”, which is about “question(ing) the fundamental goals of teaching, learning, and schooling.” The facilitator effectively helped the participants develop an awareness of inquiry as “a part of” teaching rather than “apart from” it (Dana, 2015), with a transformative goal, and through a process of caring for students. Their awareness of inquiry as stance was evidenced by their noticing, thanks to the facilitator’s introduction of a key concept.

Moving from awareness of inquiry as stance to truly embodying inquiry with mindfulness requires ongoing guidance and support from the facilitator. While the class members had gained an understanding of inquiry as stance, some of them initially approached their inquiry as projects rather than as an integral part of their teaching practice. For example, Eva had originally planned to investigate her students’ rural funds of knowledge, but she later experienced tension and realized midway that this inquiry project was not really a part of her current work but “apart” from her work. The facilitator helped Eva refocus her inquiry to identify an aspect of her current practice that could benefit from inquiry. This guidance helped her to embrace inquiry as stance more fully. Similarly, Oliver felt pressure to complete all the tasks in his inquiry plan within the class time, but the facilitator reminded him that the inquiry process is ongoing and cannot not necessarily be completed in one semester. This guidance helped Oliver to approach his inquiry with a commitment to continue his inquiry beyond the class, embodying inquiry as stance rather than being bounded by time. Overall, ongoing support from the facilitator was crucial in helping the class members move from an intellectual understanding of inquiry as stance to fully embodying it in their teaching practice. Skilled facilitation in this inquiry community means providing developmental support to increase their awareness and their internal capacities to embody inquiry as stance.

This skilled facilitation requires not only extensive knowledge of practitioner inquiry, but also a trusting relationship and collaborative approach to learning alongside practitioners so as to provide timely and constructive support.

Professional Empowerment. The inquiry community model empowers professionals through the use of inquiry and the design of community. By taking the view that “every site of professional practice becomes a potential site of inquiry” (Cochran-Smith & Lytle, 2009, p. 121), inquiry empowers inquiring professionals through affirming their knowledge. Although the class members had varying roles and were participating in different formal and informal educational contexts, this learning methodology positions them as credible knowledge producers of their contexts, and values the knowledge, questions, concerns, curiosity that professionals bring to the table.

Additionally, learning through inquiry involves sharing the work with others, and knowledge sharing is empowerment. The process of sharing learning with others empowers professionals, turning them into leaders who can contribute to reforming the profession of teaching from the inside out and invite other professionals to similar engagements with their students. In this graduate class, the last two sessions were dedicated to “Inquiry Celebration.” This design aimed to celebrate the class members, giving time for them to share the process of them becoming knowledge producers and leaders of their inquiry topics. The varying educational topics that the class members shared included:

- Trust in education
- Supporting teachers’ inquiries into difficult topics
- Teacher educator identity
- Centering multilingualism with preservice teachers
- Dissertation work in community
- Developing of reflective learner identities in students

- Universal Design Learning in college teaching (Field Notes, 11.29.22)

Another way the class members were empowered was through enhancing their agency in the inquiry community. For instance, one activity involved writing what they needed help with on sticky notes and posting another note offering support to others. This is one example of an activity that unlocked the potential power of agency and cultivated their leadership potential in assisting others.

Sources of Collective Teacher Efficacy in Inquiry Community

In this study, I aimed to describe the study participants' collective teacher efficacy developed as they participated in an inquiry community. This section addresses the second research question: Through what aspects of experiences do the participants perceive the inquiry community as supporting their collective teacher efficacy by tapping into the sources?

Collective teacher efficacy refers to educators' shared beliefs that, through their combined efforts, they can positively enhance student experiences and life chances (Donohoo, 2018). In this study, collective efficacy was conceptualized as an "emergent group-level attribute" (Bandura, 1997, p. 478), which arises from interactions and relationships between group members, as they recognize their ability to achieve goals together. In this study, collective efficacy was investigated through gathering individual perceptions of group-referent capability over time (Goddard et al., 2004a).

According to social cognitive theory (Bandura, 1996, 1997), four sources shape an individual's sense of efficacy: mastery experiences, vicarious experiences, social persuasion, and emotional states. While these four sources have been shown to be critical to an individual's efficacy development, Bandura (1977) also posited that they may also contribute to the development of collective efficacy through similar cognitive processes. These processes involve

interpreting and attributing efficacy-shaping sources, analyzing task difficulty, and assessing group competence (Goddard et al., 2004a) While much prior scholarship has examined the sources of efficacy at the individual level, less is known about how these sources may function to promote collective efficacy and, in particular, among educators engaged in professional learning within contexts such as inquiry communities. Further research was therefore needed to understand how sources of efficacy-shaping information play out at the collective level, especially emotional states (Goddard et al., 2004a).

The previous section of this chapter has addressed the inquiry community as a context that creates conditions for efficacy development. The following section analyzes how the educators' experiences in the inquiry community influenced their sense of collective efficacy. This section is organized into four main subsections, corresponding to the four efficacy-shaping sources posited in Bandura's (1996, 1997) theory. To portray the development of collective efficacy among the participants, I showcase an episode from each participant's experience in the inquiry community. In each subsection, using a specific source as a lens, I analyze the episode in terms of the role that specific source played in the development of collective efficacy in this inquiry community.

Mastery Experiences

Mastery experiences are among the most powerful sources that shape collective efficacy (Goddard, 2001, 2004a). Mastery experiences are educators' firsthand, direct experience with success or failure. According to Goddard et al. (2004a), whether these experiences contribute to the development of collective efficacy depends on educators' interpretive processes, which include their interpretation and attribution of the sources of the experience, their analyses of the

difficulty of tasks they face, and their assessment of the competence of the group in which they are participating. When educators interpret their direct experiences as successes, this interpretation can enhance their efficacy beliefs. Conversely, when educators interpret their experiences as failures, their efficacy beliefs can be undermined. Attributions also play a role in mastery experiences (Goddard et al., 2004a), with educators' attributions of their successes to internal causes enhancing their self-efficacy, while attributions of success to luck less likely to strengthen their efficacy. However, success attributed to the efforts and support of the group can enhance collective efficacy. Additionally, educators' perceptions of the difficulty of a task are crucial (Goddard et al., 2004a), because experiences of success that are too easy may not contribute to the formation of efficacy beliefs. A resilient sense of collective efficacy is developed through experience in overcoming difficulties with persistent effort (Goddard et al., 2004a). In other words, groups or communities that have faced and overcome adversity are more likely to have a strong sense of collective efficacy.

Mastery experience in this study was analyzed as a means for better understanding participants' direct experience as equity-oriented practitioners in this inquiry community. When study participants considered their experience to be successful, and if they attributed such a success to the efforts of the community, these perceived successful experience analyses revealed an increase in their collective efficacy; when the experience as equity-oriented practitioners was interpreted as failure, analyses indicated a lower sense of collective efficacy.

In this subsection, I present one episode of Oliver's experience learning to be an equity-oriented practitioner in the inquiry community as a way to illustrate my analyses of mastery experience. Oliver's episode is followed by an evaluation of his story related to the role of mastery moments in the development of collective efficacy.

Episode: Oliver

Oliver, a third-grade teacher, initially struggled with locating his passion and purpose for inquiry. It wasn't until he had conversations with his classmates that he was able to clarify his passion and purpose for inquiry. He said,

I [didn't] know what I [was] really going to be passionate about. I think that's when it was a real struggle.... When we started to have conversations [about what our inquiry would be], that's when the process of it started for me at least to go really well because I was able to have a better idea of what I wanted to do. (Oliver, Interview 2/5, 10.6.22)

Through verbalizing his ideas in the community, Oliver knew he wanted to use inquiry to support his third-grade students in becoming reflective learners. His inquiry had a purpose for equity. By integrating reflective opportunities in his third-grade classroom, he intended to elevate his third-grade students' voices and agency for learning. However, with good intention, Oliver felt overwhelmed because he considered reflection as a behavior, and assumed he had to incorporate student reflection into every single subject. As he refined his inquiry question with other class members, they helped him to shape inquiry in ways that seemed accomplishable to him. One of his classmates suggested an alternative view of reflection as a habit to develop while another classmate provided an example of having students reflect on different moments instead of in all subjects, such as critical moments when students felt upset and had a need for clarity. Oliver appreciated these diverse perspectives because they helped him to find feasible ways to include reflective opportunities in his third-grade classroom. Oliver stated:

If it weren't for the group sharing different things and pointing things out... there's no way I would have got to where I am now. If it wasn't for the creativity and the mindset that different people have to see things in a different way... They brought me to the wondering I have now. (Oliver, Interview 3/5, 10.27.22)

Before the dialogue with the group, Oliver had formed his inquiry wondering as “What strategies can I implement to help support my students develop their identity as reflective learners across all disciplines?” (Oliver, Inquiry Journal, 9.20.22). The dialogue with the group helped Oliver to refine his inquiry wondering: “What strategies can I implement to support my students develop their identity as reflective learners?” (Oliver, Inquiry Journal, 10.25.22).

With excitement and confidence in his inquiry, Oliver incorporated reflective practices into his classroom by having his third-grade students reflect on themselves as readers and writers. As Oliver observed his third-grade students using reflection, he overheard his students’ conversations among themselves about what reflection was. As part of his inquiry data collection, he noted one such conversation. Several of his students were referring to reflection as an image seen in a mirror. Oliver thought to himself, “oh my... my students didn’t know what reflection was... how am I gonna collect data? Is that possible?” (Oliver, Interview 3/5, 10.27.22). However, Oliver paused and decided to stop the lessons he had planned that used reflection. Instead, he invited his students to gather and together they developed a community definition of reflective practices. Through their collaboration, Oliver and his students developed a shared definition of reflective practices, and came up with a cycle of reflective practice that included four steps (see Figure 4-1). As Oliver looked back, he stated “that was really good for me to take that step back” (Oliver, Interview 3/5, 10.27.22).

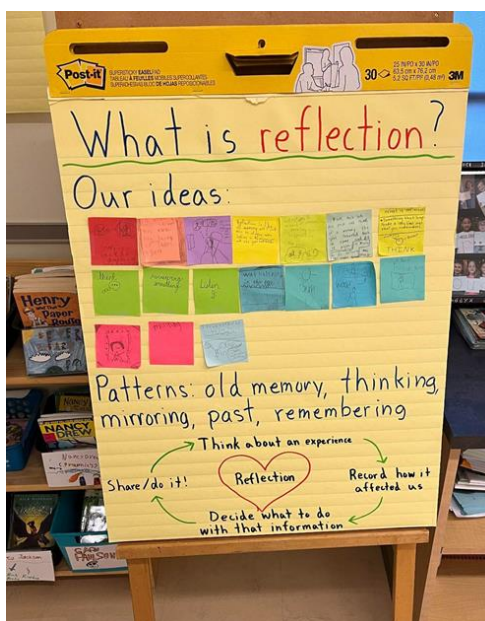


Figure 4-1: Oliver's photo of the reflection cycle (Field Notes, 10.25.22)

Oliver felt excited about the cycle of reflection his students created, but at the same time felt worried because he was not “following” his inquiry plan. When Oliver came to the seminar, he quickly shared his experience adjusting the lesson with the facilitator, and he felt relieved when he received affirmation from the facilitator regarding his decision to make adjustments according to his students’ needs. One key exercise in class on that day was to analyze the data they collected so far in their inquiry. This opened up a chance for Oliver to share one piece of student reflection that stuck him as he collected data. One of his third-grade students opened up to him about her feeling of being below grade level for her entire life and her goal of “being where everyone else is in the class in terms of reading” (Field Notes, 10.25.22). Hearing how Oliver narrated his feelings about the student reflection, one class member, Hope, highlighted how precious it was to learn students’ thoughts through the reflective opportunities he created. It helped Oliver to really recognize the opportunities that reflection created for his students. With Hope’s suggestion, he wrote in his inquiry journal:

I would have never imagined providing students a chance to reflect on who they are as readers would provide me a chance to get to know my students better. ... It means that I need to be offering more opportunities where my students can open up about how they are truly feeling. Those feelings will allow me to be a proactive teacher and inform me to implement new learning I would have otherwise not have thought of myself. (Oliver, Inquiry Journal, 10.25.22)

As he looked back on this experience, he reflected:

I didn't realize how important it was until Hope started talking to me. She's like "wow, Oliver, that's really powerful. That shows why reflection is so important in the classroom." That was very helpful. (Oliver, Interview 3/5, 10.27.22)

In addition to involving Hope in his data analysis, it also mattered for Oliver to support his classmates as a member of this inquiry community that was committed to the learning of one another. Part of this for Oliver meant that he came to realize he had expertise to share regarding reflection. In Oliver's conversation with Georgia about her data, for example, she expressed her frustration with the responses (number and content) of a survey she collected from the interns she worked with. Georgia provided surveys as a way to involve the interns in reflective practices, but she found that the interns did not engage in the reflection very much and one student in particular viewed reflection as negative. In their conversation, Oliver made attempts to involve Georgia to interpret the data differently and in a more constructive way. Oliver described,

We were trying to talk about a finding through there and it almost brought another wondering, like "how do I address a student who views reflection as a negative?" ... not to think what she's doing is a failure only.... So we're trying to think of... even just having a simple conversation, could that be enough? (Oliver, Interview 4/5, 11.23.22)

The way Oliver supported Georgia was to orient her to turn her frustration into curiosity, considering what her interns really wanted her to learn, and what else she could do to try to

engage the interns who were disengaged. When Oliver reflected on this process of involving Georgia to pose questions and make adjustments, which was similar to what he did in his classroom, Oliver described,

I think that was good to have that conversation because both of us are in a similar place where we have some good findings about our initial wondering. Through that, we now have new wonderings that we can continue on with as we go through this journey.

(Oliver, Interview 4/5, 11.23.22)

Both Oliver and Georgia encountered unexpected student reactions in their inquiry. In this collaborative process, Oliver worked alongside Georgia to interpret their unexpected findings in a constructive manner, asking questions to deepen their respective understanding. As they continued their journey of inquiry, Oliver, who had initially focused on his students' reflective practices, began turning inward and questioning his own growth as an equity-oriented practitioner who not just facilitated reflection but also embodied and modeled reflective practices. He wondered "how can I continue to grow as a teacher? Am I a reflective teacher?" (Oliver, Interview 4/5, 11.23.22)

At the end of the semester, Oliver shared his inquiry process with the whole community. His experience participating in this inquiry community engaged him not only in questioning his teaching but also the broader practice of his learning as a teacher. He described this journey as a good "rabbit hole," which was a metaphor he came up with in our interview. He elaborated, "It's okay to keep having more and more questions that stem from a question, and they can go down this rabbit hole. That's not a bad rabbit hole because ultimately, it's benefiting. If your original question and focus is truly student centered, then what's going to come off of that is going to benefit the students and yourself." (Oliver, Interview 4/5, 11.23.22)

Analysis: Role of Mastery Experiences

Oliver's episode provided several instances of mastery moments that contributed to his sense of collective efficacy as an equity-oriented practitioner. According to Goddard et al. (2004a), study participants' interpretation and attributions of these mastery moments, as well as their analysis of inquiry engagement and assessment of the competence of other practitioners all play some role in informing their sense of collective efficacy. In the following section, I analyze Oliver's mastery experience to help us better understand the ways mastery experiences serve as a source of collective efficacy. Oliver's experience was used in this dissertation to illustrate the mastery moments of the inquiry community. Although his story is highlighted here, it is important to note that research analysis reveals strong evidence that the other study participants also experienced mastery moments as a source for collective efficacy.

Evaluating Complexity and Resources. One mastery moment that Oliver identified was to successfully define a focus for inquiry with the support of other practitioners. As Goddard et al. (2004a) noted, evaluating the complexity of the task and the resources available to complete the task is an important component of building collective efficacy. Oliver's experience revealed that defining a focus for inquiry was hard for him, and he perceived it as "a real struggle". The way he overcame this struggle was through conversing with the class members vulnerably, as he said, "When we started to have conversations (about what our inquiry would be), that's when the process of it started for me" (Oliver, Interview 2/5, 10.06.22). Oliver further described what made this conversation successful. He said:

I didn't feel vulnerable enough to just immediately open up, because I'm a naturally shy person. Once those barriers were put down, once I was able to feel comfortable, that's when true learning was able to happen. So that's why I felt I was able to actually make progress with my wondering. (Oliver, Interview 2/5, 10.06.22)

For Oliver to find a specific area of focus for study, he needed a place for exploration, a place where he felt comfortable enough to openly share his opinions and struggles regarding the complexity of inquiry development. Describing the inquiry community as “trusting” (Oliver, Interview 2/5, 10.06.22), Oliver seemed to perceive the seminar as a safe space to be vulnerable to evaluate the complexity of inquiry and the resources available for navigating the inquiry process (Goodard, et al., 2004a).

Assessing Individual and Group Competence. Another significant mastery moment that informed Oliver’s sense of collective efficacy was how the community prepared him to enact inquiry. Goodard et al. (2004a) emphasize that assessing individual and group competence is another important aspect of building collective efficacy. Oliver’s experience, as demonstrated in the episode, showed that despite having a vision for the process of inquiry, he didn’t feel very competent in carrying out his own plan for inquiry. He described, “I felt a little bit overwhelmed about my inquiry prior to last class, because I was thinking ‘how am I going to incorporate reflection into every single subject?’ (Oliver, Interview 2/5, 10.06.22). When Oliver had a chance to have focused dialogue with other educators through the use of a protocol discussion in seminar (Inquiry Brief Tuning Protocol: Seven Steps to a Fine-Tuned Plan for Inquiry; Dana & Yendol-Hoppey, 2009), he was able to share his concerns of his inquiry plan not feeling doable for incorporating reflective practices into all subjects. His classmates listened and responded by sharing different ideas, which included a concept of viewing reflection as a habit to develop. According to Oliver, his classmates’ advice helped him to “shift [his] mindset from ‘teaching students how to do reflection’ to ‘incorporating reflection into who they're going to be’” (Oliver, Interview 2/5, 10.06.22). Oliver shared his perception of his classmates’ competence with the inquiry process in the first interview when he said, “after having a conversation with everyone and doing that sitting down in the development and listening to everyone, I feel optimistic now

that my new inquiry is something that I'll actually be able to accomplish" (Oliver, Interview 2/5, 10.06.22).

