Mix It Up: Blended Collaborative Professional Development to Impact High School Teacher Efficacy

Briana Ghan

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MIX IT UP: BLENDED COLLABORATIVE PROFESSIONAL DEVELOPMENT TO IMPACT HIGH SCHOOL TEACHER EFFICACY

by

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DEDICATION

I dedicate my dissertation work to my family and many friends. A special feeling of gratitude to my daughter, Ava whose curiosity and persistence through all things is awe-inspiring. To the many strong women in my family, including my Grandma Wanda and Nana Joan. Whose histories are filled with actions of great tenacity and grit, which have inspired me to become the woman I am today.

I also dedicate this dissertation to my ferocious girl gang, whose words of encouragement and insistence ring in my ears. I will always appreciate all they have done, especially Lisa Souza, for helping me develop as an educator.

Lastly, I dedicate this work to all educators. You have shown that change and adaptation are two concepts that you do not fear, even in the wake of a global pandemic. On a daily basis, you adapt to the changing environment and the needs of your students, all while keeping student’s best interest at heart. Thank you for all that you have done and continue to do.
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A big thanks to Pine Hill High School for allowing me to conduct this research. Specific thanks to the Instructional Leadership Team for helping me think through this PD design. Lastly, to all the participants who gladly gave up their time to contribute to this study. Their eagerness to participate and open dialogue made our collaboration successful and beneficial.
ABSTRACT

The purpose of this action research was to explore how a blended collaborative approach to professional development can influence teachers’ efficacy, collective efficacy, and collaboration in high school teachers. Three questions guided this study: (a) How and to what extent does teacher efficacy change with participation in a blended collaborative form of professional development?, (b) How and to what extent does collective teacher efficacy change with participation in a blended and collaborative form of professional development?, and (c) How does participation in a blended collaborative form of professional development affect sharing amongst participants?

Bandura’s sources of efficacy and the characteristics of effective PD guided the development of a 6-week blended collaborative professional development. Participants ($n = 15$) were purposively selected based on three criteria, years of experience, content taught, and grade level. This study utilized a mixed-methods approach, wherein qualitative data helped support quantitative data. The quantitative data were collected through instruments on teachers’ self and collective efficacy. The qualitative data through exit interviews, online discussion posts, and participant reflections. Quantitative data were analyzed using a paired t-test, the Wilcoxon Signed-Ranks tests, and other descriptive statistics. Qualitative data were analyzed inductively through multiple rounds of coding analysis. The results revealed a significant increase in both teacher efficacy and collective teacher efficacy after participation in the blended collaborative PD.
By participating in active learning opportunities teachers were able to share, implement, and reflect on their learning. Implications for this study include effective educational PD provider such as, instructional leadership teams, site, and district administration. Limitations of this study were the study design, study population, and proximity to the researcher.
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LIST OF ABBREVIATIONS

CM........................................................ Constructing Meaning
CUE........................................................ Computer Using Educators
GRR........................................................ Gradual Release of Responsibility
ISTE.................................................... International Standards for Technology Education
PD........................................................ Professional Development
PHHS..................................................... Pine Hill High School
PLC...................................................... Professional Learning Community
PVUSD.................................................. Pine Valley High School District
CHAPTER 1
INTRODUCTION
National Context

The greatest challenge regarding teacher professional development (PD) has been in determining what experiences are most effective for improving teaching and learning. Fullan (1991) pointedly states, “Nothing has promised so much and has been so frustratingly wasteful as the thousands of workshops and conferences that led to no significant change in practice” (p. 315). Recent changes in educational standards have states adopting new frameworks and quickly writing newly aligned curriculum. With the adoption of the Common Core State Standards and other 21st century skill-based standards (e.g., International Society for Technology in Education Standards, Next Generation Science Standards, History Social Sciences’ C3 Framework) districts are hurriedly having to rethink the content and skills necessary for students to be prepared for the post-secondary world. No longer is education defined by what teachers teach, but what their students will be able to do.

Darling-Hammond and McLaughlin (1995), noticed this educational shift occurring over 20 years when they stated, “the nation’s agenda requires most teachers to rethink their own practice, to construct new classroom roles and expectations about student outcomes” (p. 597). These recent changes in education have placed a lot of pressure on teachers. A recent Stanford University (2014) study indicated that California teachers had two major concerns with the implementation of the Common Core State
Standards. They noted first, a lack of time which has led to less time for effective teacher PD and second, serious concerns with creating a curriculum from the various newly adopted standards and frameworks (McLaughlin, Glaad, & Carrasco, 2014).

Due to these concerns, those in the field of education have no choice but to focus their attention on collaborative (Bransford, Brown, & Cooking, 2000), job-embedded (Sparks & Hirsh, 1997), standards-driven teacher PD (Sykes, 1999). The State of Teacher Professional Learning, a nationwide survey conducted by Learning Forward (2016), found that committed educators look forward to working in cycles of PD that allow educators to constantly improve their teaching. Increased educator effectiveness makes these shifts in education possible. Learning Forward (2016) outlines four key takeaways from their survey: school leadership teams must be committed to creating a system for PD; leadership teams are using student assessment data to plan PD, but are not presenting educational research in PD; teachers do not feel deeply involved in planning PD; and teachers are not provided adequate time to plan and implement strategies from PD into their classrooms.