For Oliver to feel competent in enacting his inquiry, he needed to have relevant concepts and deep knowledge for shaping inquiry in ways that could be part of his daily work. He attributed the advancement of his knowledge to the small group he worked with on the protocol: "if it weren't for the group sharing different things and pointing things out... there's no way I would have got to where I am now" (Oliver, Interview 3/5, 10.27.22).

What this mastery moment meant to Oliver was he came to recognize the strengths, knowledge, and resources of other educators; and in turn Oliver recognized his own competence in the inquiry process. Although Oliver initially had low competence in implementing reflective practices in his classroom, he found success in building his knowledge and skills through leveraging the assets of the community. As he described the inquiry community as "thoughtful" and "responsive," he seemed to perceive this community of educators as a group with a repertoire of knowledge and expertise to support him towards his goal, and with willingness to respond and engage in a constructive exchange of ideas.

Experiencing and Overcoming Challenges. Another critical moment was Oliver's experience overcoming difficulties - his own, as well as his classmates' - by being affirmed of his adaptive skills and being encouraged to use his skills to support others. According to Goddard et al. (2004a), developing a strong sense of collective efficacy that can withstand challenges requires experiencing and overcoming difficulties with consistent and persistent effort.

As illustrated in Oliver's episode, when he recognized that his third-grade students didn't understand reflection, he quickly changed his plan from incorporating reflective practices to developing a community definition of reflective practices. At first, Oliver was worried about deviating from his original inquiry plan. However, the way he adapted his practice in response to student needs was affirmed by the facilitator, who, according to Oliver, encouraged him to

“change [his plan] as what [he] learns changes, and be able to adapt [accordingly]” (Oliver, Interview 3/5, 10.27.22). To Oliver, this affirmation boosted his efficacy as an equity-oriented practitioner by making him feel “hopeful”, “optimistic” and believe “[he] can keep on going with the inquiry” (Oliver, Interview 3/5, 10.27.22).

In addition to using adaptive skills in his classroom, Oliver was presented an opportunity to support others in the community using his adaptive skills. During his conversation with Georgia, Georgia expressed her frustration with her interns’ disengagement with reflective practices. Oliver then used his adaptive skills to turn her frustration into “extra wonderings” (Oliver, Interview 4/5, 11.23.22), by involving her in the process of developing new questions for inquiry. This demonstrated Oliver’s consistent and persistent efforts in overcoming challenges. In face of his and Georgia's challenges, he found adaptive skills to be valuable beyond his individual classroom, and he was able to help his classmate develop similar skills.

To sum up how this mastery moment enhanced his sense of collective efficacy, Oliver first described that the community experienced “a communal frustration” where “we got frustrated in moments of collecting data.” Additionally, Oliver described the community as “nurturing” too because we were “helping and being helpful” (Oliver, Interview 3/5, 10.27.22) when we encountered difficulties. What this moment meant to Oliver was that the community, including himself, was capable of supporting one another in face of challenges and collaboratively developing skills in this process through consistent, purposeful efforts.

Attributing Success to Internal Factors. One final memorable mastery moment to Oliver was his experience paying close attention to student learning for evidence of equitable practices, with assistance from Hope. Goddard et al (2004a) noted that when individuals or a group attribute their success to internal factors, such as their own effort or ability, they are more likely to develop a strong sense of collective efficacy. In the second interview, Oliver referred to his conversation with Hope as a collaborative problem-solving moment that facilitated his

learning of using student data to improve teaching and learning. Oliver attributed the success of learning from student data to Hope. He said,

Hope really helped me because when we wrote in our inquiry journals about one piece of data, she's like "Oliver, you need to write about a piece of data from your student. That's an excellent piece. You can get a lot out of that." I didn't think how important that piece of data was until I thought about it. When I was able to converse with Hope about it, I was like "Oh, wow, she's really right." (Oliver, Interview 3/5, 10.27.22)

Their conversation led Oliver to recognize the significance of a particular piece of student data and its impact on student learning. Because of Hope, Oliver examined his student's reflection closely in his inquiry journal. He described it a success when he realized the connection between his student learning, his practices, and his adaptive skills:

That student opened up to me about how she feels about reading. That was validation of what I'm doing is important, so that made me feel even though this is taking a lot of time, it's time well spent... That's something I would have never known if I didn't, if we didn't use reflection.... I'm also glad that I was paying attention to what my students were saying because... if I wasn't present in the moment, it would have been very easy to skip over the whole part (co-creating the cycle of reflection). I truthfully don't think I would have gotten the response that I received from my student informing me about how she felt about her own reading. (Oliver, Interview 3/5, 10.27.22)

Oliver's recognition of the impact of his practices on student learning is an example of the ways in which mastery moments can enhance an individual's sense of efficacy for being attentive to student data to inform teaching and learning. Specifically, his realization of the role that his classmate played in helping him to see the success of his impact on his students highlights the importance of collective efficacy in promoting equity-oriented practices.

Summary

This subsection explored the role of mastery experiences in shaping the perception of group capability within the inquiry community, as seen through the perspective of Oliver. The themes generated in this analysis indicate that mastery experiences played a crucial role in supporting Oliver to evaluate the complexity of their practice and available resources, assess individual and group competence, experience and overcome challenges, and attribute success to internal factors. These processes seemed to support the participants in the inquiry community in developing a sense of collective efficacy and perceiving the group as capable of improving student learning. The themes emphasize the importance of mastery experiences in shaping Oliver's perception of group capability. The next subsection discusses the role of vicarious experiences as another efficacy-shaping source.

Vicarious Experiences

Vicarious experiences are a potent source that shapes efficacy beliefs, second only to mastery experiences. These experiences occur when a skill or practice is modeled by other educators (Goddard et al., 2004a). Essentially, vicarious experiences are the process of learning by observing other educators or hearing about their achievement (Goddard et al., 2000). When educators learn the success of others, they believe that if others can do it, they too can achieve at least some improvement in performance (Bandura, 1977). However, whether vicarious experiences operate as an efficacy-shaping source depends on factors including (1) similarity: viewing a model alike to them in key ways, (2) reinforcement: recognizing positive outcomes of the observed behaviors, (3) attention: noticing the salient features of the teaching and learning experience, (4) retention: remembering the steps in the execution of the strategies or teaching

approaches, (5) reproduction: replicating the modeled behavior, and (6) motivation: having the will and desire to replicate the strategies (Donohoo & Katz, 2020). Besides learning from the success of educators and organizations that share similar goals, perceived collective efficacy can also be enhanced by observing somewhat dissimilar educators that have achieved highly valued outcomes (Goddard et al., 2004a). Effective vicarious experiences rely on trust and collegiality between educators, as they are made possible by the presence and contributions of others (Goddard et al., 2000; Donohoo & Katz, 2020). In other words, when educators feel safe and valued, they are more likely to contribute to the group and produce vicarious experiences for others (Donohoo & Katz, 2020).

Vicarious experiences in this study were analyzed as a means for better understanding how study participants' experiences with learning vicariously contributed to their collective efficacy. When study participants identified opportunities to learn from each other, they recognized the strengths of other educators, such as their mindsets, practices, approaches, strategies, and impacts. Literature on vicarious experiences related to CTE tell us that this recognition can lead them to perceive the group as having proven capability for enhancing student learning. Conversely, if study participants perceive others struggling in the inquiry community, this recognition could lead to a lower sense of collective efficacy.

To illustrate my analyses of vicarious experiences as an efficacy-shaping source, I present one episode of Eva's experience learning from other educators in the inquiry community, followed by an evaluation of her story related to the role of vicarious learning in the development of collective efficacy.

Episode: Eva

Eva was a university instructor at Kerry Creek University. Her love for her college students was evident in her frequent and explicit expressions in class and during the interviews with me. As she put it, “I love my students, and I just want them to do well” (Eva, Interview 3/5, 10.21.22). Eva held a high expectation of herself and her professional practices, including but not limited to teaching, learning, and sharing. With her fondness for students and her ambitious approach to professional learning, she initially designed “an inquiry project” to study how to incorporate her college students’ rural funds of knowledge into her curriculum. As she began collecting additional data for her inquiry though, she quickly experienced the tension from the burdensome work she had to put in for this inquiry project. The facilitator supported Eva to shift the focus to her current questions about her implementation of Universal Design for Learning, which was intended to increase her college students’ choice and autonomy in their learning. The relief Eva felt from this refined inquiry made her realize that the essence of inquiry was to truly occur as a part of her current practice. While she learned to ground her learning in her own practice, Eva also learned from other educators regarding different approaches to and mindsets towards teaching and learning.

In this inquiry community, as Eva envisioned and concretized her inquiry, she closely collaborated with several educators, which allowed her to stay informed and inspired by their approaches to inquiry. Oliver was one of those who Eva frequently worked with. As mentioned in the previous episode, Oliver, in his inquiry, aimed to facilitate the development of his third-grade students as reflective learners. In a guided discussion, Eva listened to Oliver’s narrative of his inquiry, paying close attention to his use of inquiry with his third-grade students. She analyzed her vicarious learning during the interview:

The way that he is collecting data with his students is just so thoughtful, like caring. I got so excited with him when he was explaining some of the feedback he's getting from students and the concerns that he has about the way he's collecting data.... Just talking to Oliver about the way he's doing his research gave me ideas for how I should be conducting my own. (Eva, Interview 3/5, 10.21.22)

Oliver's use of inquiry as a way to learn with and from his students informed Eva of a possible approach to inquiry that she desired to try. In addition to explaining how he collected data with his students, Oliver also showed the cycle of reflection that he and his students co-created as a result of his inquiry. She externalized her analysis and its implication for her practice:

When he talked about how he asked his third graders to reflect and realize that they didn't know what reflection meant, and so he stopped everything and completely changed his lesson plan, "Okay, let's come up with a community definition of what we think reflection is." I'm like, "why am I not doing this with my (college) students? Why are we not coming up with community definitions of important things we're talking about in the classroom? Why aren't we co-creating stuff?" If he can do that with third graders, why am I not doing that with my college students? (Eva, Interview 5/5, 12.27.22)

Eva was struck by Oliver's approach to prioritizing his students' learning needs over his lesson plans, and by the way he involved students in co-creating definitions of important concepts. Seeing Oliver's success in the classroom evidenced by his students' work, Eva realized that she could apply similar practices and have similar outcomes in her own college classroom.

Besides learning alongside Oliver, Eva also collaborated with Georgia occasionally. She observed how Georgia navigated unexpected reactions from her interns. She interpreted:

Georgia interacts with her interns. She's like, "I tried to do this thing and it really didn't work"... Then, she was like, "Alright, I need to think about this totally differently and approach the students differently." I feel like I learned things about not holding on so

tightly to plans, and being more flexible with changing plans and changing curriculum for student needs (Eva, Interview 5/5, 12.27.22)

Seeing how Georgia made the decision to completely change her approach, Eva learned that being flexible and open to changing her plans and adapting the curricula could also be one of her future responses to change and challenges.

In addition to gaining ideas about different approaches and responses in face of the complexity of teaching, Eva was also informed of different approaches to her professional learning. As mentioned at the beginning of this section, Eva held a high expectation of herself and her work. At the beginning, Eva approached inquiry through developing a big project that was apart from her current practice. With support from the facilitator, Eva shifted her inquiry focus to study Universal Design for Learning, which was a part of her current practice. As she learned to make such a shift, she also observed how other educators approached inquiry. She described,

Most people in our class are not doing anything IRB approved. They're just looking at their teaching. They're looking at their practices. ... I've learned a lot from watching other people just thinking critically about their own teaching for no reason other than wanting to improve it. (Eva, Interview 4/5, 11.29.22)

Observing other classmates, Eva was informed of the value of grounding professional learning in their own teaching practices for continuous improvement. At the end of the semester, when Eva made decisions on how to share her inquiry with others in the seminar, she also observed the approaches her classmates took towards sharing. She said,

I had originally been planning on doing something much more in depth, and it was stressing me out. Seeing the way that they did it. That took a lot of pressure off of me to not do it that way, which was really helpful (Eva, Interview 5/5, 12.27.22)

With such high expectations of herself, Eva used to take a more ambitious approach to professional learning that occasionally led to feelings of overwhelming. As she learned to shift

from the mindset of “inquiry as a project” to “inquiry as stance,” she observed and noticed some sustainable approaches that other educators took towards teaching, learning, and sharing that she considered to be helpful for her ongoing learning and improvement.

Analysis: Role of Vicarious Experiences

Noticing Features of Similar Practices. One vicarious experience that Eva identified as supporting her to recognize the inquiry community’s capability was to notice the salient features of other educators’ inquiry approaches through their storytelling. According to Donohoo & Katz (2020), the extent to which vicarious experiences influence educators’ collective efficacy depends on the similarity of the task, the attention to it, and the educator’s desire to adopt the approach or strategies. In this graduate seminar, the community members had reached the consensus of using inquiry as a learning methodology. Therefore, all the educators had a shared practice of learning to use inquiry to identify opportunities in their own contexts. During the data analysis workshop in the seminar, the educators were guided to select one data collection method, explain the data source and how the piece of data related to the inquiry wondering. As Eva listened to Oliver’s narrative of his inquiry and his learning from it, Eva paid attention to the features of his inquiry approach, which is shown in the comment below:

I’m so fascinated by the care that he takes. He was sharing some of his data collection with us during class. The way that he is collecting data with his students is just so thoughtful, like caring. I got so excited with him when he was explaining some of the feedback he’s getting from students and the concerns that he has about the way he’s collecting data. We were definitely, everybody was getting excited about the work that he’s doing. (Eva, Interview 3/5, 10.21.22)

The guided conversation seemed to facilitate this vicarious experience by enabling Eva and potentially others to notice some “salient features” of Oliver’s inquiry approach, which included collecting data “with students” rather than “from students.” Another similarity was their data collection methods. In Oliver’s inquiry, he designed prompts to guide his third-grade students’ reflective practices; whereas in Eva’s inquiry, she designed survey questions to elicit her college students’ perceptions of the Universal Design of Learning. The way Oliver critically examined whether his prompts elicited genuine student reflections informed Eva to take up the similar issue of critically examining her survey questions. Eva noted:

Just talking to Oliver about the way he’s doing his research gave me ideas for how I should be conducting my own... That made me think a lot about "how am I framing my questions to my students just because Oliver was sharing how he was concerned about this". (Eva, Interview 3/5, 10.21.22)

This experience learning vicariously from Oliver seemed to operate as efficacy-shaping information for Eva, because it inspired Eva and increased her desire to consider taking up the issues Oliver grappled with and ensuring her college students could share their opinions honestly.

With her experience learning vicariously, Eva came to recognize the relationship between mastery experience and vicarious experiences early on in her participation in the inquiry community. She described in the interview:

I think that goes both ways for people a lot in our class. The way that we are doing work impacts the way that other people do work because we're sharing our ideas, and we're sharing our experiences, the things that go well, the things that go poorly, and the things that we're worried about.... So I think that's what I mean by support rather than collaboration because we're just sharing ideas and then getting ideas from each other. (Eva, Interview 3/5, 10.21.22)

The comment above demonstrated that when educators' mastery experiences were supported to be made public, they could be transmitted, turning into precious vicarious experiences for other educators in the community.

What this vicarious learning meant to Eva was with guidance to notice the salient features of the similar practice they engaged in, she came to learn an approach to inquiry which she considered with greater potential to enhance her college students' participation and contribution to the class community. She attributed the inspiration and gain of her knowledge to Oliver who publicized his learning with thoughtfulness to the details.

Seeing Positive Outcomes Despite Differences. Another critical vicarious experience was Eva's experience learning the positive outcomes of different practices. As Bandura (1977) argued, observing successful activities with evident positive consequences leads to greater improvement than witnessing the same performances without evidence. In other words, clear student outcomes and the execution of teaching strategies leading to them are important aspects to observe (Donohoo & Katz, 2020). In the guided conversation, Eva not only heard Oliver's storytelling of the data collection process but also saw the student outcomes that he presented, including the cycle of reflective practices co-created by him and his third-grader students (see Figure 4-1). Eva made connections between what she heard and saw as well as what made her wonder. Recall, she said:

When he talked about how he asked his third graders to reflect and realize that they didn't know what reflection meant, he stopped everything and completely changed his lesson plan: "Okay, let's come up with a community definition of what we think reflection is." I'm like, "why am I not doing this with my (college) students? Why are we not coming up with community definitions of important things we're talking about in the classroom? Why aren't we co-creating stuff?" If he can do that with third graders, why am I not doing that with my college students? (Eva, Interview 5/5, 12.27.22)

The comment above demonstrates that seeing the positive outcomes of Oliver's practices helped Eva to see the value of a different teaching practice, which she had not previously considered in her own context. Eva's vicarious experience supported the argument by Bandura (1977) and Donohoo & Katz (2020) that seeing the positive consequence reinforced the influence of the observed behavior. However, rather than only learning from similar others (Donohoo & Katz, 2020), Eva's vicarious experience supported Goddard et al.'s (2004a) assertion that different practices in a different context could still provide powerful learning opportunities, if the outcomes were presented and perceived highly valued. In some ways, it challenged Eva even more by engaging her in critical reflective practices in her belief of what third graders could do and her expectations toward college students.

This vicarious learning experience seemed to blur Eva's distinction between higher education and K-12. Previously, Eva often referred to Oliver as being "very K-12, so he has a very different perspective than I do" whereas she considered herself "not in K-12, so it's not something I've given a lot of thought to" (Eva, Interview 3/5, 10.21.22). Through seeing the positive student outcomes and the strategies Oliver used, Eva was inspired to learn from practices in different contexts and incorporate them into her context. In doing so, she identified the expertise to be transferable beyond contexts. It seemed that Eva came to perceive the inquiry community as a group with differing expertise that could challenge her thinking, persuading her to learn about contexts and practices that were different from her own but had valuable implications for her own context.

Eva's vicarious learning experience demonstrated the importance of observing positive outcomes of teaching practices and the value of learning from educators with different expertise and contexts.