In an era of endless and ever-evolving standards, teachers’ experiences of emotional exhaustion are at an all-time high (Butler & Shubaz, 2015; Maslach, 2003). A key factor in teacher burnout is constant pressure that is a direct result of increasing demand and decreasing resources in the classroom (Maslach, 2003). Overall, teachers resilient to burnout have stronger personal resources including increased ideas or perceptions of efficacy, stronger content knowledge, and knowledge of research-based strategies to implement into their classrooms. These teachers are more likely to master challenges of the teaching profession, and therefore are less likely to experience high
levels of teacher burnout (Dicke, Schmeck, & Leutner, 2015; Klusmann, Kunter, Trautwein, Ludtke, & Baumert, 2008; Schwazer & Hallum, 2008). More effective PD can help build those personal resources, thereby, diminishing teacher burnout (Maslach, 2003).

Effective teacher PD also helps teachers provide successful instruction in the classroom (Borko, 2004). Effective and systematic programs for PD occur when teachers adopt new classroom practices (Desimone, 2009). Ultimately, the purpose of PD is to provide learning opportunities for teachers to become more effective in the classroom (Huerta, Watt & Alkan, 2008). A teacher who participates in effective PD has a greater chance of improving classroom instruction, which can lead to higher student achievement (Vangreiken, Dochy, Raes, & Kyndt, 2015). Without effective PD, schools are less likely to meet the academic needs of their students, as well as the annual progress that is expected by district and state officials.

Traditional professional development is used by most schools and typically consists of single workshops without sustained support, feedback, or accountability (Blank & Alas, 2009). When looking at student achievement, sustained collaborative teacher PD has proven to be more effective than traditional PD (Stronge, Ward & Grant, 2011). Collaborative PD is defined as teachers working together to construct knowledge by using their classroom environment and instructional strategies as the basis for investigation (Palmisano, 2013). When teachers work together, they are able to reflect, share instructional strategies, observe each other’s classrooms, attain feedback when and provide the support needed to encourage professional growth (Liberman & Mace, 2010). The implementation of collaborative teacher PD can have an impact on how teachers
learn and their willingness to transfer knowledge back to the classroom (Stronge, Ward & Grant, 2011).

Within education, teacher collaboration plays an important role in PD, especially for modeling cooperative behaviors for students (Coke, 2005). In order to successfully implement innovative, student-centered, and collaborative learning strategies, proficient collaboration among the teaching staff is required (Borko, 2004; Bransford et al., 2000; Little, 2002; Meirink, 2007; Shipley, 2009; Slavit, Kennedy, Lean, Nelson, & Deuel, 2011). Results from the Teaching and Learning International Survey (2013), showed that teachers involved in collaborative PD reported using more innovative strategies in the classroom. Due to the complexity of collaboration in teacher PD, federal, state, and district-level governments have encouraged job-embedded collaborative PD as a strategy for developing teacher practice (Coburn & Woulfin, 2012).

One major criticism of traditional PD is that it is most commonly consists of one-shot, short in duration, learning experiences for teachers and often does not provide opportunities for teachers to collaborate and reflect upon their learning (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009). Many schools and districts struggle to provide this type of teacher PD due to the expenses and time involved during the school year to support its ongoing efforts (Easton, 2008). In addition, districts often will not allow teachers out of the classroom during the school year to attend traditional PD due to concerns regarding student-learning and the cost of substitutes and many teachers would rather remain in the classroom, as they also are also concerned about student learning (Easton, 2008; Louck-Horsely et al., 2010).
Given the challenges involved in providing teachers with effective, face-to-face PD over an extended period of time, there is a need to explore how the incorporation of online and blended approaches to teacher PD can support teacher collaboration and learning in new ways. This is an important area of research which has potential in redefining how professional development programs are designed (Luft & Hewson, 2014; Reiser, 2013). The National Speak Up Survey (2017), found that PVUSD teachers who have experienced blended classes for their own PD demonstrate advanced uses of technology and strategies that transform their classroom learning environments. Among the leadership teams surveyed, 67% claimed that the greatest challenge they face in implementing PD is motivating teachers to change their traditional instructional strategies. A significant body of research has shown in order to change classroom practices effective PD must be ongoing, sustained, intensive, and supported by modeling and/or coaching (Darling-Hammond, & McLaughlin, 1995; Desimone, Porter, Garet, Yoon, & Birman, 2002; Fullan & Hargreaves, 2002; Garet, Porter, Desimone, Birman, & Yoon, 2001; Killion, 2007; Killion & Williams, 2009). The above approaches allow educators to see and share their own work as well as student work in a reflective and collaborative manner. The studies cited show that when PD is embedded in the curriculum, classroom, and school culture, it can foster a supportive and inspiring environment for teachers to test new ideas.

Currently, the development of technology-mediated formats for teacher PD are gaining in popularity due to the ease of personalization and collaboration, but it is important to note that these new formats are not a replacement for face-to-face experiences. In fact, research by Killion and Williams (2009), endorses a blended
approach to PD, claiming teachers benefit most from a combination of peer-based online and face-to-face learning opportunities.

In the wake of an ever-changing educational platform, teacher efficacy is vital to sustaining valuable and qualified educators in the field. Teacher efficacy is defined as the confidence teachers hold about their individual and collective capability to influence and enhance student achievement. A teacher’s self and collective efficacy is considered one of the paramount beliefs that influence student learning (Hattie, 2012) and their professional behaviors (Bruce & Ross, 2008; Chваліsz, Altmaier, & Russell, 1992; Klassen, 2015; Schwarzer & Hallum, 2008; Skaalvik & Skaalvik, 2014). The changing nature of teaching and the societal expectations placed on teachers may influence changes in the level and growth of efficacy during a teachers’ career (Klassen, 2015). This ongoing change in educational standards and curriculum, combined with collaborative, ongoing PD may help reduce teacher burnout and increase school wide efficacy.

**Local Context**

This research will take place at Pine Hill High School (PHHS), one of five traditional high schools in the Pine Valley High School District (PVUSD). Pseudonyms have been used for the high school and district for anonymity. PVUSD is a comprehensive district of both middle and high schools. There are eleven secondary schools within the district. PVUSD is located in the Salinas Valley, which is home to some of the most fertile agricultural land in the state of California. Due to the nature of agricultural work, 86% of the 15,040 students in the PVUSD are Hispanic or Latino. Of the student body, 25% are English learners and 48% have been reclassified as English-proficient during sometime in their secondary career. In the district, 68.6% of students
qualify get free and reduced lunch, which means over half the student population is socioeconomically disadvantaged. When looking more specifically at the demographics of PHHS, it closely mirrors that of the greater district. There are 2,547 students, 85.7% are Hispanic or Latino, 21.6% are English learners with only 12% being reclassified within their four years at PHHS and, 70% qualify for free and reduced lunch (California School Dashboard, 2017).

When diving into the performance levels of students at PHHS it is very noticeable that many of the students are not ready to attend four-year universities post high school. Last year, only 37% of students performed at grade level in the State of California’s English Language Arts and Literacy Exam. Similarly, only 16.7% met proficient standards on the state’s Mathematics Exam. Only 40% of the students leave high school with college entrance requirements.

Due to the high population of English learners, PVUSD adopted language support systems through E.L. Achieve in 2010. E.L. Achieve provides a comprehensive approach for developing language proficiency, known as Constructing Meaning (CM). CM provides teachers with the process and tools for weaving explicit language supports in all content areas. CM believes lesson planning should be driven by academic language supports in all content areas and based on backwards design and the elements of gradual release of responsibility (GRR). CM asks teachers to look closely at the role language plays in content learning. By understanding what knowledge students need to know and express in order to access academic content, teachers can provide explicit oral and written language instruction. In order to ensure all teachers are trained in CM, PVUSD began implementing three-day trainings in 2010.
All teachers were required to attend throughout the school year. To sustain this, teachers who were hired after the initial wave of training were required to attend three-day content specific CM training hosted by the district curriculum specialists. To further continue the work of CM, the district adopted a model of instructional coaching based on the coaching philosophy of Jim Knight and the Instructional Coaching Group. Each site hired three coaches as part time teachers on special assignment, as well as a full release English learner specialist. These teachers on special assignment worked in the instructional leadership team (ILT) with site administration to develop on-going PD and coaching based on sites’ specific needs.

Along with CM, the district went one-to-one with Chromebooks in 2015 and required all teachers to attend at least twelve hours of educational technology training through the district or outside conferences such as International Society for Technology Education (ISTE) or Computer Using Educators (CUE). To sustain and support this initiative the district added educational technology specialists (edtech) to the ILT. These individuals worked closely with the other site coaches to provide more PD on best educational technology practices and how technology can support CM and explicit language instruction.

In order to gauge the implementation of the district initiatives, the Pine Valley High School District created a sixteen key element rubric. This instructional rubric serves as a common framework with common language regarding best practices and district leaders believe this can provide students with equitable access to curriculum by encouraging teachers to use quality instruction. The district leaders believe that if teachers use this tool regularly for self-assessment, it will provide valuable information
for monitoring the implementation of district-wide initiatives. While self-reflection on the rubric is specifically for teachers to reflect on their practice, sites like PHHS have begun using the teacher self-reflection data to plan PD based on teachers' judgements for areas of growth.

To add to these district initiatives teachers in California are being asked to re-think their content instruction with the adoption of the California Common Core State Standards (CCSS). All four core content areas have adopted new curriculum in order to adjust to the new standards. Math has adopted an integrated approach that combines algebra, geometry, trigonometry, and analysis throughout each school year. Science is working to teach the Next Generation Science Standards which also connects physical science, life science, earth and space science, and engineering. The new social studies framework requires teachers to focus on helping students adopt practices that historians use, rather than drilling facts, to encourage participatory citizenship through critical thinking, reading, and writing as historians do. Lastly, English teachers are focusing on literacy standards and informational texts.

According to PVUSD’s Educational Services in 2016-17 school year, 165 formal PD sessions were offered to the district’s teachers and were broken down by content area, but none of these trainings were mandatory. For the 2017-18 school year, 149 formal PD opportunities were offered. On top of these content trainings, as stated above, new hires to the district necessarily attended a three-day Constructing Meaning training. Educational Technology training was also offered. In 2016-17 thirteen formal educational technology trainings were offered as well as a winter and summer showcase. Besides the two showcases, all of the above PD opportunities took place during the school day, which
meant the district paid for subs for teachers pulled out of their classrooms. Many teachers were resistant to being out of their classrooms for multiple days during the school year and because of this attendance at PD was low.

Some of this local context can be put into perspective by looking at what teachers at Pine Hill High School had to say about these many PD opportunities. Based on a school site survey constructed by the Instructional Leadership Team in 2017, 38.5% of staff said the most effective forms of PD were formal standardized PD which included: conferences, workshops, and training sessions provided by national, state, or district employees or organizations. A similar amount, 34.6%, claimed job-embedded PD to be the most effective including participation in professional learning communities, coaching cycles, learning walks, or modeling at staff meetings. Only 26.9% found informal or self-directed PD to be the most effective, and those formats included: reading on your own, informal collaboration with peers, and participation in social media or other online communities of practice. This data conflicted with the 2017 Speak Up Survey where 97% of teachers at PHHS stated they engaged in online professional learning communities. This conflict may be attributed to participation in educational technology trainings because of the 105 teachers at PHHS, 31% said that integrating technology in their classroom had encouraged them to self-direct their own PD. One of the highest priorities for PD identified by teachers in the Speak Up Survey (2017) was how to implement a blended learning model in the classroom.