Cultivating an Open Mindset for Future Challenges. One critical vicarious experience for Eva was witnessing Georgia's shift in mindset when faced with challenges. Initially, Georgia

was frustrated with her interns' lack of engagement with reflective practices, but Eva witnessed Georgia transition into a more flexible and adaptable educator who embraced challenges. Eva analyzed her shift:

Georgia interacts with her interns. She's like, 'I tried to do this thing and it really didn't work'... Then, she was like, 'Alright, I need to think about this totally differently and approach the students differently.' I feel like I learned things about not holding on so tightly to plans, and being more flexible with changing plans and changing curriculum for student needs. (Eva, Interview 5/5, 12.27.22)

Eva's analysis revealed that she perceived shifting to an open-to-learning mindset as a valuable mindset within this inquiry community. Learning alongside Georgia allowed Eva to observe her experiencing, overcoming challenges, and shifting her disposition toward them. Such analysis required long-term observation. While most scholarship focuses on vicarious experiences that provide knowledge of specific teaching approaches or strategies, the type of vicarious experience Eva shared here allowed her to notice a deeper level of teaching, mindset or way of thinking.

For Eva to consider shifting to an open-to-learning mindset, she needed to establish a trusting and collegial relationship with Georgia that allowed for long-term observation. Eva further described what made this vicarious experience possible. She said,

I felt that vulnerability was the thing that was the most helpful, but not just be vulnerable, but be a person who allows other people to be vulnerable. Because for me, what creating an inquiry community was about this semester was about creating this place where everybody felt safe. That doesn't happen unless every person is trying to do that for other people, so you don't get to reap the benefits of it unless you're doing it for everybody else. (Eva, Interview 5/5, 12.27.22)

Eva perceived that creating a safe space for vulnerability was critical for gaining the benefits of learning from others' experiences (Donohoo & Katz, 2020). To create a condition that affords rich vicarious experiences, it requires every person to create a safe environment for others.

Overall, this type of vicarious experience can be a powerful tool for professional learning, as it allows educators to learn not only about specific teaching practices but also the underlying mindset and attitudes that are essential for resilient teaching. By witnessing other educators' shift in disposition towards challenges, educators can gain a deeper understanding of the value of flexibility and open-mindedness in responding to the evolving needs of students.

Cultivating an Open Mindset Toward Sustainable Professional Learning. Another significant vicarious experience for Eva was observing different mindset towards professional learning. In the third interview, when Eva was asked about her perceived change in her professional practice, Eva described her shift in inquiry from a focus apart from her practice (e.g., rural students' knowledge and assets) to a focus that was a part of her practice (UDL and how well it supported her students). She elaborated:

The way I approach inquiry has definitely changed.... I have always thought about practitioner research as a very formal thing.... and the thing I'm going to take with me the most is it doesn't have to be a huge formal IRB approved study... It can just be... I'm going to try a thing in my class, and then I'm going to think critically about how it goes, and that can be practitioner research. It can be informal, and you can apply these formal things that we're learning about in an informal way to learn more about our teaching and about our students' learning. (Eva, Interview 4/5, 11.29.22)

In addition to the guidance of the facilitator, Eva attributed the success of this change to other educators' modeling in the inquiry community. She recalled,

Most people in our class are not doing anything IRB approved. They're just looking at their teaching. They're looking at their practices. ... I've learned a lot from watching

other people just thinking critically about their own teaching for no reason other than wanting to improve it. (Eva, Interview 4/5, 11.29.22)

Her analysis of other educators' approaches led her to recognize the value of inquiry grounded in the context of teaching. Through seeing other's modeling, Eva came to believe that job-embedded professional learning was purposeful and valuable. As she looked ahead to her dissertation as a university faculty member and a part-time PhD student, she had begun considering the type of dissertation that would be meaningful and influential:

My dissertation is going to be about my own practice.... It has to fit in with the way I work, with my job. Otherwise, I'm not going to be able to finish ever. There's no way that I can do a dissertation on something that's not a part of what I already do. So I think that what that helps me to know now is that this process of learning more about inquiry is a process which is not just purposeful for my practice, but also purposeful for my research. (Eva, Interview 5/5, 12.27.22).

In addition to finding a more sustainable approach to teaching, learning, or researching with the multiple roles she had, Eva also observed and learned from how other educators shared. She described:

I had originally been planning on doing something much more in depth, and it was stressing me out. Seeing the way that they did it. That took a lot of pressure off of me to not do it that way, which was really helpful. (Eva, Interview 5/5, 12.27.22)

To sum up how this vicarious experience enhanced her sense of collective efficacy, Eva was able to learn from other educators a more sustainable approach to professional practices, which encompasses teaching, learning, researching, and sharing. What this vicarious experience meant to Eva was that the community was capable of offering her approaches to professional learning that would help her to sustain learning in the different roles she had.

Summary

This subsection sought to understand how vicarious experiences played out in this inquiry community through Eva's perspective. The themes generated in this analysis indicate that vicarious experiences played a critical role in supporting Eva in the following ways: in recognizing the salient features of similar practices, in identifying positive outcomes despite differences, in developing an open-to-learning mindset toward challenges, and in cultivating a sustainable mindset toward professional learning. These processes of vicarious experiences seemed to support Eva in developing a sense of collective efficacy, viewing this inquiry community as capable of achieving the goal of improving student learning. Moreover, vicarious experiences went beyond learning about others' techniques to also learning core values. The findings emphasize the significant role of vicarious experiences in shaping Eva's understanding of collective efficacy within the inquiry community. In the next subsection, I will address the role of social persuasion as an efficacy-enhancing source.

Social Persuasion

Social persuasion plays a vital role in developing collective efficacy because it leverages verbal contributions from others to strengthen individuals' beliefs in their own abilities or in a group's capacity to achieve a desired goal (Tschannen-Moran & McMaster, 2009). Social persuasion helps educators overcome self-doubt and obstacles they may face in achieving their goals by persuading them that they have what they need to succeed (Bandura, 1997). Such act of persuading can nurture one's perseverance and guide educators towards problem solving (Goddard et al., 2000). It also contributes to the ongoing socialization that group participants interdependently create and experience (Goddard et al., 2004a). While social persuasion alone has

limited power and depends on the credibility of the persuader, when coupled with mastery experiences and vicarious experiences, it can enhance collective efficacy (Goddard et al., 2004a). Beauchamp et al. (2014) found that many educators perceive social persuasion, such as feedback from colleagues, as a powerful influence on collective efficacy.

According to Donohoo and Katz (2020), social persuasion that is effective in enhancing efficacy is deliberate, ongoing, and focused on emotions in order to convince teams to take responsible risks for real improvement. These authors have identified three theories that can be used to inform social interactions that are persuasive: cognitive dissonance, social judgment theory, and the narrative paradigm. Cognitive dissonance involves highlighting the gap between educators' beliefs and their actions. By creating a sense of discomfort, this interaction can be a powerful motivator for change. However, whether educators will be receptive to this social persuasion as an efficacy-enhancing source depends on the issue's importance and the degree of discomfort they feel. Social judgment theory posits that surfacing preexisting attitudes can be a starting point for potential persuaders, which can provide clues about how to approach a persuasive effort. Finally, the narrative paradigm uses compelling narratives to convince educators of the benefits of a particular action. Donohoo and Katz (2020) asserted that social persuasion is an effective tool because it appeals to educators' feelings and emotions.

In the present study, participants' experiences with social persuasion were analyzed as a way to understand how social persuasion contributed to their collective efficacy. Study participants who received feedback, support, or resources that helped them to recognize or reach their success were more likely to believe in the community's collective ability to collaborate towards the common mission.

To illustrate the role of social persuasion in developing collective efficacy, I present one episode of Georgia's experience with receiving feedback, resources, or support from other

educators in the inquiry community, followed by an evaluation of her story related to the role of social persuasion in her development of collective efficacy.

Episode: Georgia

Georgia was an environmental community educator. As the only educator in the inquiry community who was teaching in a non-formal setting, Georgia took time to explain her teaching context to other community members. Initially she perceived that other educators felt disconnected from her context and were struggling to support Georgia in exploring her direction for inquiry. These perceptions led Georgia to doubt whether she would ever develop a solid inquiry question that encapsulated her dilemma and curiosity. There was one moment that someone asked one question that made the focus shift in ways that finally felt right to Georgia. Recalling that “ah-ha” moment, Georgia remembered it was the inquiry community’s facilitator who acknowledged such a moment by saying to her “It seems like you’re more excited. This is more like what you want to focus on!” (Georgia, Interview 2/5, 10.10.22). Georgia described that having the facilitator explicitly point out her identified passion made her feel more certain. In addition to feeling certain about her own inquiry, Georgia also felt engaging inquiry was valuable. She contributed that to the affirmation from others: “It feels like what we’re doing is valuable. In part, I think that comes from moments where someone or the facilitator affirms that, ‘This is really well-aligned with the work that you’re doing’” (Georgia, Interview 2/5, 10.10.22).

In her inquiry, Georgia wanted to support the interns she worked with to develop into reflective educators. The first attempt Georgia made was to incorporate surveys as one approach to facilitate the interns’ reflection. However, as mentioned in Oliver’s episode, Georgia felt frustrated by the low number of survey responses she received from the interns. In the data collection workshop, she sat quietly to journal about the recent data she collected. Hope came

over and asked her, “How’s your wondering going?” To Georgia, this was a critical social interaction for her. She elaborated,

I felt seen or understood when I was having those conversations with the facilitator and Hope. Just having them affirm that what I was wondering was challenging or what I was working on was hard.... It was energizing, and made me feel a little bit more hopeful that someone else saw what I was struggling with. (Georgia, Interview 3/5, 10.26.22)

With the encouragement, Georgia continued to try different approaches to support the interns’ reflective practices. Besides providing reflective practices through surveys, Georgia decided to observe the interns’ teaching and provided feedback to support their reflection on action. As the data analysis workshops continued for two to three weeks, Georgia had ongoing dialogue with the community members regarding the challenges and tensions she was facing in her inquiry. In one workshop, she formed a group with Oliver and me. She shared her hesitation of providing feedback for the interns after observation. With the goal of supporting interns to develop into reflective educators, she observed the interns teach and took notes of areas for improvement. However, she didn’t feel comfortable sharing her notes directly with the interns, doubting if this would really support their reflective practices or instead take away their opportunities to reflect. Hearing Georgia’s uncertainty over that approach to providing feedback, I recognized her need for an alternative approach to providing feedback. Therefore, I shared with her the concept of cognitive coaching, in which coaches’ feedback was used in a way to guide reflection through questioning rather than leading reflection. Georgia analyzed:

When you shared cognitive coaching and someone else shared that Artemis (one member of the inquiry community) does real-time coaching. I was, “Oh, these are things that I haven’t tried before.” As I learned more about them, I felt they were really things that fit well with myself, personally and professionally. They felt like methods that I could really try and see myself using. So I was thinking a lot about how that might look and how I can

introduce that. [I was] feeling thoughtful and energized. (Georgia, Interview 4/5, 11.16.22)

The resources that the community members provided also serve to shift her beliefs of what the interns were capable of doing and what she could do. She analyzed how the resourced impacted her thinking about student learning:

I think it's influencing the way I'm thinking about the potential for student learning, because I was in a place where I was feeling like, "I don't know if the interns can or how much growth they're actually capable of, and if this traditional feedback process or observation process is going to work for them." So to learn about this different method, I feel more hopeful about it. I think it made me feel "Okay, I think that this could work for them and they could learn from this." (Georgia, Interview 4/5, 11.16.22)

As Georgia reflected on the shift in her thinking, she attributed it to the resources that other educators provided her. She said, "When I get tools from people, it allows me to move forward in my analysis or think beyond my analysis" (Georgia, Interview 4/5, 11.16.22).

This collaborative process of data analysis also enabled Georgia to support other educators in their analysis. When Georgia recalled the process of how she supported others, she said,

I feel like the person who I've maybe supported is Oliver. I think it comes to mind because he's really good about being vocal, recognizing that you helped him. He's like, "Thank you. That helped me so much." I think that helps me to recognize that too. There have been a couple of times where I either asked him a question or gave him an idea after he asked a question. He's been, "oh, yeah, that's really helpful!" (Georgia, Interview 4/5, 11.16.22)

Georgia described that Oliver's acknowledgement of her contribution helped her to recognize her capability to offer support.

As a member of this inquiry community, Georgia felt supported throughout the process, especially when she presented her learning. She recalled the support she received from the facilitator during and after her sharing. She noted:

While I was presenting, I felt a lot of support and affirmation from our inquiry community. There was a lot of support during it and afterwards, too. After my presentation, Rachel's comment about, or her question about whether I had made connections between reflection or my inquiry and nature journaling was a big aha. "No, I haven't thought about that at all." It got me thinking about some potential action steps. It was affirming... I had been pretty critical of myself and my potential to facilitate reflection with the interns, so to hear that idea, maybe there was more of a bridge there than I had thought about. It was really helpful. (Georgia, Interview 5/5, 12.8.22)

Aside from the facilitator's feedback, Georgia also recalled feedback from other educators. She synthesized the feedback she received and its impact on her:

I think validation, just like affirming that what I had been working on was important and meaningful. I heard many people say it was brave of me to share, or to go through this process, or that I was vulnerable. I hadn't considered those things for myself. Also [the facilitator's] question or responses made me think about maybe categorizing my inquiry in different ways. So I guess, it gave me a new perspective on myself and on my inquiry that I hadn't identified for myself, but that I felt good about identifying with. (Georgia, Interview 5/5, 12.8.22)

Reflecting on the last two sessions of the seminar, Georgia described them as "a big celebration" (Georgia, Interview 5/5, 12.8.22) filled with "excitement, and connection, and commitment that [she] felt with our community" (Georgia, Interview 5/5, 12.8.22).

Analysis: Role of Social Persuasion

Highlighting Individual and Group Successes. One social experience that persuaded Georgia of the inquiry community's capability was to recognize her and the community's success in defining a focus of inquiry. According to Goddard et al. (2004a), when social persuasion is combined with mastery experiences, it can highlight individual and group successes, ultimately strengthening a stronger sense of collective efficacy. Initially, Georgia struggled to define her inquiry focus, doubting: "everything that I [was] saying to these people [was] completely disconnected, and I don't know how I'm ever going to get to a solid wondering" (Georgia, Interview 2/5, 10.10.22). However, with the collaborative support of the community, a critical question or a suggestion from one community member led to a moment of insight for Georgia, allowing her to say: "We're here! This is it. It feels right!" (Georgia, Interview 2/5, 10.10.22). Despite this mastery experience of defining her inquiry focus with the support from others, Georgia did not fully understand what this "ah-ha" moment meant to her until the facilitator explicitly communicated it to her, saying, as was previously mentioned, "It seems like you're more excited. This is more like what you want to focus on!" (Georgia, Interview 2/5, 10.10.22). This acknowledgement was crucial for Georgia in recognizing the success of defining her inquiry focus.

In addition to this success, Georgia also realized the value of her inquiry when other educators made the connection between her inquiry and her goals. She identified the feeling of "valuable", and elaborated on how she came to believe in the value of her inquiry:

It feels like what we're doing is valuable. In part, I think that comes from moments where someone or the facilitator affirms that, "This is really well-aligned with the work that you're doing. It's a part of what you're doing outside of the class. It's all very connected,

so it's not this isolated thing that we're doing. It's a part of our work and our own individual missions and purposes. (Georgia, Interview 2/5, 10.10.22)

Georgia perceived that this validation helped her to see the inquiry as valuable, as it was connected to her work outside of class.

For Georgia to recognize the success of defining her focus for inquiry and the success of grounding her learning in her current practice, she needed others to point that out for her. What this social persuasion meant to Georgia was that she came to perceive the inquiry community with the capability of making the success apparent to her so that she could proceed her inquiry more confidently, knowing her "why."

This social persuasion supported Goddard et al. (2004a), in that when social persuasion is coupled with mastery experience, it can enhance a stronger sense of collective efficacy. In some respect, social persuasion seemed to enable mastery experience to capitalize on its efficacy-shaping potential. In other words, social persuasion to mastery and vicarious experience is like yeast to bread. It added volume to direct and vicarious experiences, activating and extending their sphere of influence on collective efficacy.

Recognizing and Overcoming Obstacles. One social experience that convinced Georgia of the inquiry community's capability was to recognize her obstacles and support her in overcoming them. Bandura (1997) noted that social persuasion can serve to help individuals to overcome obstacles by persuading they have what they need to succeed. Goddard et al. (2004a) also noted that the effectiveness of social persuasion is dependent on the persuader's credibility. During the data collection phase, community members had two weeks for fieldwork, which led to independent data collection. However, Georgia found the process of data collection frustrating and felt "distant" without the whole group's gathering. It seemed that Georgia's need for connection was not met, especially in facing obstacles. When the community convened for reflection on the fieldwork, Hope approached Georgia, expressing concern by asking "how's your

wondering going?”. Georgia perceived that interaction as critical for her, as she analyzed such moment:

I felt seen or understood when I was having those conversations with the facilitator and Hope. Just having them affirm what I was wondering was challenging or what I was working on was hard.... It was energizing and made me feel a little bit more hopeful that someone else saw what I was struggling with. (Georgia, Interview 3/5, 10.26.22)

It seemed that Hope’s approach persuaded Eva that she had what she needed to overcome obstacles, which in her case was the need for being seen and understood. Georgia further evaluated why the way Hope showed concern mattered to her. She stated:

I think we had some established trust... So I just felt pretty comfortable and relieved to be able to verbally process some of what I had been internally processing with myself. To do that with her was really helpful. (Georgia, Interview 3/5, 10.26.22)

Georgia’s evaluation revealed that established trust was key for her to honestly express her struggles, knowing that the critical friend would empathetically listen. This is in line with Goddard et al.’s (2004a) assertion that the credibility of the persuader matters in social persuasion. By feeding in Georgia’s need for connection, Hope’s approach persuaded Georgia that her need for connection was honored and could be met in this inquiry community.

For Georgia to overcome obstacles, she needed other educators’ support through offering care, concern, and space to share. This social support was critical to her sense of belonging, especially when facing obstacles, and it seemed to be more influential when coming from educators with whom she had established trust. What this social persuasion meant to Georgia was she came to recognize the capability of the inquiry community to meet her needs for connection and empathy.

Experiencing Dissonance and Evaluating Persuasive Messages. Another social experience that persuaded Georgia of the inquiry community’s capability was to evaluate

persuasive messages provided by other educators. In Georgia's inquiry, she aimed to develop the interns into reflective educators, and one approach she decided to try was to observe their teaching and provide feedback. However, as Georgia took notes during observation, she was hesitant to provide feedback to the interns after their teaching, partially because the action of giving feedback through a traditional evaluation process conflicted with her goal of developing the interns into reflective educators with learners' ownership. Experiencing the gap between her belief and planned action, Georgia externalized this cognitive dissonance in the small group discussion with Oliver and me (Field Notes, 11.08.22). Learning that Georgia was in search of an alternative approach, I introduced the concept of cognitive coaching (Costa & Garmston, 2018) as the non-judgmental mediation of thinking that aims to support self-directedness in others. When Georgia heard the new idea of facilitating reflection through coaching, she evaluated the alignment of this given tool and her own belief. The comment below demonstrated her judgment of this persuasive message:

I felt they were really things that fit well with myself, personally and professionally. They felt like methods that I could really try and see myself using. So I was thinking a lot about how that might look and how I can introduce that. [I was] feeling thoughtful and energized. (Georgia, Interview 4/5, 11.16.22)

Georgia's evaluation led her to recognize the alignment of the given tool and her own belief, which persuaded her to accept this new given tool. Her acceptance of such persuasive messages was evident by the shift in her thinking of her students. She confessed:

I think it's influencing the way I'm thinking about the potential for student learning, because I was in a place where I was feeling like, "I don't know if the interns can or how much growth they're actually capable of, and if this traditional feedback process or observation process is going to work for them." And so then to learn about this different

method, I feel more hopeful about it. I think it made me feel “Okay. I think that this could work for them and they could learn from this.” (Georgia, Interview 4/5, 11.16.22)

The persuasive message not only provided her a different view of the feedback process, but also surfaced her pre-existing deficit thinking of student learning. This new tool gave her a new perspective, helping her to believe in her students’ capability to succeed.

For Georgia to recognize her pre-existing belief and assumption, she needed to receive persuasive messages that identify the gap between her belief and planned action. What this social persuasion meant to Georgia was she was persuaded by the inquiry community that her interns could succeed through a different learning process and that she could have the resources that she might need to support the interns to succeed. It seemed that Georgia perceived this community of educators as a group with capability to recognize the cognitive dissonance and provide the resources to support the alignment of her belief and her practices.

Acknowledging Contributions to Create Interdependence. One memorable experience that persuaded Georgia of the inquiry community’s capability was to socialize intentionally to create interdependence. In the second interview, when Georgia was asked whom she had supported in the inquiry engagement, Georgia initially responded: “I don't really feel like I've supported anyone in data collection so far” (Georgia, Interview 3/5, 10.26.22). After being prompted, Georgia confessed: “I’m feeling confused and jumbled about [my inquiry]. I’m thinking a lot about that and not necessarily feeling able to give my energy to other people to help them sort through theirs” (Georgia, Interview 3/5, 10.26.22). The comment demonstrated that Georgia did not perceive herself capable of offering support to others at that moment.

In the third interview, when the same question was asked regarding the support she offered for others, Georgia immediately responded: “I feel like the person who I've maybe supported is Oliver.” (Georgia, Interview 4/5, 11.16.22). She attributed such recognition to Oliver’s explicit communication. She analyzed:

I think it comes to mind because he's really good about being vocal about recognizing that you helped him. He's like, "Thank you. That helped me so much". So I think that helps me to recognize that too. There have been a couple of times where I either asked him a question or gave him an idea after he asked a question. And he's been like, "oh, yeah, that's really helpful." (Georgia, Interview 4/5, 11.16.22)

Georgia's analysis beautifully revealed the role of social persuasion in enhancing her perception of the inquiry community's capability, which includes herself as a community member. Specifically, when Oliver recognized and explicitly acknowledged Georgia for being a positive contributor of a community, she was persuaded that she had the competence and capability to support other educators' learning.

What this social persuasion meant to Georgia was that it allowed her to see herself as someone who could offer support and whom other educators rely on. Georgia seemed to perceive the inquiry community, which included herself, as a community of educators who had the capability to collaborate interdependently. This social persuasion served as a powerful facilitator of collaboration, which in turn strengthened the interaction that group participants interdependently create and experience.

Summary

This subsection sought to understand how social persuasion played out in this inquiry community through the perspective of Georgia. The themes generated in this unit of analysis indicated that social persuasion played a vital role in supporting Georgia in recognizing individual and group success, meet her needs for connection, experience dissonance and judge persuasive messages, and acknowledge contributions to create interdependence. These processes of social persuasion seemed to support Georgia in developing a sense of collective efficacy,

viewing this inquiry as capable of providing educators the instrumental, emotional, and social support required to improve student learning. These findings emphasize the significant role of social persuasion in enhancing Georgia's understanding of collective efficacy within the inquiry community. In the final subsection, the role of emotional states as an efficacy-enhancing source is discussed.

Emotional States

Organizations and communities respond to stress, pressure, successes, and challenges in a similar way to individuals (Goddard et al., 2004a). Communities that possess strong collective efficacy are better equipped to handle stress and crises, allowing them to function without experiencing serious consequences (Goddard et al., 2004a). Such organizations learn to rise to the challenge when confronted with disruptive forces. Conversely, organizations that have lower collective efficacy are more prone to react dysfunctionally, which increases the likelihood of failure. Emotional states may influence how organizations interpret and react to the challenges they face. Despite this, little research has been conducted on the impact of emotional states on the organizations' collective efficacy (Goddard et al. 2004a). Research on the impact of emotional states has found little evidence of emotional states being a source of collective efficacy (Loughland & Nguyen, 2020)

In this study, participants' emotional states were analyzed as a way to understand how emotional states contributed to their collective efficacy. Study participants' experienced emotions in response to stress, successes, and challenges could inform their perception of the inquiry community's collective ability to improve the learning of each other and their students.

To illustrate the role of emotional states in developing collective efficacy, I present one episode of Hope's perceived organizational emotions, followed by an evaluation of her story related to the role of emotional states in her development of collective efficacy.

Episode: Hope

Hope was a former elementary school teacher and a current first-year doctoral student. Her strength of harnessing emotions to assist her professional learning and judgment was evident early on. In the third week, the community members were guided to share their joy, commitment, and dilemmas in their work with a partner, and then listen to the partner retell the story to the whole group. That created an opportunity for Hope to narrate to Georgia the loss of her teacher identity as she left elementary teaching for graduate school. The way Georgia succinctly summarized her story with the tagline "I was a sixth-grade teacher, but not anymore" (Hope, Interview 2/5, 10.4.22) struck Hope, triggering strong emotions. As Hope unpacked that narrative experience, she described with sobs:

I was listening to her tell my story. I got tears in my eyes. I felt the remorse. I felt the loss within this identity and frustration and distant. It wasn't until I was hearing somebody else tell my story that I finally realized the emotion connected with it. And it was extremely vulnerable for me and very eye opening for me to realize the extent of the difficulty that it was.... So that opened my eyes to how much sadness I was feeling with this identity work and with this wrestle that I'm experiencing (Hope, Interview 2/5, 10.4.22)

This recognition of her own emotional responses helped Hope to make her professional judgment on what her inquiry needed to be. She noted,

When I felt how strong those emotions actually were, that was when it confirmed that this is definitely something that I need to look into because there's a lot more to it than I realized, and there's a lot more that I need to be able to get from this in order to move on and heal almost. (Hope, Interview 2/5, 10.4.22)

Hope's emotional state motivated her to investigate her transition from being a teacher to becoming a teacher educator. While Hope harnessed emotions to make decisions for her professional learning, she was also attentive to the emotions experienced by the community members by using emotions as an analytical lens to understand others' learning.

In this inquiry community, Hope experienced and observed how the community members collaboratively responded to the challenge of defining foci for inquiry and concretizing the inquiry. She described the community feeling "bewildered" (Hope, Interview 2/5, 10.4.22). This bewilderment was related to the community's "exploration with what's available to us and what we're going to be learning," and Hope highlighted that such bewilderment was "motivating" and "there's energy to that" (Hope, Interview 2/5, 10.4.22). In the exploration of inquiry foci, Hope also perceived the community feeling "creative". She elaborated,

There was a lot of creativity as we're putting three brains together to look at [the inquiry wonderings]. We're all coming from different angles and [with] different perspectives. So the end result is, I'd say, multi-dimensional, and that it's reflecting not one person's view, but it's a more well-rounded thing. So I would say that's a creative process and that we're bringing in other ways of thinking about it and creative solutions. (Hope, Interview 2/5, 10.4.22)

Besides "bewildered" and "creative," Hope also identified "optimistic" as the community's shared feeling. She stated:

This whole process of inquiry is with the intention to improve your own practice. Why do you want to do that? Because you want to be the best teacher you can and you want the

experience of your students to be the best possible. So the whole thing is focused around self improvement, celebrations, and trying to find ways that help bring the joy of learning into the classroom. So I think... the entire experience is sprinkled with celebrations. It's built into this whole wondering development process, because it's all very optimistic. I wouldn't be doing it if we weren't optimistic and if we didn't think that we could improve and that we could do something to make it better for our students. (Hope, Interview 2/5, 10.4.22)

Hope reported that practitioner inquiry, the learning methodology used in this community, was itself a mechanism for enhancing efficacy. Through the three identified emotions (bewildered, creative, optimistic), Hope seemed to perceive that the community members did acknowledge the complexity of the inquiry, but also reached the success in finding a creative approach to generate collective knowledge and maintaining an optimistic attitude towards collaboration so as to support each educator to define their inquiry foci.

To inform their inquiry, the educators in this community collected a wide range of data including literature, surveys, student feedback, inquiry journals, and interviews with colleagues. As they analyzed the varied data, Hope observed that although the community felt “frustrated”, it was “a positive form of frustrated for working through [the] messiness” (Hope, Interview 3/5, 10.26.22). In response to the challenges they faced, Hope noted that the community felt the process was “worthwhile.” She analyzed what enabled this community to persevere:

I definitely saw multiple people who [were] working through and making sense of the messiness and how hard it is. It [was] not going the way they planned but I think through the social connections and interactions that we have, we brought out worthwhile, [not only] individual worth but also worthwhile projects regarding what they're doing. (Hope, Interview 3/5, 10.26.22)

Hope highlighted that it was the social connections and interactions that helped the community continue even in the face of difficulty, and to see the value of putting in effort and time. By reporting both feelings of frustration and worthwhileness, Hope perceived that the community not only embraced the discomfort in learning, but also recognized the role they played in supporting each other and their shared goal of improving student learning.

In the final two sessions of the seminar, the educators were encouraged to present their learning from the semester with the whole community. Using all the positive words, Hope described the community as filled with feelings of content, excited, proud, hopeful, optimistic, and empowering (Hope, Interview 5/5, 12.7.22). She identified that the educators felt content and at peace with their inquiries:

Everybody in their inquiry, none of them were resolved, but everybody got to a point where to some degree they're able to make peace with the tensions and the messiness that they were experiencing a month and a half ago. So content in that was like reaching this place of feeling at peace with part of it, and a lot of times it was with themselves. (Hope, Interview 5/5, 12.7.22)

Hope believed that for the educators to feel content with their professional learning, “belonging” played a key role in enabling them to “make peace with their inquiry and with their questions” (Hope, Interview 5/5, 12.7.22).

Hope also perceived that the educators felt excited and proud for each other. She described:

The fact that we had been together for 15 weeks and seen many evolutions in other people's inquiries and in themselves, made for the celebrations. Without those shared experiences, we wouldn't have been excited about other people's inquiries. I was excited when people shared it. I was excited and proud of them, not because I care about what they were actually doing, but because I care about them and because I know that what

they were doing was meaningful to them. The result is for them to be a better person and better in their job and better in their school. So I think that it was so celebratory because we care about humans, because we belong and we're happy for them. They're celebrating so I'm celebrating. They're happy with how it turned out. I'm happy with how it turned out. So that's why I think it was very shared emotions because of the shared history and the community. We were excited for each other and happy for each other. (Hope, Interview 5/5, 12.7.22)

In addition to feeling excitement and pride for each other, Hope also described the educators feeling hopeful, optimistic, and empowered after hearing everyone share their inquiries. Hope provided her own experience to illustrate what she meant by optimistic and hopeful:

With the action plan, I mostly was like, "I'm not sure what to do for this" but then yesterday "phew! the light came through!" I [experienced] surprised, optimistic, and hopeful. Straddling that line is exactly where I am with the action plan. I don't think I would have experienced that if it wasn't riding on the coattails of the celebrations and the empowerment that we felt as a community from our inquiries. (Hope, Interview 5/5, 12.7.22)

Hope felt that hearing everyone's inquiries was inspiring in ways that made her feel hopeful and optimistic for her future actions. She also pointed out that when the educators managed to see the learning journey ahead, they felt empowered. Hope elaborated,

The full realization that it really is just the beginning for all of us. This growth, this inquiry, and this ongoing, meaningful learning is going to continue, and that's empowering for me, and I think it's empowering for all of us as educators and as adult learners. (Hope, Interview 5/5, 12.7.22)

Analysis: Role of Emotional States

Amplifying Motivations Through Surfacing Feelings. Evidence of emotional states being a source of collective efficacy can be found Hope's feelings of being moved by a narrative. According to Donohoo & Katz (2020), a good narrative can persuade educators into engaging in a particular action, and it often works to enhance efficacy when appealing to educators' feelings and emotions.

In Hope's episode, she listened to Georgia retell her story of experiencing the loss of her teacher identity in her becoming as a teacher educator. In the interview, Hope clearly recalled Georgia's succinct narrative of her experience: "I was a sixth-grade teacher, but not anymore" (Hope, Interview 2/5, 10.4.22). Hope confessed that "to hear the poignancy of what came out in [nine] words, [she] felt the remorse and the loss of not actively practicing that [teacher] identity anymore" (Hope, Interview 2/5, 10.4.22).

This experience of feeling moved by a narrative persuaded Hope to locate her focus of inquiry around her identity work. She described how she harnessed the feelings triggered by the narrative to assist her decision making: "When I felt how strong those emotions actually were, it confirmed that this is definitely something that I need to look into because there's a lot more to it than I realized" (Hope, Interview 2/5, 10.4.22). Hope attributed the success of defining her inquiry focus to Georgia's genuine narrative. It seemed that the emotions around being moved amplified her existing motivation of studying her identities in transition. Knowing that her inquiry addressed her dilemma, Hope identified feeling "stimulated" and "optimistic". She stated, "I know that I'll come out of this wondering, understanding myself better within my new roles as a teacher and moving forward teaching in a university setting, so I feel stimulated and optimistic" (Hope, Interview 2/5, 10.4.22).

For Hope to locate a meaningful inquiry, she needed to feel moved, to experience strong feelings that she used to suppress so that she could confirm her need for further learning. What Hope's emotional states meant to her was that she recognized the potential of her inquiry to bring clarity to her identity in transition, from a teacher to a teacher educator. She perceived the inquiry community with the capability to create an environment for her to harness emotions to explore her dilemma vulnerably and deeply enough so that she could locate an inquiry that allowed her to learn meaningfully.

Responding Challenges with Optimism and Creativity. More evidence supporting the notion that emotional states contribute to collective efficacy is found in Hope's perception of shared feelings among the educators when faced with challenges, such as optimism, creativity, and worthwhileness. As illustrated in Hope's episode, she acknowledged the complexity of the task, noting that the community felt "bewildered" (Hope, Interview 2/5, 10.4.22) in defining a focus for inquiry and "frustrated" (Hope, Interview 3/5, 10.26.22) when attempting to make sense of diverse data. In face of these challenges, Hope sensed that the community responded with creativity, optimism, and worthwhileness. Hope emphasized the community's shared feeling of optimism in taking up the challenges. She explained: "I wouldn't be doing it if we weren't optimistic and if we didn't think that we could improve and that we could do something to make it better for our students" (Hope, Interview 2/5, 10.4.22). Hope perceived that understanding the ultimate goal of inquiry, which was self-improvement and enhanced student learning, was critical. It allowed the community to persevere and sustain optimism through envisioning positive outcomes awaiting them.

In addition to optimism, Hope perceived that the community responded to challenges with creativity. She elaborated on the shared feeling of creativity: "putting three brains together...so the end result is... multi-dimensional" (Hope, Interview 2/5, 10.4.22). She described the problem-solving process as a collaborative, creative effort where multiple perspectives and

ideas were brought together. This recognition of creativity was tied to an awareness of each educators' unique knowledge and their willingness to provide intellectual support. As Hope perceived the community feeling creative, it seemed that she came to view the inquiry community as a group with capability to not only offer diverse perspectives but genuinely including and considering the different voices to generate innovative solutions.

Hope also clearly attributed the community's capability to navigate challenges to the collaboration, as she stated, "I think through the social connections and interactions that we have, we brought out worthwhile, [not only] individual worth but also worthwhile projects regarding what [we were] doing" (Hope, Interview 3/5, 10.26.22).

What these emotional states meant to Hope was that she came to recognize the community's capacity to rise to the challenges by trusting the inquiry process, relying on each other's expertise, and trusting oneself. It seemed that these emotional states further enhanced collective efficacy by fostering a shared commitment to improving the teaching and learning of one another.

Belonging to Persevere. Additional evidence for emotional states being a source of collective efficacy was Hope's perception of the educators' shared sense of belonging and content in their ongoing collaborative learning. Hope's intentional observation of the community was evident in the interviews, as she shared, "I was just trying to analyze the situation" and "trying to see how it was popping up in this space" (Hope, Interview 5/5, 12.7.22). Through close observation, Hope noticed that the educators gradually reached an emotional state of peace. She explained her observation further: "... none of them were resolved, but everybody got to a point where... they're able to make peace with the tensions and the messiness that they were experiencing..." (Hope, Interview 5/5, 12.7.22).