In the Bright Bytes survey conducted in 2017-18, when PVUSD teachers were asked what they needed to more effectively integrate technology, 65% answered more PD, 50% said more planning with colleagues, 25% wanted more informative evaluations,
and 25% said virtual coaching and mentors would be the most helpful. All of this data suggests that a blended and collaborative model of PD would allow teachers more time for informal collaboration and peer observations that could bridge the gap between traditional, one and done PD opportunities.

**Statement of the Problem**

A heightened demand for literacy embedded into newly adopted standards has increased pressure on teacher PD to meet the needs of an ever-expanding curriculum. To meet these needs, schools often hire outside experts who have little knowledge about the school’s local surroundings or local concerns which can lead to checked out and unengaged teachers (Hur, Brush, & Bonk, 2012). While this traditional face-to-face PD provides opportunities for teacher growth it is usually focused on targeted concepts and topics with little time for teacher collaboration (Petrie & McGee, 2012; Sickert, 2006; Wells, 2007). Educational research provides evidence that collaborative teacher PD has the potential to improve teachers experience with PD beyond traditional opportunities (DeMonte, 2013). Research on collaborative PD has provided evidence for its effectiveness as a PD approach that can provide opportunities for scaffolding and teacher dialogue (Darling-Hammond, et al., 2009). Collaboration and collective participation are important elements in effective teacher PD and are a major component in online teacher PD (Lim & Yoon, 2008). Combining a collaborative online component to an already collaborative face-to-face model for teacher PD allows for continuous, job-embedded, long-duration experiences, thereby providing the most effective PD according to research studies (Easton, 2008; Loucks-Horsely et al., 2009).
California teachers are in the process of integrating Common Core Standards and other state frameworks into their teaching (California School Dashboard 2017), which requires various levels of reconfiguring their curriculum, and their classrooms practices. As seen in the local context, teachers at PHHS are provided with many opportunities for traditional PD, often provided by job-embedded teachers on special assignment, but with little deliberate use of technology or support for collaboration. Due to this, the majority of teachers are seeking PD on their own and looking for more opportunities to collaborate with peers on and off campus.

Amidst high demands in educational reform initiatives, factors like efficacy and teacher commitment are also being compromised. Teacher efficacy has been widely studied in three areas: teacher efficacy and student achievement, teacher efficacy and working conditions, and teacher efficacy and school demographics (Bandura, 1997; Henson, 2001; Kinsey, 2006; Klassen & Chiu, 2010; Tschannen-Moran, Woolfolk & Hoy, 2001; Woolfolk & Burke, 2005). Few researchers have studied the effect of teacher efficacy as a result of innovative PD programs (Dixon, Yssel, McConnell, & Hardin, 2014; Yoo, 2016). A more careful look into the effects of PD on perceptions of teacher efficacy is needed, especially as teacher demands in the workforce continue to evolve (Klassen & Chui, 2010).

According to Stolp and Smith (1995), high collective efficacy, or the beliefs of teachers that they can make change together, is directly linked to increased motivation, student achievement, positive teacher collaboration, and improved job satisfaction. Informal teacher communities, either virtual or physical, can improve teacher support and response time. While informal learning on and offline has been widely studied, the
collection of research on teachers’ collaboration in blended PD is not extensive and, in most cases, the examples were developed for teacher work in university settings (Kimmons & Veletsianios, 2014; Steinbrecher & Hart, 2012).

If teachers are being asked to reinvigorate their pedagogy within their classroom walls to meet the needs of twenty-first century students, shouldn’t PD model those twenty-first century skills? Garet et al. (2001) found that to be effective PD should include collective teacher participation, a focus on content knowledge, active rather than passive learning, coherence, and it should enhance teachers’ knowledge and skill base in many ways. Furthermore, Garet et al.’s results support speculations that school cultures where teachers are encouraged to participate in collaborative forms of PD ultimately influence implementation of new teaching practices. Therefore, as our technology-driven world grows and teachers’ opportunities for online collaboration increases, a blended form of PD can help add flexibility and agency to opportunities for teacher PD. Blended PD can also allow for differentiation and offering a variety of options when it comes to topics, concepts, and contents (Wells, 2007; Arney, 2015; Duffy, Kirkley, Del Valle, Malopinsky, Scholten, Neely, & Chang, 2006). A blended approach to PD combines the benefits of both online learning and face-to-face interaction which allows teachers to put time and effort into personal needs while still providing opportunities for practice, peer feedback, and growth (Caulfield, 2011; Locke, 2006).

**Purpose Statement**

The purpose of this mixed-methods action research is to explore the effects of a blended and collaborative form of professional development on teacher efficacy, collective efficacy, and teacher collaboration at Pine Hill High School.
Research Questions

1. How and to what extent does teacher efficacy change with participation in a blended collaborative form of professional development?

2. How and to what extent does collective teacher efficacy change with participation in a blended and collaborative form of professional development?

3. How does participation in a blended collaborative form of professional development affect collaboration amongst participants?

Researcher, Subjectivities, and Positionality

I have always been a go-getter; a doer one would say. I was the first generation in my family to attend a four-year university. Before completing my degree, I found myself 21 years old and pregnant while working part-time. When I look back, I do not know how I managed to juggle all the moving pieces to end up here, a single mom, teacher, and working on a doctorate degree at the age of 30. After receiving a Bachelor's in European History, I was convinced by a professor whom I admire to apply for the Master's in Education and Credentialing program at the University of California Santa Cruz. I finished top in my class and began teaching at Pine Hill High School. Originally, I entered into the field of secondary education because of my love for history-social science. As time has passed, I have become more passionate about education itself rather than the content I teach. Eventually, I would love to make a greater impact on instruction, including how educational technology is infused into classroom best practices. I really enjoy working with new teachers and others who are eager to try new things. Ultimately, that passion led me to the University of South Carolina to pursue a doctorate in
Educational Technology. I think it is my passion for making a greater impact on each part of my life that has allowed me to maintain an adequate balance in all facets.

After two years of working at Pine Hill High School, I was asked to take on a new position as the Educational Technology Specialist, EdTech for short. This position allows me to do the two things I love in regards to education, such as working closely with students and carrying out meaningful PD. As the Educational Technology Specialist, my job is to assist teachers in implementing educational technology in their classrooms to amplify many forms of literacy. Literacy can be associated with supporting district initiatives for English learners, helping teachers gain technology literacy to impact their productivity or engagement in lessons, as well as creating digital literacy lessons to help students effectively navigate digital content. Because I am seen as fairly new to the field of education, it can be very challenging to aid resistant veteran teachers in the implementation of transformative technology into their classrooms. However, I have openly accepted the challenge. Another area of my role is working closely with site administration and district directors to better understand what is working in regards to PD. It is this area that led me to choose my research topic. My topic will allow me to investigate a model for PD that not only attempts to improve teaching but makes school sites a place for transformative and collaborative teacher learning.

My research seeks to understand the personal impact of teachers’ perceptions due to the implementation of this new form of PD. Based on a comprehensive review of school outcome data conducted by John Hattie (2008), what teachers do in the classroom everyday makes the biggest difference in student achievement. Therefore, effective PD that boosts efficacy and impacts classroom practice is the best way to reach high levels of
efficacy and student performance. According to Jones and Dexter (2014), informal communities are formed between teachers who are in close contact with one another, either virtually or physically. These informal communities increasingly improve response time and teacher support. Due to the nature of my research, I plan to follow an interpretivist approach because social factors are important to the development and continuation of communities, both on and offline, within school sites (Pont, B., Nusche, D., & David, H., 2008).

The interpretivist researcher believes that individuals seek to understand the world in which they live and work through the development of participants’ experiences. Understanding is varied and complex and cannot always be placed into categories or boxes of understanding (Creswell, 2014). The interpretivist researcher seeks a balanced representation of participant’s views, raises awareness, and aims to build rapport (Mertens, 2009). Interpretivists researchers tend to rely on the participants' views of the situation being studied and recognize the researchers impact on the research in regards to their personal background and experiences (Mackenzie & Knipe, 2006). The constructivist researcher relies heavily on qualitative data collection methods and analysis or with a combination of both qualitative and quantitative methods known as mixed methods (O’Donoghue, 2007). Quantitative data may be utilized in a way, which supports or expands upon qualitative data and effectively deepens the description (O’Donoghue, 2007). While looking at data and analyzing feedback, it will be important to consider which positionality this person or group sees me as. As a teacher-researcher who will be directly involved with the research and have a collegial relationship with the
participants, I will position myself within the research text by calling out any underlying biases.

According to Herr and Anderson (2004), researchers sometimes operate in multiple positionalities from insider and outsider in varying degrees. Due to the nature of my role, I believe I am operating in dual positionalities depending on the school group I am working around. When it comes to the facilitation of PD, I may be considered an outsider, because teachers may see me as operating in a top-down system alongside administration to encourage district initiatives that have not traditionally been well-received by all teachers. I plan to negotiate my role as an outsider by making sure teachers are given plenty of research on why the given strategies and materials, they are given in the PD are valid. I will communicate that I am not operating as an observer for administration, but our goal is to reach higher levels of student engagement and achievement. Sometimes, my role as a teacher and colleague may have other colleagues perceiving me as an insider working with them to complete PD; in this case I will be able to depend on these teachers to encourage discussions through the online PD. These dual positionalities will be vital to consider when trying to understand or make sense of teacher perceptions and I must take both into consideration when looking at my data. It will be important to take off identifiers in order to code interviews with an unbiased perspective.

**Definition of Terms**

**Teacher efficacy**

Teacher efficacy is defined as teachers’ confidence in their ability to promote students learning: (Hoy, 2000). Teacher efficacy is seen as a teacher’s perception of their teaching and therefore is not an objective measure.
Collective Teacher Efficacy

The shared belief of teachers within a school that together they can significantly and positively impact student learning. Collective teacher efficacy is a school wide variable and has much to do with teachers’ trust in the organization of the school systems to effectively execute instructional strategies and make positive outcomes on student learning (Ross & Gray, 2006).

Productive Group Work

Productive group work combines structure, scaffolds, and accountability for effective student collaboration (Fisher, Frey, & Everlove, 2009).

Professional Development

Professional development provides teachers with opportunities to develop personally and professionally as a way to contribute to the development of a learning organization where the emphasis is on quality and learning (Blandford, 2000).

Blended Professional Development

A mix of traditional on-site instruction with innovative learning technologies (Lim & Yoon, 2008) and a combination of face-to-face and online experiences where learners are not always at same location (Owston, Wideman, Murphy, & Lupshenyuk, 2008).