Hope attributed the educators' ability to embrace tensions and uncertainty in teaching and learning to their success in finding their identities within the community. She further pointed out

the role of belonging in that process, stating: “You felt recognized and validated as teachers. You felt that sense of belonging, and finally that helped you move forward.” She expanded on this, that it was “[Not] just belonging in the community, but also belonging [in] feeling your identity belongs to you...” (Hope, Interview 5/5, 12.7.22). Hope provided an example of her observation of Val (one member of the inquiry community), explaining, “She felt she belonged in our inquiry community and that helped her feel more of... capable to do her job in her professional setting” (Hope, Interview 5/5, 12.7.22).

Recognizing how these emotional states affected the educators, Hope compared belonging in inquiry engagement to the “lubricant” of a vehicle. Hope stressed the necessity of belonging: “People can't properly function until they feel they belong [in the community], and then their identity is recognized and validated and valued.... The effective inquiries were able to happen once people felt at peace and came to terms with their positionality” (Hope, Interview 5/5, 12.7.22).

When asked about how to nurture that sense of belonging, Hope noted the power of humility as she highlighted the role of Oliver. She explained:

Oliver was the glue of the class because he said, "You guys are so smart. Will you help me? I need help." He was willing to allow each other, allow everybody to support him in different ways in his inquiry journey, so I think that his humility helped everybody open up more.... Humility is a thing that helps foster belonging, because we just want to be able to fit in and feel we're okay. When people are more humble, they're more willing to allow for spaces to be adjusted for other people to belong. (Hope, Interview 5/5, 12.7.22)

Hope’s recognition of the educators’ shared sense of belonging and contentment showcased the development of collective efficacy. According to Hope, for the educators to continue their professional learning through inquiry, they needed to feel a sense of belonging, which was made possible through the process of being recognized and valued for who they were. What these

emotional states meant to Hope was that she came to view the inquiry community as a group of educators who could create spaces for each other to harness their knowledge and skills, enabling them to feel valued, needed, and a sense of belonging.

Celebrating Success for Continuous Learning. The shared feelings of empowerment and hope reported by Hope were another unique piece of evidence for emotional states being a source of collective efficacy. Goddard et al. (2004a) noted that the organizations or communities' emotional response to success can lead to an enhanced collective efficacy. As part of the inquiry process, the educators were encouraged to develop plans for continuing their inquiry beyond the seminar. Initially, Hope admitted feeling uncertain about her action plan, stating "I'm not sure what to do for this!" (Hope, Interview 5/5, 12.7.22). However, as she listened to others share their inquiries and observed the educators' reaction, she experienced a breakthrough in her thinking. Reflecting on this experience, she said,

Yesterday, "Phew! The light came through!" I [experienced] surprised, optimistic, and hopeful. Straddling that line is exactly where I am with the action plan. I don't think I would have experienced that if it wasn't riding on the coattails of the celebrations and the empowerment that we felt as a community from our inquiries. (Hope, Interview 5/5, 12.7.22)

Hope perceived that the community responded to their success in learning with excitement, celebrations, and empowerment, and she described that these emotional states motivated her and inspired her to formulate concrete future plans. For Hope to feel hopeful about taking future actions, she required motivation and inspiration, which she believed was made possible through the educators' celebration of each other's achievement. These emotional states mattered to Hope because she came to view the inquiry community as a group of educators who were capable of celebrating one another's success and empowering each other to commit to ongoing learning.

Summary

This subsection explored how emotional states played out in this inquiry community through the perspective of Hope. The themes identified in this unit of analysis revealed that emotional states played a crucial role in enabling Hope to find meanings through others' narratives, to maintain optimism and creativity in face of challenges, to experience a sense of belonging within the community and content with self, and to foster a sense of empowerment and hope for ongoing learning. These emotional responses to success, and challenges appeared to contribute to the development of collective efficacy, viewing this inquiry community as a group of educators who were capable of creating environments where emotions could be harnessed to enhance professional learning. These findings underscore the significance of emotional states in shaping Hope's understanding of collective efficacy within the inquiry community.

Collective Teacher Efficacy in this Inquiry Community

This section presents the study participants' understanding of their collective efficacy as they engaged in professional learning within the context of an inquiry community. Collective teacher efficacy is teachers' shared belief in their conjoint capabilities to influence student learning. The formation of collective teacher efficacy beliefs involves cognitive processing and interpretation of the task difficulty and the group competence through the four sources of information (Goddard et al., 2000, 2004a). In this study, the interviews were specifically designed to provide space for participants to process and interpret the four sources of influence, thereby enabling them to articulate their collective teacher efficacy by describing their perceptions of the community's current capacity and future orientation. With this research design, I was able to address the study's research question directly: How do the participants understand their collective

teacher efficacy in the inquiry community? I juxtaposed the participants' individual perceptions of the community's capability as a way to come to a shared understanding of their collective efficacy. As reported by the study participants, their engagement in the inquiry community led to the development of collective efficacy that focused not only on their dedication to student learning but also on their commitment to the learning of themselves and other educators. They recognized that continuous learning and collaboration were necessary to enhance their ability to support all students effectively. They defined collective efficacy as their shared belief that by collaborating and learning deeply together, they could ultimately transform the teaching and learning experience. In this section, I elaborate on their shared definition of collective efficacy through descriptions representing the collective efficacy generated from the analysis.

One way that participants came to understand the collective efficacy of the inquiry community was that they developed a heightened awareness of their beliefs and values and came to recognize how those beliefs and values impact the ways they all teach. For example, through his collaboration with the other educators in the inquiry community, Oliver realized that the way he phrased the reflection prompts influenced his third-grade students' chances to reflect genuinely. He commented,

I have to be very thoughtful about how I ask questions, how I present information, so that way I'm not using my bias or I'm not showing my bias towards reflection to them [my third grade students]. I'm trying to stay as neutral as possible towards it while still being excited about reflecting. (Oliver, Interview 3/5, 10.27.22)

Through his engagement in the inquiry community, Oliver sensed the collective efficacy in raising teacher awareness. As Oliver reflected, "being aware of our own beliefs and values, and how that can affect our teaching is something that's really important to pull at the forefront of our minds. Through our collaboration, that was something that was really made apparent" (Oliver, Interview 5/5, 12.12.22). What we can learn from Oliver's reflection is that collective efficacy

involves the belief that together we could be more mindful of our beliefs, and how they facilitate or inhibit student learning.

Another way participants in this study came to define collective teacher efficacy was that they became more prepared to support their students with a greater awareness of their unique contributions. For instance, when asked about the potential she saw among the educators in the inquiry community at the end of the semester, Hope responded, “everybody’s in a better place to be able to help their students” (Hope, Interview 5/5, 12.7.22). She elaborated by providing several examples,

Eva kept working on something that she was passionate about. She saw good things come from it, so she’s going to keep doing that. Oliver discovered things about the needs of his students and where they are and he’s going to keep doing that and learning more about them. Val understands inquiry better, and she’s more prepared to facilitate teachers in their inquiry. Georgia now feels ready to help the interns. (Hope, Interview 5/5, 12.7.22)

Collective efficacy encompasses the shared understanding that we all feel more prepared and competent in supporting our students because we recognize our strengths, our impact, and our learners’ needs.

Participants defined collective teacher efficacy by deeply committing to student learning, not just of their own students, but of all the students of the educators in the inquiry community. This belief seems to be nurtured early on within the inquiry community. In the first interview, Eva expressed,

All of us just care about students so much whether their students are in third grade, in high school, in college, our pre-service teachers, or in-service teachers. We all are so excited because we want our students to do well and so we want everybody else’s students to do well too. (Eva, Interview 2/5, 10.3.22)

Oliver also noticed this student-centered focus, as he recalled, “through the collaboration talking about ‘why are you doing this wondering?’ all that always stemmed back to how we want to better support students” (Oliver, Interview 5/5, 12.12.22). Georgia echoed a similar sentiment, “it's really inspiring to be with people who are so committed, passionate, and curious about ways that they can improve their student learning...” (Georgia, Interview 4/5, 11.16.22). Collective efficacy means that we have deep care and love for all student learners, driving us to continuously strive for their success.

Participants also committed to their continuous professional learning as educators beyond formalized professional development. Georgia and Oliver beautifully linked educators’ care for student learning to their own learning journeys. Georgia emphasized that genuine care for students fuels educators’ motivation: “People really care about their students, and that's going to lead them to support their students, be interested, be curious, and how they can best support them.... They have a lot of capacity to move forward” (Georgia, Interview 4/5, 11.16.22). Oliver concisely captured the essence of this connection, stating, “To better support students, we need to better support ourselves” (Oliver, Interview 5/5, 12.12.22). Eva recognized the potential for educators to continue learning through inquiring: “I could see that any of them being like, ‘Okay, this is a thing we could do on our own without it being in a structured class like this’” (Eva, Interview 5/5, 12.27.22). The recognition that educator learning does not stop when professional development ends was highlighted by Hope, as she said, “the inquiry community was integral because... they helped me realize that the [future] action plan... is just a continuation of the inquiry that we had just completed” (Hope, Interview 5/5, 12.7.22). Collective efficacy therefore means that our deep care for students necessitates continuous learning to enhance our support. Through engagement in inquiry community, we believe we are equipped with the knowledge, and motivation to continue learning beyond formalized professional development.

Furthermore, participants demonstrated their commitment for taking responsible risks in their own educational practices, including questioning their practices and trying new strategies. In the final interview, Georgia described the inquiry community as “daring” (Georgia, Interview 5/5, 12.8.22). She explained,

Throughout the process, we all got to a place where we were really willing and excited to step out and to question. To question a part of your practice is really like daring. They choose to do something different, or to consider doing something different, to ask yourself why something isn't working” (Georgia, Interview 5/5, 12.8.22)

The way she learned alongside the educators led her to perceive the inquiry community as capable of engaging in critical reflection, challenging existing practices, and bravely taking risks to implement new teaching approaches. Collective efficacy, then, means that we believe we have the courage to examine our practices critically and consider implementing new practices in order to provide enhanced support for our students.

Participants believed that because of their growing collective efficacy, they could generate inspiring ideas that enabled them to form a broader vision with the potential to transform their thinking and actions. The use of structured discussions throughout the seminar provided opportunities for educators to collaborate with one another. Oliver recognized how gathering different perspectives helped him to form a well-rounded inquiry question. He said, “creativity and the mindset that different people have to see things in a different way... brought me to the wondering I have now” (Oliver, Interview 3/5, 10.27.22). Eva shared a similar experience where collaboration expanded her thinking, stating, “being able to lean on each other through this data collection process helps us to give each other better ideas that are going to ultimately impact student learning in the long run” (Eva, Interview 3/5, 10.21.22). She believed this collaborative process would have a lasting impact on the way we support students. Taken together, the study participants recognized “the collective intellectual capacity of practitioners to work in alliance

with others to transform teaching, learning...” (Cochran-Smith & Lytle, 2009, p. 118). From these experiences, we can see that collective efficacy means that through collaboration (posing questions, giving ideas, and sharing our learning), we can expand our thinking by leveraging the diverse expertise of others to reimagine new directions and innovative approaches to support students.

Next, participants came to define collective efficacy through their belief that they can facilitate their students’ learning through an inquiry approach. For example, in the final interview, asked about her perception of the inquiry community, Eva said,

I think what this class taught me, and what I think it taught everyone else in the class is... here are ways we could do this with our students.... I'm already thinking about ways I could use inquiry processes to get my students thinking differently about their capstone presentations in my class" (Eva, Interview 5/5, 12.27.22).

Eva acknowledged inquiry-based approach’s potential to facilitate student learning and guide them towards discovery. Eva perceived that the educators’ experience with practitioner inquiry would enable them to incorporate an inquiry approach in their instruction or curriculum. Collective efficacy means that we, as a group of professionals learning together about and through inquiry, are capable of incorporating inquiry-based learning to enhance students’ participation in their own learning.

Another way participants defined collective efficacy was articulated in their belief that they could communicate care, warmth, and personal regard for other educators. At the beginning of the seminar, Oliver expressed feeling “insecure” (Oliver, Interview 2/5, 10.06.22) for being a classroom teacher surrounded by educators in higher education. Through the semester-long engagement in the inquiry community, he described the group as “nurturing” and “trusting” (Oliver, Interview 5/5, 12.12.22). He elaborated,

Everyone really cares about everyone else's opinions and how they've grown. It was really great to see that camaraderie between all of us.... I feel all of us at the end really felt we could trust one another with our inquiries and with even things that are going on in our day-to-day lives. (Oliver, Interview 5/5, 12.12.22)

Collective efficacy therefore means that as we strive to enhance our support for students, we also foster an inclusive, accepting, and caring environment that recognizes us as professionals, learners, and human beings.

Furthermore, participants recognized their shared capability to consistently make efforts in supporting other educators as collective efficacy. In the final interview, for instance, Eva expressed her sense of pride in both the group and herself. She said,

We were so much a part of the process.... I just felt it was almost proud of myself a little bit too... for being a part of that journey for them and being helpful. Thinking about the number of people who I could see in their presentations the places where I had made an impact to... (Eva, Interview 5/5, 12.27.22).

In addition to the collective involvement in the process, Eva's pride also stemmed from recognizing her ability to support other educators. Hope also acknowledged the ongoing support within the inquiry community. She described, "People have helped me... just by nature of being part of my journey in small and significant ways throughout the entire semester" (Hope, Interview 5/5, 12.7.22). Besides that, the participants believed this support would extend beyond professional development. Georgia saw potential for them to "continue supporting each other within the community..." (Georgia, Interview 5/5, 12.8.22). Oliver shared a similar sentiment, "I know that any of these people I could reach out and they'd be willing to help me" (Oliver, Interview 5/5, 12.12.22). Collective efficacy means that we view the community with the capability to make consistent, intentional efforts to support other educators in their learning journeys, even beyond formal professional development.

Participants defined collective efficacy through a belief that they could share their learning vulnerably and benefit from the community's collective learning. Sharing one's learning could be risky. Within the inquiry community, Oliver acknowledged both the risk and the value of sharing. He stated:

I'm super proud of the whole group in general for how willing everyone was to step out of their comfort zone, get up, and share in front of everyone. I really think everyone did such a great job with sharing their information, so many different ways, which I think really made it more authentic. (Oliver, Interview 5/5, 12.12.22)

Hope also acknowledged the significance of sharing, as she described,

...because as each person shared their inquiry... we were all putting in a thread. Once we had all done that, we could see the whole picture. So the community worked together to create an entirely new voice that we were all part of. As a whole, they helped me create my action plan. (Hope, Interview 5/5, 12.7.22)

Hope emphasized that by making knowledge public, it became accessible for others' professional growth. From this, we can also conclude that collective efficacy means that we recognize the inherent value in vulnerably sharing our learning experiences. By doing so, we not only contribute to the collective knowledge but also benefit from the collective insights gained through our shared learning journey.

Additionally, participants defined collective efficacy in their belief that they were capable of initiating more collaboration with other colleagues and across contexts. In this seminar structured as an inquiry community, the participants engaged in various forms of collaboration. During the final interview, Hope expressed her belief in the community members' inclination toward future collaboration. She stated, "I think other people will naturally bring collaborators in with them... and incorporate others on their journeys of individual improvement as teachers, as

professionals, and as students” (Hope, Interview 5/5, 12.7.22). Georgia, sharing the similar perspective, provided examples to illustrate her point. She explained,

I saw it for myself by making connections with the environmental education director. I also see it for Eva with faculty members, or for Val with her coworker group...we now see that the potential, that supporting each other can bring to continue building and cultivating those connections. (Georgia, Interview 5/5, 12.8.22)

Additionally, Oliver envisioned a unique collaboration between a college course and his third-grade classroom, in which he considered incorporating UDL (what Eva implemented in her college course) into his third-grade classroom. He explained,

If I framed UDL, a Universal Designed Learning to my students, talking about how this is a college thing, and this is what [college] students are doing, and this is what you are doing. I think they'd be so interested in that. And vice versa, if Eva is like, “I have a colleague who teaches third grade, he's using a basic level UDL. And this is what he's seeing." I think that'd be like a cool relationship right there. (Oliver, Interview 5/5, 12.12.22)

Oliver saw this collaboration across the contexts as an exciting opportunity. Thus, collective efficacy includes the belief that partnership could lead to greater work, and we believe we are confident in our ability to include more partners within and across contexts to foster collaboration and enhance student learning.

Finally, participants came to define collective efficacy as the way they persevered through challenging issues and strove for continuous improvement. During this seminar, Oliver faced challenges and successfully tackled them while also supporting others in doing the same. Asked about the inquiry community’s potential, he described the group’s perseverance:

You'll be able to tackle the harder problems. You'll be able to look at it through different perspectives. So, it's not something where it's so a matter of fact, but rather, let's try all

these different things. If it doesn't work, we'll go back to the drawing board and try more things. If that works well, how can we even improve upon that so it's not so much about the final product, but just continue to support students in any way possible. (Oliver, Interview 5/5, 12.12.22)

Accordingly, collective efficacy means that we stand by our educators during our and their challenging times, supporting each other in overcoming obstacles and helping each other to continuously improve student learning.

Overall, according to the study participants, through their engagement in the inquiry community, they developed collective efficacy in ways that emphasize not only their commitment to the learning of students, but also the commitment to supporting their own learning and that of other educators. With deep care for all students, they recognized that they needed not only continuous learning to enhance their ability to offer support but also continuous collaboration to support other educators to do the same. Therefore, they defined collective efficacy as developed in this inquiry community as their shared belief that through their efforts in learning collaboratively together in deep enough ways, they could ultimately transform teaching and learning.

Chapter 5

Discussion, Contributions, and Implications

Collective teacher efficacy has gained growing attention in the field of teacher education due to its potential to improve student achievement (Eell, 2011; Goddard et al., 2017; Hattie, 2019; Hite & Donohoo, 2021) and foster positive teaching practices and dispositions (Goddard et al., 2004b; Hoy et al., 2002; Lee et al., 2011; Lyons et al., 2016; Wilcox et al., 2014). It is believed that an inquiry-based learning community provides a promising environment for the development of collective teacher efficacy. However, limited studies have specifically examined the formation of collective teacher efficacy among educators who engage in professional learning within contexts such as inquiry communities.