Collaborative Professional Development

Collaborative professional development is defined as teachers working together to construct knowledge by using their classroom environment and instructional strategies as the basis for investigation (Palmisano, 2013). Teacher collaboration can be considered a powerful professional development tool. It is the interaction between at least two equal
parties who work towards a common goal while engaging in shared decision-making (Poekert, 2012). Teachers share in the process of setting goals and implementing plans with an understanding that there is a shared sense of responsibility, a reciprocated level of respect, accountability, and equitable distribution and exchange of available resources (Poekert, 2012).
CHAPTER 2

LITERATURE REVIEW

Introduction

The purpose of this action research will be to explore the effects of a blended collaborative form of professional development (PD) on the self and collective efficacy of teachers at Pine Hill High School. The review of the following literature focuses on the main aspects of the three research questions which guide this action research.

1. How and to what extent does teacher efficacy change with participation in a blended collaborative form of professional development?

2. How and to what extent does collective teacher efficacy change with participation in a blended collaborative form of professional development?

3. How does participation in a blended collaborative form of professional development affect collaboration amongst participants?

Based on the research questions, four main variables were used to guide the research for this literature review: (a) teacher efficacy (b) collective teacher efficacy (c) blended professional development, and (d) collaborative professional development. I conducted literature searches for the years, between 1980-2018 and found peer-reviewed literature using electronic databases such as Google Scholar, ERIC, ProQuest, PsycArticles, PsycInfo, and Education Source. Keywords and phrases I used included: teacher professional development, blended professional development, collaborative professional development, teacher collaboration, teacher efficacy, teacher efficacy, and
collective teacher efficacy. Furthermore, I used the bibliography pages to mine articles from those most closely related to the research topic. I paid close attention to materials that utilized similar theories, settings, and research methods proposed for this study.

There are three major themes within this literature review. The first section focuses on the theoretical framework of multiple social learning theories including sociocultural theory (Vygotsky, 1978), social learning theory (Bandura, 1977), and adult learning theory (Knowles, 1980). The second section provides an overview of teacher PD, including definitions, various formats, and characteristics of effective teacher PD with an emphasis on blended and collaborative forms of PD. Lastly, a close look at teacher self and collective efficacy are discussed with an emphasis on efficacious teachers and the impact of teacher PD on self and collective efficacy.

**Social Learning Theories**

This research seeks to understand teacher efficacy and collaboration in a blended form of teacher professional development. Across content areas, teachers are seeking participation in online communities (Duncan-Howell, 2010; Tsai, 2012). Teachers migrate towards online communities to lessen feelings of isolation and find emotional support; while others connect to online communities to improve their teaching practices (Hur & Brush, 2009). The following section aims to examine the theoretical foundations for forming collaborative learning environments. The analysis begins with the development of social learning which is prominent in the literature of Vygotsky's (1978), social learning theory (Bandura, 1977), and the factors which affect adult learning and andragogy (Knowles, 1980).
Sociocultural Theory

Sociocultural Theory developed from the work of psychologist Lev Vygostsky, believes that parents, caregivers, peers, and culture at large are responsible for developing higher order functions (Vygotsky, 1987). Sociocultural theory focuses not only on how adults and peers impact learning but also on how cultural beliefs and attitudes influence how instruction and learning take place (Tharpe & Gallmore, 1988). According to Vygotsky (1987), learning has its basis in interacting with other people.

Vygotsky’s sociocultural theory described the zone of proximal development (ZPD) as the difference between what a child could do with help and what the child could do independently. Understanding Vygotsky’s sociocultural theory of learning for children could provide insight for examining what an adult can accomplish independently versus with the help of a peer teacher through collaborative PD (Smith & Pourchot, 2013). Warford (2011) expanded on Vygotsky’s sociocultural theory and his concept of the ZPD by explaining how the same concept can relate to teachers. Vygotsky developed his original theory with children as the focus and did not design methodologies related to teacher education.

Researchers Tharpe and Gallmore (1988) used Vygotsky’s theory of the ZPD to expand on the theory with children. They used a four-stage system to show how children developed speech and language. The first stage is assistance provided by those who were more capable or knowledgeable (Halverson, 2011). The second stage is assistance provided by oneself (Halverson, 2011). The third stage is authorization through practice (Halverson, 2011). The fourth is recursiveness through stages one through three.
These stages were developed with children in mind. These four stages may have inspired Warford to develop a similar model for teacher ZPD.

Teacher ZPD, as described by Warford (2011), also includes four stages to further explain. Warford’s stages of teacher ZPD were outlined as self-assistance, teacher assistance, internalization, and recurrence (Fani & Ghaemi, 2011). Unfortunately, Warford’s extension has received little attention in empirical literature, even though it has been readily applied to teacher PD (Fani & Ghemi, 2011).

Teacher ZPD and the ZPD of children are slightly different in that there is a reversal of the first two stages. Instead of self-assistance, first comes teacher-assistance. Because of the importance and amount of prior learning adults bring to their new learning (Warford, 2011). During collaborative PD a teacher who was less competent would be paired with a teacher who was more competent in working with a skill or concept. Two teachers working together could improve or master the skill that one of the teachers may need more support in. According to Vygotsky’s ZPD, the less competent individual would become independently proficient in the skill by working with others.