Therefore, as outlined in Chapter 1 of this dissertation, a primary purpose of this study was to contribute to the existing body of research on collective teacher efficacy by investigating the processes and aspects of experiences that facilitated educators' development of collective efficacy as they engaged in an inquiry community within a graduate seminar. Chapter 2 reviewed relevant literature on collective teacher efficacy and practitioner inquiry. Chapter 3 described the use of a case study methodology, which led to new themes that could be useful for understanding what processes shaped collective teacher efficacy within this particular inquiry community. Chapter 4 presented the findings that were generated through the process of data analysis, including contextual factors of the inquiry community, aspects of experiences tapping into the efficacy-shaping sources in the inquiry community, and the educators' perceived collective teacher efficacy in this inquiry community. Chapter 5 discusses the potential significance and implications of some of the study's key findings, and provides direction for future study.

Discussion

As mentioned above, I sought to investigate the development of collective teacher efficacy within the inquiry community. As a result, five contextual factors of the inquiry community, sixteen aspects of experience that tapped into efficacy-shaping sources, and a detailed narrative of perceived collective teacher efficacy were provided. This section discusses the importance of these findings in relation to relevant literature.

Contextual Factors of Collective Teacher Efficacy

The first question in this study sought to explore how the inquiry community served as enabling conditions for fostering collective efficacy by describing the five contextual factors: community consensus, development of shared understanding, reflective practice integration, skilled facilitation, and professional empowerment. While the finding broadly supports the work of other studies linking facilitation and leadership with collective efficacy (Cansory, 2020; Goddard et al., 2015), the finding delves deeper into the role of leadership, its shift over time, and its relation to professional empowerment. The study confirms that effective leadership practices are rooted in strong ideals and beliefs (Hite & Donohoo, 2021). During the baseline interview, the study participants perceived it important to collaboratively establish community consensus, engage in regular reflective practices, develop an understanding of other educators and inquiry as a learning methodology, and find their ideas valued by others. They seemed to attribute these valuable experiences to the inquiry community facilitator, who Hope described as having “a clear vision” in creating the community (Hope, Interview 4/5, 11.16.22). In the final interview, all participants expressed that they felt their expertise was respected, and their accomplishments were acknowledged. However, they strongly emphasized that the support they experienced came

not only from the inquiry community facilitator but also from every member of the community. The shift in the participants' perceptions of leadership indicated the changing balance of support and empowerment within the inquiry community. In the seminar, educators were encouraged to take on supporter roles gradually. These roles were distributed based on their skills, interests, and expertise, and there was room for them to explore new roles and uncover new interests. While leadership responsibilities were gradually released, shared, and distributed, all members gradually felt empowered, capable, and responsible for supporting other educators. The findings of this qualitative study lend support to the quantitative research approach of Anderson et al. (2023). Anderson et al. evaluated the validity and reliability of Donohoo et al.'s (2020) construct of enabling conditions and proposed combining the subconstructs of empowered teachers and supportive leadership into "key actors." In doing so, they believed that adjusted framework could be more accessible and applicable for practitioners and help shift the focus away from role-contingent behaviors toward relational reciprocity. This study, through offering a qualitative research approach, illustrates that educators evaluate leadership responsibilities and their sense of empowerment within the context altogether. It suggests that fostering collective efficacy involves a delicate and deliberate act of balance, where leaders need to gradually and skillfully distribute leadership roles and empower educators.

Sources of Collective Teacher Efficacy

The second question in this study was to examine the formation of collective teacher efficacy in relation to the four efficacy-shaping sources. The study's results diverge from Donohoo's (2017) claim regarding power differences among the four sources. According to Donohoo (2017), the order of influence is as follows: mastery experiences, vicarious experiences, social persuasion, and emotional states. However, the results of this study demonstrate that the

order of influence deserves further investigation because my analyses revealed that each source is powerful and influential in ways that are not comparable. Its power of influence could vary among educators. For example, Hope highlighted that emotional states were an especially influential efficacy-enhancing source. She perceived that educators “can't properly function until they feel they belong [in the community], and then their identity is recognized and validated and valued” (Hope, Interview 5/5, 12.7.22) and that “effective inquiries were able to happen once people felt at peace and came to terms with their positionality” (Hope, Interview 5/5, 12.7.22). For Hope, emotional states were a fundamental efficacy-shaping source as they determine how educators act in the community and react to the challenges they face. Moreover, Georgia emphasized social persuasion with the role of activating mastery experience as a particularly influential efficacy-shaping source. Although Georgia had experienced success in defining the focus of her inquiry around her current work, she did not realize what this success meant to her until the inquiry community facilitator pointed it out explicitly: “It seems like you’re more excited. This is more like what you want to focus on!” (Georgia, Interview 2/5, 10.10.22). She also did not realize how meaningful and valuable her inquiry was until other educators pointed out the connection between her inquiry questions and the possible impact on her practices. Although this success had existed previously, it did not tap into her efficacy until others persuaded her. In her case, social persuasion was influential in ways that activated the influence of successes and transformed successes into efficacy-shaping sources. These results are in agreement with Adams and Forsyth’s (2006) argument that “interdependent dynamics and relationships among sources of efficacy perceptions are much more complex than a simple judgment of past experiences” (p. 627). The study’s findings suggest that there existed co-occurrence of sources within each meaningful interaction or event, and it might result in several pathways that are deemed more impactful. For example, in Georgia’s case, when mastery experience was followed by social persuasion, it resulted in an increase in her efficacy. Therefore,

further work is needed to identify the main pathways of the interplay of efficacy-shaping sources that can effectively contribute to the development of collective teacher efficacy.

In other respects, the study's findings complicate what constitutes the four sources of collective efficacy. For example, mastery experiences are often operationalized through student achievement (Donohoo, 2017; Goddard et al. 2000) or through being an active participant in one's own learning (Durksen et al., 2017; Loughland & Nguyen, 2020), with the partial exception of Hite and Donohoo (2021) who pointed out that the act of supporting colleagues could also serve as mastery experience. One important result of my study highlighted a broader conceptualization of mastery experiences. In Oliver's experiences, he achieved success in setting learning goals with others' support, connecting student outcomes to his practices, overcoming challenges both individually and collectively, and supporting other professionals. In addition to student achievement and personal growth, the study identified additional aspects of experience, such as examining student work, as well as collaborating with and supporting other colleagues. The findings stress the need to approach mastery experiences with an expansive view of educators' professionalism. There are two contrasting views of professionalism: restricted professionalism and extended professionalism (Hoyle, 1975). Restricted professionals focus solely on their own teaching success and rely on experiential learning. On the other hand, extended professionals situate their practice in a larger educational context, compare their work with that of other educators, engage in systematic examination of their teaching and student data, and actively collaborate with other teachers. Similarly, through learning vicariously, the educators not only considered implementing modeled teaching practices in their classrooms but also adopted the modeled mindset toward future challenges and learning. They not only persuaded each other of their ability to achieve success and overcome challenges in classrooms but also communicated care and expectations to facilitate each other's learning in the teaching community. Their emotional responses were not only relevant to stress, success, and failure in

classrooms, but also to being part of a larger educational community that embraces challenges and problem-solving. Based on the empirical findings of this study, there is a need to reconceptualize the four efficacy-shaping sources in a broader way, based on extended professionalism rather than restricted professionalism.

Collective Teacher Efficacy in the Inquiry Community

With respect to the third research question, the study participants understood collective efficacy in the context of an inquiry community as a shared belief that through collaborative and deep learning efforts, they can positively improve student learning experiences and outcomes. This nuanced understanding of collective efficacy adds complexity to the perspectives put forth by scholars such as Bandura (1997) and Goddard et al. (2004a), whose language tends to place an exclusive focus on educators' course of action "for" students. However, this study proposes an expanded view of collective teacher efficacy. Carter Andrews and Richmond (2019) advocated for equity in learning opportunities for teachers, by giving greater consideration of meaningful support for educators in professional learning designs. They suggested that when designing effective professional development, the field should take into account the equal goals and needs of both students and teachers. In other words, they emphasize the need to consider what learning experiences educators will need to develop as professionals and how to create a humanizing educational environment for professional learning. The study's findings indicate the need to shift the narrative surrounding collective teacher efficacy. Rather than being solely a construct developed for benefiting student learners, this study asserts the need to foster collective teacher efficacy with a broader view that considers the needs of students and educators as learners.

Contributions

This section discusses the contribution of the study's findings to the scholarship in the field. This study adds to the theoretical models of collective teacher efficacy and the literature surrounding practitioner inquiry. Moreover, the study also makes a methodological advancement by developing an interview protocol to study collective teacher efficacy in processes that are in greater congruence with the theory of how collective teacher efficacy is formed.

Theoretical Contributions

This study contributes to the existing literature on collective teacher efficacy, with a particular focus on what conditions and processes enable collective teacher efficacy. First, the study validated Goddard et al.'s (2004a) model of formation, influence, and change of perceived collective efficacy. The study revealed that the participants went through various processes of interpretation and analysis that were consistent with Goddard et al.'s model. These processes involved evaluating complexity and available resources, assessing individual and group competence, interpreting challenges as successes, and attributing success to internal factors. Secondly, this study supported the assertion made by Donohoo (2018) that an inquiry-based, collaborative professional learning design offers a promising context for studying the development of collective teacher efficacy. Donohoo et al. (2020) proposed a framework for enabling conditions for collective teacher efficacy, arguing that efficacy-shaping sources can be activated with five antecedents: supportive leadership, empowered teachers, goal consensus, embedded reflective practices, and cohesive teacher knowledge. The study's findings provided substantial evidence by contextualizing collective efficacy within an inquiry community and describing how the inquiry community facilitator helped foster community consensus, develop

shared understanding, integrate reflective practices, and empower professionals to take on leadership and supporter roles. This highlights how inquiry communities can serve as effective professional learning designs that foster collective teacher efficacy. Chapter 4 of the study offered a more thorough description of the inquiry community, which can serve as a useful example for leaders or professional development facilitators seeking to cultivate similar conditions in their own contexts.

As addressed earlier in this chapter, the interplay of efficacy-shaping sources is complicated, but such complexity was not reflected in Hite & Donohoo's (2021) model for leading collective efficacy. Although this study has indicated its complexity and shown how each source played out in this inquiry community, it is beyond the scope of this study to look at different pathways that lead to an increase or decrease in collective efficacy. Future studies could explore different pathways of collective efficacy development and adjust the model accordingly to reflect its true complexity. This would provide valuable insights for teacher educators regarding how to capitalize on and combine different sources to further strengthen collective efficacy.

Second, this study contributes to the literature of practitioner inquiry in teacher education. The study provides empirical evidence to support Dana and Yendol-Hoppey's (2020) assertion that collective teacher efficacy is an outcome of educators' engagement in practitioner inquiry communities. The findings in this study have gone some way toward enhancing our understanding of how engaging in the process of inquiry, especially in community, could support educators in understanding their ability to impact student outcomes. For example, in the process of data analysis, Oliver examined his student work collaboratively with Hope. With Hope's support, through pointing out the value of a specific piece of student work, Oliver recognized that the reflective practices he created for his third graders could support his third graders in taking ownership and set goals for their learning. In other words, Hope, by highlighting the value of

data, persuaded Oliver to see and believe that he had a positive impact on student learning. The combination of social persuasion and mastery experience tapped into Oliver's efficacy development as he analyzed data. Future studies that systematically examine educators' inquiry engagement through the concept of collective efficacy will accordingly have potential to inform teacher educators what processes, experiences, or types of interactions to encourage at a specific phase of inquiry engagement.

Methodological Contributions

One major methodological contribution of this study is the development of an interview protocol that was designed in alignment with the study's theoretical underpinnings. Scholars have called for approaching efficacy belief from not only the angle of social cognitive theory but also through the sociocultural perspective, especially in a collaborative context (Tschannen-Moran et al., 1998; Takahashi, 2011). This study takes account of the nature of the case context, which was a professional learning context in the design of an inquiry community. Therefore, the theoretical foundation of this study combined social cognitive theory (Bandura, 1977, 1986, 1997) and sociocultural theory to understand collective efficacy. Drawing from social cognitive theory, the study explored the role of social cognitive processes in the development of collective efficacy. Additionally, by incorporating sociocultural theory, the study acknowledged the significance of the contextual factors in shaping efficacy development.

The interview protocol was designed to facilitate and study the development of collective teacher efficacy. The interview encouraged educators to situate themselves within their professional learning context, inviting them to reflect on their perceptions of the inquiry community and specific learning events (e.g., wondering development), and highlighting the sociocultural contexts they are in. The interview was designed for a set of social cognitive

processes, where participants were invited to identify critical experiences and information (sources of collective efficacy), supported to analyze and interpret those experiences, attribute meanings to them, evaluate the task difficulty, and assess the competence of the group. Caution was put into the design and conduct of the interview to ensure that cognitive processes were engaged and that sociocultural factors were considered during the interview. Furthermore, previous research on the sources of collective efficacy has found little evidence on social persuasion and affective states (Loughland & Nguyen, 2020) and therefore some scholars claimed that these two sources have less influence (Donohoo, 2018). In agreement with Loughland and Nguyen's (2020) view of these two sources as novel categories, I approached this study with curiosity and hope for the presence and influence of these two sources. This study hypothesized that the assumptions of limited evidence and influence stem from a lack of support to facilitate these processes for investigation. Thus, this study attempted to ensure equal attention was given to the four sources of collective efficacy, by equipping educators with cognitive tools such as the feeling wheel and social map to identify experiences and information involving emotional states and social persuasion. A further contribution of this study is strengthening the alignment between theoretical and methodological underpinnings by developing an interview protocol that integrates the social cognitive theory and sociocultural theory as well as harnessing cognitive tools to support exploration and analysis of the two novel categories (social persuasion and emotional states). Further research may use the interview protocol to examine its effectiveness in supporting and assessing the development of collective efficacy elsewhere in the world.

Implications

This section proposes some potential implications for practice pertaining to how to foster and stimulate collective teacher efficacy in teacher education programs. It offers suggestions and

strategies for fostering a sense of collective efficacy among educators. Additionally, the section concludes with a discussion of the study's limitations and some opportunities it presents for future research.

Implications for Teacher Education Programs

The findings of this study carry potentially significant implications for teacher education programs. In particular, the study's findings in relation to the aspects of professional development experiences that tapped into efficacy-shaping sources provide some insights into pedagogical features and structures of professional development that leaders can focus on to foster and provoke collective teacher efficacy among educators. The study participants' social network maps also offer suggestive evidence of the interactions nested within the professional development structure, which informs how to promote relationships among educators that can potentially increase collective teacher efficacy.

Inquiry-based Approach to Create Relevance and Authenticity

The study appears to suggest that an inquiry-based approach creates relevant and authentic professional learning that increases teacher agency and efficacy. When educators find the content of professional development relevant to their work and individual needs, they take up an active role in relation to their students and classrooms as well as to other colleagues. Inquiry, when introduced as a process of learning, engages educators in addressing teaching challenges and student learning needs within the context of professional development. For example, Hope received support from other educators to inquire into her dilemma, which was her identity transition from a teacher to a teacher educator. Her strong emotional responses prompted her to embark on this focused inquiry journey. In other words, the relevance of the topic amplified her motivation to engage in professional learning.

In addition to grounding professional development within the educators' contexts, inquiry-based approach encourages educators to bring in and utilize resources within their contexts, creating authentic learning to evaluate their impact. For instance, the study participants analyzed different forms of student data, such as student written work and student surveys. It created analytical opportunities for them to recognize their impact on student outcomes, attributing the outcomes to their actions and efforts. In addition to including student data, the inquiry-based approach also encourages educators to involve significant others. As shown in the participants' social network maps, they identified the involvement of their significant others, which included students, students' family, colleagues in their workplace, principals, family, and friends. It indicated that the participants were able to maximize their learning through considering others' ideas and perspectives and utilizing resources within their own contexts. Although it is beyond the scope of this study, the participants seemed to develop increased collective teacher efficacy not only within the inquiry community but also in other communities (e.g., school, class community, institution) where they were able to leverage available human resources. When professional learning is grounded in educators' contexts and remains connected to them, it has the potential to contribute to the contexts they are part of.

Furthermore, it is crucial for educators to recognize that what others learn is relevant to their own work. For example, when Oliver discovered that despite having different inquiry questions, everyone shared the common goal of improving students' experiences, he felt driven to collaborate and learn together for the shared goal. Professional development that connects educators to their own contexts - and those of others - engages them in assessing the difficulty of individual and group challenges and evaluating the significance and potential of collaborative work. This type of design involves educators in contributing to their own and others' learning and transforming professional development from something done "to" professionals into something done "by" professionals. To make professional development relevant and authentic, teacher

education programs can use inquiry as an approach. Leaders and facilitators need to assist educators in identifying their own professional learning needs, setting challenging yet manageable goals, making professional learning plans that utilize relevant resources, recognizing the shared needs within the collective, and emphasizing their ability to support one another. When the perceived relevance is highlighted, educators are more likely to be driven to take action and collaborate in problem-solving.

Collaborative Structure and Relational Networks to Facilitate Knowledge Generation and Sharing

This study also suggests that dialogue over time could be another important element in designing professional development that fosters collective teacher efficacy. As Cochran-Smith and Lytle (2009) asserted, “a core part of the knowledge and expertise necessary for transforming practice and enhancing students’ learning resides in the questions, theories, and strategies generated collectively by practitioners themselves and in their joint interrogations of the knowledge, practices, and theories of others” (p. 124). Dialogue serves as a medium to reposition and harness the collective intellectual capacity of educators, providing a space for educators to generate knowledge collectively through reflecting, exchanging resources, challenging thinking, and brainstorming ideas.

This study offers suggestive evidence on how to create and sustain dialogue over time through creating collaborative structure and nurturing relational networks. First, teacher educators could intentionally use protocols (e.g., protocols from NSRF; School Reform Initiative) to guide educators in publicly sharing their practices and reflection in a way that not only highlights features of practices, problems, and opportunities, but also encourages feedback among educators. Such protocol-guided conversations engage educators in gradually taking on the responsibility for improving the learning of all students, reflecting intentionally for evidence of impact and new opportunities, and responding to challenges with courage by offering and

receiving a wide range of feedback. In other words, an intentional, selective use of protocols could help develop a community of educators into responsible, reflective, and responsive professionals.

Second, teacher educators could implement purposeful grouping to foster relational networks for conversations that are inspiring, challenging, vulnerable, and in-depth. The educators' social network maps at four different time points reveal that they experienced more social interactions with various educators during the initial phases but more focused interactions with critical friends during the later phases. When the participants reflected on their social interactions over time, they seemed to appreciate a well-distributed network early on. They perceived that it allowed them to gain the necessary perspectives and resources to explore their professional learning needs and leverage the available community resources to make a strategic plan for improvement. As the participants reflected on their social interaction during later phases, they seemed to find a dense relational network helpful. The growing familiarity and strengthened relationships with their critical friends empowered them to be vulnerable, take risks, and engage in profound conversations that connect their belief to their practices and to student learning. It seems that teacher education programs should prioritize ongoing dialogue about teaching and learning, provide scaffolding through the use of protocols to guide dialogue towards the integration of teaching and learning, and implement purposeful grouping strategies to help educators recognize and utilize the resources within their community, thus maximizing their own learning and that of their students.

It is important to note that limited social interactions could be a barrier to increased collective teacher efficacy. In the context of this study, educators collected inquiry data individually at their respective sites for a duration of two weeks, without gathering as a whole group. During these two weeks of field work, while there were some opportunities for educators to engage in small group check-ins, some participants reported experiencing fewer social

interactions. For example, Georgia, who encountered challenges in her data collection, expressed feelings of being “distant” and “disconnected” due to the limited opportunities to interact with fellow educators during that period. Time as a design constraint in teacher professional development has been widely recognized. It remains an ongoing goal for leaders, professional development designers, and teacher educators to address these limitations and foster innovative approaches and opportunities for educators to collaborate.

Additionally, limited social interactions with different fellow educators could pose a barrier to enhancing collective efficacy. In this study, Georgia described her tendency to pair up with the educators sitting near her, despite her recognition of the advantages of pairing with different educators and her desire to have dialogue with a broader range of fellow educators to gain varied perspectives. Because of that, she found an activity to be particularly beneficial, in which the facilitator invited everyone to first, share their needs and next, indicated how they could provide support to others. This activity, which helped facilitate the formation of working relationships and collaboration among participants, may be particularly helpful within the context of school-university partnership. While supportive structures play a crucial role in fostering positive social interactions, Adams and Forsyth (2006) emphasized that “relationships among colleagues are more valuable to an organization than the specific structure that governs such interactions” (p. 631). Therefore, to cultivate collective efficacy, it is important for leaders and teacher educators to consider how to establish collaborative structures and how to nurture positive, supportive, and healthy relationships among educators.

Reflective Practices to Process Sources of Collective Teacher Efficacy

One crucial aspect of developing collective teacher efficacy lies in the cognitive processing of sources that contribute to it. To facilitate this process, teacher education programs could intentionally incorporate reflective activities that assist educators in identifying and internalizing sources of collective teacher efficacy. For example, mapping social networks can be

used as a tool to encourage focused reflections on educator's social interactions. Mapping positions educators as meaningful knowledge generators through centering their experiences, engaging them in illustrating the journey, and honoring their creativity of illustration (Marx, 2023). The information gained from mapping can support educators in recognizing relationships, expressing genuine gratitude, and adjusting their social networks and interaction strategies. The emancipatory, reflective nature of mapping has the potential to inspire transformative actions among educators. Teacher educators and leaders could consider integrating reflective practices into the daily professional life of educators, creating opportunities for them to encode efficacy-shaping sources.

Promoting Teacher and Student Learning

The concept of collective efficacy has gained considerable attention in the education field for its crucial role in promoting teacher and student learning. In response to this trend, Hoogsteen (2020) reminded us of the danger of an excessive focus on achieving high collective efficacy, arguing this approach may be misguided. Instead, he emphasized "processes are the most important factors in student success with collective efficacy being a result and effect of those processes that can stimulate further positive outcomes and improvement" (p. 5). This study echoes Hoogsteen's (2020) view that the focus should shift away from aiming to reach a high sense of collective efficacy toward designing professional development opportunities in a direction that develops collective efficacy, which in turn spurs continuous growth in collective efficacy and student learning. That shift would orient professional development facilitators and leaders to focus attention and efforts on creating conditions and processes that encourage collective efficacy. This study also indicates a need to involve educators in understanding the development of collective efficacy. Educators' awareness of the way their interactions might contribute to their own and others' collective efficacy could help them to make deliberate efforts to support the learning of other educators and further strengthen their collective teacher efficacy.

Limitations, Opportunities for Future Research, and Conclusions

This study set out to investigate collective teacher efficacy developed within an inquiry community. The case analysis undertaken here has extended our knowledge of how the efficacy-shaping sources played out in the inquiry community as related to its emergent narrative of collective teacher efficacy. However, it is important to acknowledge the limitations of this study, including the small number of cases examined. This case study only examined one inquiry community in a particular context, with a specific group of participants, and within a particular school-university partnership. To further establish trustworthiness and strengthen research findings, future studies could consider multiple-case designs by looking at multiple inquiry communities in different contexts, and with varying demographics of participants.

Another limitation lies in the fact that each efficacy-enhancing source in this study was explored through the experiences and perspectives of a single study participant. To obtain a more comprehensive understanding of how efficacy-shaping sources play out and contribute to collective teacher efficacy, future studies are necessary to examine the perspectives of all members, looking across participants regarding what aspects of their inquiry community engagement tap into efficacy-shaping sources, and identifying patterns and combinations of efficacy-shaping sources that link to higher levels collective efficacy.

Additionally, since collective teacher efficacy is conceptualized as an emergent group-referent capability (Goddard et al., 2004a), developing collective teacher efficacy has a natural long-term trajectory. While this study attempted to address the temporal dimension of collective teacher efficacy to some extent, both theoretically and methodologically, the empirical evidence presented did not specifically highlight this aspect. To delve deeper into how collective teacher efficacy evolves over time, future studies could employ different analytical approaches and explore what is involved in conducting a temporal analysis. A temporal analysis can provide

insights into how educators' collective teacher efficacy changes through the extended process of interactions among facilitators and educators.

In terms of measurement tools, most studies on collective teacher efficacy primarily used instruments that were designed based on the conception of collective teacher efficacy as a construct serving students, such as the Collective Efficacy Scale (Goddard, 2002) and the Collective Teacher Beliefs Scale (Tschannen-Moran and Barr, 2004). This study, undertaken in the context of an inquiry community as a professional learning context, has found an expanded narrative of collective teacher efficacy. Future studies could design new instruments and scales that align with an expanded view of collective teacher efficacy that serves both students and teachers. When used in complement with quantitative measures, a qualitative and temporal analysis of collective teacher efficacy and its efficacy-shaping sources may have a crucial role in explaining what helps educators develop collective teacher efficacy as they engage in professional learning within contexts such as inquiry communities.

In recent years, scholars have dedicated their efforts to make collective teacher efficacy frameworks and models more practical for application, with a primary focus on leaders as the intended audience. For instance, Hite and Donohoo (2021) developed a five-factor model to guide leaders in fostering collective teacher efficacy, while Anderson et al. (2023) condensed it into a four-factor model for greater conciseness. Continued efforts are needed to make collective teacher efficacy frameworks and models accessible not only to leaders but also to educators at large. It is important to involve educators in understanding the profound impact of their actions on collective efficacy. To address this, future studies should explore approaches to disseminating research findings in informative, accessible, and inclusive ways. In addition to equipping leaders with knowledge and strategies on fostering collective efficacy, it is important to engage educators in understanding what they can do within institutions, within professional learning communities,

within schools to contribute to the group's collective efficacy. Developing a field of empowered and efficacious professionals requires efforts from all stakeholders.

Lastly, this study emphasizes the need for ongoing critical reflection and openness, echoing Morris's (2017) reminder. To empower the teaching profession and drive meaningful changes, it is essential for practitioners and scholars to continuously, critically examine whether the narrative of collective efficacy portrayed and promoted in research and professional development truly encompasses the diverse range of capabilities educators need to address current challenges and evaluate their own impact.

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Appendix A

Search Strings

Database	Final Search String	Number of Abstracts
ProQuest Education Journals	noft(communit*-of-practice OR communit*-of-inquiry OR inquiry-communit* OR learning-communit* OR research-team*) AND noft("action research" OR "practitioner inquiry" OR "teacher inquiry" OR "teacher research" OR "practitioner research") AND noft(teacher-educat* OR (inservice OR "in-service") OR (preservice OR "pre-service") OR teacher-candidate* OR student-teacher* OR doctoral-student*) From 2013-March 2022	44
ERIC	noft(communit*-of-practice OR communit*-of-inquiry OR inquiry-communit* OR learning-communit* OR research-team*) AND noft("action research" OR "practitioner inquiry" OR "teacher inquiry" OR "teacher research" OR "practitioner research") AND noft(teacher-educat* OR (inservice OR "in-service") OR (preservice OR "pre-service") OR teacher-candidate* OR student-teacher* OR doctoral-student*) From 2013-March 2022	101
PsycInfo	noft(communit*-of-practice OR communit*-of-inquiry OR inquiry-communit* OR learning-communit* OR research-team*) AND noft("action research" OR "practitioner inquiry" OR "teacher inquiry" OR "teacher research" OR "practitioner research") AND noft(teacher-educat* OR (inservice OR "in-service") OR (preservice OR "pre-service") OR teacher-candidate* OR student-teacher*) From 2013-March 2022	26

Appendix B

Code Book with A Priori Codes and Definitions

Category 1: Characteristic of the practitioner inquiry community as a context for collective teacher efficacy

Code	Subcodes	Definition
		Characteristics of practitioner inquiry communities that enable collective teacher efficacy beliefs include:
Goal Consensus	G_Community	Improvements goals are established and understood by the whole community.
	G_Realistic	The community goals for improvement are realistic.
	G_Clear and Specific	The community goals for improvement are clear and specific.
	G_Collaborate	There is a process in place for educators to collaborate when setting goals for improvement.
Empowered Teachers	E_Decision-making	Educators are entrusted to make decisions on community issues.
	E_Leadership	Educators are provided authentic leadership opportunities.
	E_Voices	Educators have a voice in matters related to school improvement.
	E_Expertise	Educators' ideas and expertise are valued.
Embedded Reflective Practices	R_Teaching and Learning	The community continually re-examines the extent to which teaching practices support the learning of all students.
	R_Evidence	The community examines multiple sources of evidence when considering student progress and learning outcomes over time.
	R_Student Feedback	Educators regularly seek feedback from students and use it to adjust their instructions.
Cohesive Teacher Knowledge	C_Instructional Approaches	The community holds shared beliefs about instructional approaches that are most effective for student learning.
	C_Classroom Instruction	The community agrees about what constitutes effective classroom instruction.
	C_Assessment	The community agrees about assessment strategies that are the most impactful.
	C_Other Teachers	Educators are aware of the teaching practices used by other teachers in this community.
Supportive Leadership	L_Effective Support	Community mentors support educators in carrying out their inquiry effectively.
	L_Concern	Community mentors show concern for the community.
	L_Focus on Learning	Community mentors support the community to focus on learning and teaching.
	L_Acknowledge	Community mentors regularly acknowledge the accomplishments of individuals and teams within the community.

Category 2: Sources of collective teacher efficacy in a practitioner inquiry community

Codes	Definition
	Sources of collective teacher efficacy identified in professional development (Loughland & Ryan, 2020)
Mastery	Ongoing improvement and learning, time to develop skills and deep knowledge, and a focus on student outcomes
Vicarious	Opportunities to learn from each other and working relationships
Social	Communication, particularly collaborative and dialogic discussion
Emotional	Social emotional aspects of teaching and learning

Category 3: Perceived collective teacher efficacy within an inquiry community

Codes	Definitions: Levels of collective teacher efficacy (Hite & Donohoo, 2021)
CTE+	Educators show high collective teacher efficacy, such as becoming inquisitive, adaptive, proactive, and/or innovative.
CTE-	Educators show low collective teacher efficacy, such as being dismissive, evasive, unreceptive, and/or combative

Appendix C

Participant Information

Name	Roles and Experiences	Interests or A Focus of Inquiry	Wonderings (Inquiry Questions)
Artemis (secondary participant)	Former middle science teacher; advanced doctoral student	Real-time coaching	[Shared Inquiry] How does engaging in an inquiry community support three doctoral candidates as they work on their dissertation?
Sarah (secondary participant)	Former higher education teacher; beginning doctoral student	Trust	How does trust play a role in my development as a teacher educator?
Eva (primary participant)	Former sign language teacher; current part-time doctoral student; current university instructor; current assistant director of teaching and learning	Rural student backgrounds	What can I learn about the School District where some of my undergraduate students come from and how can that learning be used to create more equitable classrooms in the program?
Summer (secondary participant)	Former higher education teacher; advanced doctoral student	Graduate student program	[Shared Inquiry] How does engaging in an inquiry community support three doctoral candidates as they work on their dissertation?
Georgia (primary participant)	Environmental community educator; master's student	Partnering with science teachers and interns	How can I help the school programs team to work better together through understanding, valuing our different roles and past experiences, and through engaging in critical reflection/inquiry in order to better serve our students together and grow as educators?
Kris (secondary participant)	PhD degree; current third grade teacher	Storytelling	How can I use storytelling as a approach to support students (e.g., introverts)
Hope (primary participant)	Former elementary school teacher; beginning doctoral student	Teacher identities	As I transition from teacher to teacher educator, what can I learn about my identity and values as the teacher educator I hope to be?
Oliver (primary participant)	Current third grade teacher	Reflective practices	How can I make reflection an integral part of my third-grade classroom?
Val (secondary participant)	Former high school teacher; teacher educator; master's student	Inquiry as a vehicle for teacher learning	How can I better support teachers to engage in inquiry?

Appendix D

Baseline Interview Protocol

Opening Script:

I want to begin by thanking you for meeting with me. Today's interview will focus largely on your educational experience and your recent experience as a member of this inquiry community. There are no right or wrong answers, and there is no judgment on anything you decide to share. I want to remind you that what you share in this interview will be kept confidential to the extent possible. Your participation is voluntary, and you can withdraw from the study at any time, without repercussion.

Part 1: Educational Background and Experience (adapted from Hall, 2020)

1. Can you briefly tell me your educational background and teaching experience?
2. How would you describe your current roles/identities?
3. How would you describe the demographics of your students this year?
4. What do you feel your strengths as a _____ (the role they mentioned earlier)?
 - Probe: You stated _____ was one of your strengths. Can you give me an example of a time when you used that strength in the role of a _____ (the role they mentioned earlier)?
5. What do you think will be your greatest area of challenge as a _____ (the role they mentioned earlier)?
 - Probe: What experiences have led you to believe that _____ will be a challenge for you?
 - Probe: How did you feel when that happened?
6. How would your colleagues in your workplace describe you as their co-worker?
7. What brought you to decide to take this course?
8. How did you feel the time you walked into the classroom and got to know people in this course?
9. What are the elements of this course that are important to you?

Part 2: Initial Experience with the Inquiry Community

10. You have been part of the inquiry community for two weeks. How would you describe your experience so far in this inquiry community? Among all the items in this list (adapted from Donohoo et al., 2020), which four to six items best describe the inquiry community?
 - Probe: Could you give some examples related to the item you selected?
 - Probe: What does the item “___” mean to you? Why does it matter to you?

1. The goals are established and understood by members of the class.
2. The goals for improvement are realistic.
3. The goals for improvement are clear and specific.
4. There is a process in place for members of the class to collaborate when setting goals for improvement and professional learning.
5. Members of the class are entrusted to make decisions for the class.
6. Members of the class are provided authentic leadership opportunities.
7. Members of the class have a voice in matters related to school improvement and professional learning.
8. People's ideas and expertise are valued in this class.

9. The class continually re-examines the extent to which teaching practices support the learning of all students.
10. The class examines multiple sources of evidence when considering student progress and learning outcomes over time.
11. The class regularly seeks feedback from students and use it to adjust their instructions.
12. The class holds shared beliefs about instructional approaches that are most effective for student learning.
13. The class agrees about what constitutes effective classroom instruction.
14. The class agrees about what assessment strategies are the most impactful.
15. Members of the class are aware of the teaching practices used by other members in this class.
16. The facilitator supports members of the class in carrying out their inquiry effectively.
17. The facilitator shows concern for the class.
18. The facilitator supports the class to focus on learning and teaching.
19. The facilitator regularly acknowledges the accomplishments of individuals and teams within the class.

Appendix E

Collective Teacher Efficacy Interview Protocol

Opening Script:

I want to begin by thanking you for meeting with me. Today's interview will focus largely on your experience as a member of this inquiry community. There are no right or wrong answers, and there is no judgment on anything you decide to share. I want to remind you that what you share in this interview will be kept confidential to the extent possible. Your participation is voluntary, and you can withdraw from the study at any time, without repercussion.

You have been working on (wondering development/ data collection/ data analysis/ action planning and inquiry sharing). Could you share briefly about what you did/decided to do in this process?

Part 1: Emotional Experience ("self")

1. What is the focus of your inquiry today?
2. I understand that over the past few weeks, you have been engaged in (wondering development/ data collection/ data analysis/ action planning and inquiry sharing). To begin, take a moment to reflect on the experience of (wondering development/ data collection/ data analysis/ action planning and inquiry sharing) in our class. Which feelings would you use to describe your experience of action planning and inquiry sharing this semester?
 - Probe: Why do you think you had these feelings? What made you have that feeling?

Part 2: Social Environment ("self" in relation to others)

3. As you reflected on your process of (wondering development/ data collection/ data analysis/ action planning and inquiry sharing), could you please draw a circle in the middle of your paper with your name inside of it? From there, please map the interactions you experienced during the process of (wondering development/ data collection/ data analysis/ action planning and inquiry sharing):
 - Probe: Was there anyone outside of the class involved in the (wondering development/ data collection/ data analysis/ action planning and inquiry sharing) for you? If so, please add them/your interactions with them to your map.
4. Can you walk me through your map?
5. Describe the nature of your interactions in more detail. Give me some examples of how you have worked with other people on your inquiry?