The use of this sociocultural theory and ZPD were vital when considering the criteria for participants in this action research, as well as the development of discussion questions for the online component of the innovation. Teachers' prior knowledge, experience, and ZPD was considered when developing the questions for weekly online discussions to allow for reflection on what participants already know or have tried or begun to implement in their classrooms.
Social Learning Theory

Bandura (1977) suggested that learning is tied to the observation of social interaction. Similar to behaviorist learning theories, Bandura said in conditioning and added that individuals learn from observational and mediating learning. In observational learning, individuals model what they see; models provide examples of behavior to observe and imitate (i.e., masculine and feminine). Observational learning cannot occur without cognitive processes (Lortie, 2002). Bandura said that four mental factors determine the learning process: attention, retention, reproduction, and motivation. Attention is the extent to which learners are exposed to behaviors. Retention is how behaviors or actions are remembered while reproduction is the ability to perform the modeled behavior or action. Lastly, motivation is the choice to deliver the behavior or action. Motivation may be the most important factor in social learning; if the vicarious reinforcement is not essential to the learner, they will not imitate the behavior (Bandura, 1977). The learner seeks to reproduce the behavior they retain based on the perceived costs or rewards of the action.

Observational learning has been found to be a key tool in teacher PD (Lortie, 2002), as has the importance of a teachers mental state as they enter a classroom (Rowlands, Thwaites, & Jared, 2011). The way in which teachers choose and construct behaviors is influenced by the extent to which they believe they will be successful with implementing the action (Rowlands et al., 2011). This self-regulatory process within social learning theory is referred to as efficacy. Teacher efficacy is the belief a teacher has in the level of success they will experience when they act in certain ways in specific contexts (Hoy, 2001). Efficacy reflects cognitive capacities and underlying skills, it also
incorporates affective components such as confidence, motivation and willingness to innovate (Bandura, 1997). Earlier research found teachers’ efficacy to be associated with the implementation of teaching strategies and student achievement. Teachers with lower levels of efficacy are more doubtful about student motivation and believe in firm classroom regulation and rely on extrinsic incentives and negative supports to get students to study (Woolfolk, Rosoff, & Hoy, 1990).

Much behavior, according to Bandura (1977, 1997), becomes repetitive and does not require prior modelling and planning. Teachers at the beginning of their careers observe and model the practice of other master teachers, in order to adapt them and reproduce them into their classrooms (Lortie, 2002), this is consistent with situated learning theory. Feedback and response as well as self-assessment and reflection by the teacher influence the formation of their pedagogies (Lave & Wenger, 1991). The blended collaborative PD being implemented in this action research attempts to increase teacher efficacy by creating online and face-to-face opportunities for teachers to participate in a model of social learning. This model attempts to encourage attention, retention, reproduction, and motivation to learn from others and engage in new teaching practices in order to affect efficacy.

**Adult Learning Theory**

An influential researcher in adult learning, Knowles (1980) claimed that adults learn differently than children. Knowles used the term andragogy to explain the model of adult learning. Andragogy is defined as the "art and science of helping adults learn" (Knowles, 1980 p. 43), in contrast to pedagogy, which he described as the art and science of teaching children. While pedagogy and andragogy are not necessarily separate, some
of the assumptions related to andragogy have been used with children with good results, and vice versa (Knowles, 1980). Andragogy is simply a model of assumptions of how adults learn best.

Knowles (1980) claimed that there are five fundamental assumptions regarding andragogy and the characteristics of adult learners: self-concept, past learning experience, readiness to learn, practical reasons to learn, and driven by internal motivation. Based on these assumptions about adult learners, Knowles discussed four principles that educators should consider when teaching adults. First, since adults are self-directed, they should have a say in the content and process of their learning. Secondly, because adults have more experience to draw from, their learning should focus on adding to what they have already learned in the past. Thirdly, adults are looking for practical learning, therefore content should focus on issues related to their work or personal life. Finally, adult learning should be centered on solving problems instead of memorizing content.

In later years, Knowles recognized that some points in his theory did not apply to all adults. Some of what he wrote about adult education could also apply to children. He began to see learning more of a range between teacher-directed and student-directed. Later, he would emphasize how each situation should be weighed on an individual basis to determine how much self-direction is helpful for learners. Online learning can benefit from Knowles’s discussion of self-directive learning, as students often receive less supervision from teachers in an online environment. Due to the self-directed nature of adult learners, the teaching-learning process becomes a shared responsibility between facilitators and adult learners. Adults require an environment where they feel at ease and appreciated, and where they can find significance in the learning activities. Moreover,
adult learners feel more committed to learning when they are involved in designing and conducting learning experiences. Therefore, collaboration is an integral part of andragogy.

Mezirow (1991) suggested that the basic goals of adult education should include "helping learners to be self-guided, self-reflective, and rational and helping to establish communities of discourse in which these qualities are honored and fostered" (p. 224). The notion of creating learning communities, especially communities that hold a deep commitment to continued growth, is an essential concept in adult learning theory (Joyce & Showers, 2002; Mezirow, 1991). Understanding teachers as adult learners and the elements of what makes PD effective for teachers will be used to create and enroll teachers in the blended collaborative PD used for this action research.

Teachers perceive collaboration as being more effective because of the feedback, the support, and opportunities for deliberations, reflections and discussions, as well as the time allotted to master a skill (Sanchez, 2012). The three theoretical models discussed in this section, sociocultural theory, social learning theory, and adult learning theory, support the creation and use of a blended collaborative form of professional development to help create an environment of sharing and learning amongst teachers.