- Have other people supported you as you have engaged in (wondering development/ data collection/ data analysis/ action planning and inquiry sharing)? If so, give me some examples of how **people supported you** in (wondering development/ data collection/ data analysis/ action planning and inquiry sharing).
 - So far, we have been exploring how others supported you. Have you supported others as they have been engaged in (wondering development/ data collection/ data analysis/ action planning and inquiry sharing)? If so, give me some examples of how **you supported others**.
6. Next, I am going to ask you about some key moments during your interactions during (wondering development/ data collection/ data analysis/ action planning and inquiry sharing).
- If such a time occurred, tell me about a time when you and others worked together to solve a problem related to (wondering development/ data collection/ data analysis/ action planning and inquiry sharing).
 - If such a time occurred, tell me about a time when you and members of the class celebrated together related to (wondering development/ data collection/ data analysis/ action planning and inquiry sharing).
 - Was there a time you felt you supported one another emotionally in (wondering development/ data collection/ data analysis/ action planning and inquiry sharing)? If so, tell me about that time.
 - If such a time occurred, tell me about the ways your collaboration on (wondering development/ data collection/ data analysis/ action planning and inquiry sharing) influenced your thinking about student learning, however you want to define students in your work.
 - If such a time occurred, tell me about a time when (wondering development/ data collection/ data analysis/ action planning and inquiry sharing) didn't go well or did not go particularly smoothly.

Part 3: Collective Potential (“self” as a member of the class)

In Part 3, we are going to refer to the data we gathered in Parts 1 and 2 of this interview in order to imagine the collective action and potential of the class. For this part, we'll consider the class as one whole unit.

7. Looking at the feeling wheel, which feelings would you use to describe our class as we engaged in (wondering development/ data collection/ data analysis/ action planning and inquiry sharing)?
- Probe: Why do you think you had these feelings? What made you have that feeling?
 - Probe: Can you give an example of how other members of this class work together to improve student learning?
 - (if they say yes) In your opinion, what would make such a collaboration effective?

8. What potential do you see for the people in this class to support the growth of students in the future?
 - Do you see potential for people from the class to collaborate in the support of student learning in the future? If so, in what ways?
9. Has the class influenced your professional practice? (If they need help clarifying this question: e.g., as a [role] such as teacher, researcher, community member, graduate student, etc.)? If so, tell me how.
 - If no: Do you expect it might? In what ways?
 - Has your practice as an inquirer changed since you joined the class?

Part 4: Analyzing Maps (Interview 4 only)

10. Today, we are going to revisit a list we read earlier this semester. Could you take some time to read through the 19 items? As you read, think about which statement you would use to describe this seminar and which three to five statements matter to your learning?
 - Probe: why does this statement matter to your learning through inquiry?
11. Thank you for joining me this semester in reflecting on the inquiry process. This semester, we have taken some time to explore your social interactions, with the focus on wondering development, data collection, data analysis, as well as action planning and inquiry sharing (placing the four maps on the desk or Jamboard).
 - What do you notice from the four maps?
 - What do you notice regarding the people whom you interacted with?
 - What do you notice about the ways you interacted with others?
 - ◆ In what ways did the inquiry process support your social interactions?
 - What do you learn about how you approached inquiry this semester from looking at these four maps?
 - What insight does this give you into how you might approach inquiry in the future?
 - Based on these maps of your social interactions this semester, what suggestions would you provide for other inquirers?
12. Anything else?
13. Thank you for sharing your insights with me this semester.

Appendix F

The Paseo or Circles of Identity



The Paseo or Circles of Identity

Result of collaborative work by Debbi Laidley of the UCLA School Management Program, with Debbie Bambino, Debbie McIntyre, Stevi Quate, and Juli Quinn. Created at the Winter Meeting, 2001.

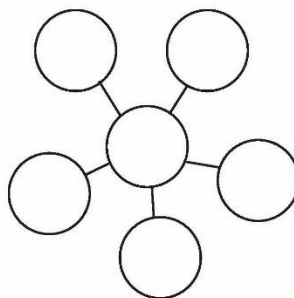
Purpose

When a group would like to examine issues of identity, diversity, beliefs, and values, and would like to begin making connections between who they are and how that shapes their decisions and behaviors, the Paseo can be a tool for initiating the dialogue. It is essentially a 2-step process, which begins with individual reflection and then moves into personal storytelling. This is a flexible process, in that the theme of the questions and prompts can be tailored to meet the objectives of the group.

Note: We have been told that The Paseo is a process that has been used in Mexico and the Southwest United States as a way of getting acquainted quickly. Traditionally, males and females of the community would line up in concentric circles, facing one another, and would make "un paseo," or pass by one another, holding eye contact and having brief opportunities to make connections.

Process

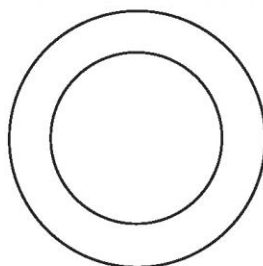
1. Each participant makes/draws a web of circles, roughly resembling the diagram of a molecule. (The facilitator may chart one as a model, with each participant creating his own on a journal page or note pad.) The basic design looks something like this:



2. Within this diagram, each group member should write his or her name in the center circle. Each additional circle should contain a word or phrase that captures some element of her/his identity — those terms or descriptors that have most helped shape who the person is and how she/he interacts in the world. Some groups will move right into this; others will prefer to have the facilitator model what is intended. For example, one circle might contain the word "woman," another the word "black," another the phrase "grew up in Deep South," and so on. As an additional step, participants may be asked to include words or phrases that other people use to identify them. This may be done in a different color, or in pencil rather than in ink.

Protocols are most powerful and effective when used within an ongoing professional learning community and facilitated by a skilled facilitator. To learn more about professional learning communities and seminars for facilitation, please visit the School Reform Initiative website at www.schoolreforminitiative.org.

3. The entire group now moves to stand in a large open area, forming 2 concentric circles, in preparation for the dialogue portion of this process. Some group members will prefer to take their notepads with them. An even number of people is necessary, since the dialogue takes place in pairs. The outer circle faces inward while the inner circle faces outward. The circles should look something like this:



The facilitator will now begin to ask the group to think about and respond to a series of questions. Important instructions to provide before the questioning starts are:

- Once the question has been stated, everyone will be allowed 1 minute to think about her/his own response to the question. This is intended to ensure that each person is fully listening to her/his partner during the dialogue process, without being distracted by a desire to plan a response when her/his turn to speak begins.
 - At the end of the 1-minute thinking time, the facilitator will announce the beginning of the round of dialogue. Each person will take turns responding, **without interruption**, to the question or prompt, with 2 minutes allotted for each. *If the speaker does not take 2 minutes, the full time should be allowed, being comfortable with the silence.* The facilitator will call time at the 2-minute point, when the pairs should make sure the second partner gets a chance to speak for a full 2 minutes, without interruption.
 - At the end of the second partner's time, the facilitator will ask the group members to thank their current partner, and say goodbye. Either the inner or the outer circle will be asked to shift to the left or right. (Groups may want to shift 1-3 persons to the right or left, to mix the partners more quickly). Participants should take a moment to greet their new partners.
 - The next round of dialogue will begin, with a new question, and with the 1 minute thinking time. The process continues through each round of questions or prompts.
4. Debrief the process. It is important not to shortchange this step. One way to begin the debrief is to ask the group to take a few minutes to do a quick-write on what they saw, heard, and felt during this process. After the quick-write, do a round robin sharing (30 seconds or less) of what each participant observed. They should provide "just the facts" without inference, interpretation, or judgment. Proceed from there to a more open debrief discussion. Possibly close the debrief with reflection time on one of the following prompts:
- What will you do differently as a result of engaging in this dialogue?
 - How will you process the emotions that surfaced for you as a result of this dialogue?
 - How might you adapt and use this activity?

Appendix G

Inquiry Circles



Inquiry Circles A Protocol for Professional Inquiry

Developed by Betty Bisplinghoff.

Overall Purpose: To generate robust inquiry questions that can lead our work in support of teachers and students as powerful learners.

Supporting Goals:

- To place inquiry at the heart of our work
- To support reflective practice
- To encourage the development of an evidence-based, positive narrative culture
- To build on the good
- To develop a vision-based professional voice

The title of the protocol, *Inquiry Circles*, was chosen for several reasons:

1. To highlight the cyclical nature of inquiry – questions lead to more questions
2. To denote the continuous connections of understanding that inquiry can support
3. To present a method for supporting inquiry that asks people to circle-up and share their stories of hope and promise

* The protocol may be used as an agenda for a day in the design of a professional learning seminar.

Phase 1 – Storytelling

**Approximately 1 hour
Individually**

1. Written Rememberings (15 minutes)

In beginning this phase, it may be helpful to remember the wisdom of Madeline Grumet (1978),

So if telling a story requires giving oneself away, then we are obligated to devise a method of receiving stories that mediates between the self that tells, the self that is told, and the self that listens: A method that returns a story to the teller that is both hers [theirs] and not hers [theirs], that contains her self [their self] in good company. (p.323)

Participants have time to write in their journals – to be alone with their thoughts and memories. It may be helpful to advise participants to begin by listing recollections about good things in their work and then to choose one item on that list to explore in more detail through drawing or writing. The following prompts are offered as ways to nudge this kind of thinking:

Think about times in your work life when you felt strong, when you felt your work was honored and you were living your true promise as an educator. List some of your most successful moments in your work. Select one of those moments to write or draw about. Where is the story for you in this successful experience?

When participants complete their reflective writing in preparation for this protocol, they move to fill an empty seat in the Circle of Inquiry (a circular grouping of chairs such that each participant has a chair in the inside or outside circle. Partner pairs are created with each participant sitting knee-to-knee with their partner.

2. Storytelling (Inside – Outside Circles) (30 minutes – 15 minutes each person) Whole Group

Participants initiate the collaborative inquiry process by telling stories of best practice based on their written reflections. Partners will take turns telling and documenting stories.

- **The teller tells for 15 minutes.**
- **The listener records notes capturing important features of the story being shared.**
- **The partner pairs switch roles for the next 15 minutes.**

It may be helpful for the listener to consider their role as listening “for” a story as much as “to” a story (Welty, 1983, p. 14). What can prove to be most helpful to the storyteller and the group are the “choice” words and phrases that emerge during the telling as well as key concepts, themes, and ideas.

3. Re-viewing your partner’s story (10 minutes) Individually

There is time now for each participant to re-view notes based on the story told to them. This is time to prepare for the responsibility of retelling the partner’s story in Phase 2 of the protocol.

Phase 2 – Retelling Approximately 1 hour Small Groups

Partner pairs regroup in circles of 4

Reconfigure inside/outside circle pairings into 2 sets of partner pairs = 4

(Adjustments to number may need to occur. This number seemed most feasible as a way to help participants expand their thinking based on the stories of others while still not becoming overwhelmed by too much information).

THE FOLLOWING 3 STEPS ARE REPEATED FOR EACH PERSON IN THE GROUP

10 minutes for each person = 40 minutes total time for this section

1. The partner (the one who listened to the story) introduces the storyteller to the group and retells the story that they heard. (4 minutes)

This process is often considered an especially meaningful aspect of the protocol experience. Participants feel supported and affirmed when they hear their stories told through someone else’s voice. There is a quick sense of linking story to story that begins to demonstrate giving life to quality work.

2. The owner of the original story has time to add to and/or clarify what their partner has shared. (2 minutes)

The original storyteller uses this time to confirm the highlights shared and/or add any other necessary details.

3. The group members now have time to ask clarifying questions. (4 minutes)

It is helpful to keep these questions focused on eliciting more information about what was “good.” This is not a time to make suggestions.

Phase 3 - Crafting and Claiming a Positive Inquiry Question
Flexible timing – group agrees to the amount of time needed
Individual Reflection and Whole Group Dialogue

1. Partners complete “Storytelling Summary Sheets” for one another based on the storytelling process and the questions that emerged from the group. Once the summary sheet is completed, it is given to the partner.

Each person reviews their notes from the storytelling experience and records responses on the summary sheet. The summary sheet is helpful in creating a shared data set based on the storytelling process and provides written documentation for the storyteller to use as a resource in crafting positive inquiry questions.

Partners give one another the gift of data: completed Storytelling Summary Sheets. Each participant receives this summary of the story as interpreted by their partner.

There is now time to pause and personally reflect on what has been shared as well as what is recorded on your summary sheets.

As an individual

This is space/time to reconsider how your personal story can serve as a beginning point for crafting an inquiry question that builds on some aspect of your work that is good and strong. What really matters? What do you want to remember to hold dear in your work? What do you want to be more involved with? When you have crafted a question for yourself, write it in the center of a sheet of chart paper. Each chart paper will now be treated as an individual “chalk talk” (see protocol for Chalk Talk process). Participants move from chart to chart and silently participate in a written conversation around each proposed question. The chalk talk provides an opportunity to “talk” around the proposed questions – exploring and expanding the possibilities of the inquiry. The intent is not to answer or propose ways to resolve questions but rather explore related assumptions and ideas.

At the conclusion of the “chalk talk,” each person has time to revise their question and the protocol closes with a go-round in which each person simply states their question for *beginning* an inquiry. It is understood that this question may go through several revisions once the inquiry is in process.

Appendix H

Wondering Litmus Test

Wondering Litmus Test

Before I start the litmus test, my **defined wondering** is:

1. Is your wondering something you're passionate about exploring?
2. Does your wondering relate to and build upon your professional goals, and the goals of your professional community?
3. Is your wondering focused on student learning?
4. Is your question a real question? Something you don't already know the answer to?
5. Is the wondering focused on your own practice?
6. Is your question phrased as a dichotomous question (yes/no)? If it is, try reframing it using one of these phrases:
 - a. In what ways does...
 - b. What is the relationship between...
 - c. How do students experience...
 - d. What happens when...
 - e. How does...
7. Is your wondering specific? Does it include details such as: participants (e.g. third graders), intervention/strategy/action, and targeted skills/knowledge/ability?

Now that I have completed the litmus test, my **refined wondering** is:

Appendix I

Inquiry Brief Tuning

Inquiry Brief Tuning Protocol: Seven Steps to a Fine-Tuned Plan for Inquiry

Suggested Group Size: 3

Suggested Time Frame: 19 minutes per group member + 1 minute to wrap-up/transition

Step 1: Select a timekeeper.

Step 2: Presenter hands out a hard copy of the inquiry brief to each member of the group.

Step 3: Group members silently read the inquiry brief, making notes of issues / questions they might like to raise in discussion with the presenter. *If you are finished reading before the 5 minutes is up, think about your responses to the questions in Step 5. **(5 minutes)**

As group members read the brief, presenter engages in a writing activity to complete the following sentences:

- *Something I would like help with on my inquiry is...*
- *One thing this group needs to know about me or my proposed inquiry to better prepare them to assist me is...*

Step 4: At the end of the 5 minutes, the timekeeper *invites the presenter to read his or her sentence completion activity out loud. (No more than 1 minute)*

Step 5: Participants talk to each other as if the presenter was not in the room, while the presenter remains silent and takes notes. *The presenter will turn his/her chair away from the group and take notes*

Participants focus on each of the following:

- Provide "warm feedback" on the inquiry brief. This is feedback that is positive in nature and identifies areas of strength. **(3 minutes)**
- Address the area the presenter would like help on and then discuss the following questions: **(6 minutes)**
 - a. What match seems to exist (or not exist) between the proposed data collection plan and the inquiry question?
 - b. Are there additional types of data that would give the participants insights into his or her question?
 - c. Rate the doability of this plan for inquiry. In what ways is the participant's plan meshed with the everyday work of a teacher?
 - d. In what ways does the participant's proposed timeline for study align with each step in the action research process?
 - e. What possible disconnects and problems do you see?

Step 6: Timekeeper asks presenter to summarize the key points made during discussion that he or she wishes to consider in refining the plan for inquiry. **(1 minute)**

Step 7: Participants conclude with an open, whole group discussion. **(3 minutes)**

From Dana, N. F., & Yendol-Hoppey, D. (2009) *Facilitator's guide to the reflective educator's guide to classroom research*. Thousand Oaks, CA: Corwin.

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PEER-REVIEWED JOURNAL ARTICLE

Wolkenhauer, R., Rutten, L., Cunningham, A., & **Yen, Y.** (2022). Making an inquiry community the core of a PDS: Learning together across institutional boundaries and roles. *School-University Partnerships, 15*(1), 64-69.

REFERRED CHAPTERS IN EDITED BOOK

Soyoung, H., Seongryeong, Y., & **Yen, Y.** (2022). The becoming of transcultural pracademics. In B. Yazan, E. Trinh, & L. J. Pentón Herrera (eds.), *Doctoral students' identities and emotional wellbeing in applied linguistics: Autoethnographic accounts*. Routledge.
<https://doi.org/10.4324/9781003305934>

PEER-REVIEWED CONFERENCE PRESENTATIONS (Selected)

Yen, Y., Wolkenhauer, R., Chang, I., & Hsu, A. Y. (2023, May). *In pursuit of truth in classroom research: Understanding teacher candidate's experience with practitioner inquiry through emotions*. Presentation at the Teacher as Researcher SIG for the annual conference of the American Educational Research Association (AERA). [peer-reviewed]. *Chang was a teacher candidate*.

ACADEMIC AWARDS AND HONORS (Selected)

Government Scholarship to Study Abroad, Ministry of Education of Taiwan (2021-2023)

Dean's Graduate Assistantship, Pennsylvania State University, College of Education (2019-2023)

Graham Scholarship, Pennsylvania State University, College of Education (2019)

Teacher Candidate Recognition Award, National Tsing Hua University, Hsin Chu, Taiwan (2013)

PROFESSIONAL ORGANIZATIONS (Selected)

American Educational Research Association (AERA), 2020-Present.

Association of Teacher Educators (ATE), 2018-Present.