**Professional Development**

Professional development has been described as training requested, required, or implemented as a solution to a problematic situation where professionals lack a specific or general skill (Goodman & Anderson, 2015; Quick, Holtzman, & Chaney, 2009). An abundance of research conducted in the early 2000s generated recommendations related to teacher PD making a transition from the sit and get approach through workshops to
more effective strategies including longer on-going sessions, more time on tasks and activities, and lessons stimulating to adult learners (Darling-Hammond & Hyler, 2017; Hammond, Wei, Andree, Richardson, & Orphanos, 2009). There was a debate among educators and researchers in defining PD (Demonte, 2013). While some said (Ghamrawi, 2013) that PD and training were one in the same others (Richter, Kunter, Klausmann, Ludtke, & Baumert, 2011) said that training was related to short-lived experiences and PD was an ongoing learning process.

PD has been defined in many ways, but an agreement that can be found in the literature is that it is necessary within the field of education as a way for teachers to remain current in implementing best educational practices in their classrooms (Darling-Hammond & Hyler, 2017; Blank & Alas, 2009; Bubb & Early, 2013; Ghamrawi, 2013; Hadar & Brody, 2013; Hanegan, Friden, & Nelson, 2009; Hardy, 2012). Across content areas including reading and math, PD has improved student achievement substantially, as well as teacher efficacy (Wallace, 2009). Effective teacher PD requires collaboration, action and feedback (Hadar & Brody, 2013). It has been defined as a way of developing skills by learning something new and staying current with best practices (Casey, Starrett, & Dunlap, 2013; Darling-Hammond & Hyler, 2017). Researchers Knight and Cornett (2009) have provided one perspective of PD that applies to the need for reform today; PD can no longer just be about exposing teachers to a concept or providing basic knowledge about teachers’ methodology (Knight & Cornett, 2009). Instead, “Professional development in an era of accountability requires a change in a teacher’s practice that leads to increases in student learning” (Gulamhussein, 2013, p. 9).
Characteristics of Effective Teacher Professional Development

Research over the past twenty years has come to some consensus among educational researchers regarding aspects of effective teacher PD. Some features of effective teacher PD within the literature include: focus on content and student achievement, job-embedded/taking place within the school day, continuous support of learning experiences over time, active teachers participation in creating learning experiences, and collaboration amongst teachers (Borko, 2004; Darling-Hammond & Hyler, 2017; Desimone, 2009; Easton, 2008; Loucks-Horsley, Love, Stiles, Mundry, & Hewson, 2003). Teachers need ongoing PD to improve their content knowledge and pedagogical skills, but also to build trust among the learning community so that the teachers may question and critically examine their practice (Loucks-Horsley et al., 2003). The characteristics of PD have been grouped into the six categories below: (a) duration, (b) focus on content and pedagogy, (c) goal orientated, (d) job-embedded learning, (e) active learning, and (f) teacher collaboration.

Duration. Research has shown that teacher PD, which consists of a one-time event, is not adequate (Borko, Elliott, & Uchiyama, 2002; Darling-Hammond, 2005; Mizell, 2007). Alternatively, what is supported are continuous learning activities that take place over an extended period (Hawley & Valli, 1999; Loucks-Horsley, 1995; Sykes, 1999). Research by Garet et al. (2001) has confirmed that PD sustained over a considerable amount of time is more likely to be higher in quality. Additionally, time that is provided to teachers during school hours to engage in collaborative forms of PD, such as professional learning communities has a more significant impact (Hudson, 2002; Kennedy, 2006).
Focus on content and pedagogy. Teachers should be highly educated and qualified in content knowledge (Birman, Desimone, Porter, & Garet, 2000; Bransford et al., 2000; Friedman, 2004; Sparks & Hirsh, 1997). Therefore, effective teacher PD focuses on content and pedagogy (Loucks-Horsley, 1995). According to Grossman and Schoenfeld (2005) pedagogical content knowledge is the "ability to anticipate and respond to typical student patterns of understanding and misunderstanding within a content area, and the ability to create multiple examples and representations of challenging topics that make the content accessible to a wide range of learners" (p. 201). Sykes (1999) found that teacher PD works when it is embedded in content that the students will be learning.

Goal-oriented. Loucks-Horsley (1995) advised that teacher learning should be focused on a school goal, such as common formative assessments to inform instruction. Sparks and Hirsh (1997) noted the importance of aligning student objectives and outcomes as staff activities. Guskey (2000) advocated for effective teacher PD to be guided by explicit goals about the implementation of classroom practices with an emphasis on attaining student outcomes. Results-driven PD aligned with school goals has been shown to alter teacher instructional strategies in ways that benefit students (Sparks & Hirsh, 1997). Birman et al. (2000) found that coherence of PD goals with school policies and other PD experiences was directly related to increased teacher learning and improved classroom practice.

Job-embedded learning. Effective teacher PD takes place in the context of the classroom and the school as teachers work together on issues that are contextual and relevant to them (DuFour, Eaker, & Dufour, 2005; Hawley & Valli, 1999; Loucks-
Horsley, 1995; Rosenholtz, 1991). Sparks and Hirsh (1997) recommended that teacher PD be job-embedded. Further, Ball and Cohen (1999) described the benefits of teacher learning being centered in practice with opportunities for learning coming from colleagues sharing lesson plans and classroom samples. Similarly, Putnam and Borko (1997) advise that there are various ways to situate teacher learning within their practice (e.g. modeling, observing, videotaping, analysis). Through various job-embedded strategies, including critical friends group, differentiated coaching, lesson study, mentoring, and study groups, teachers can begin to be reflective practitioners with the goal of supporting student learning (Easton, 2008).

**Active learning.** Effective teacher PD incorporates opportunities for teachers to become actively engaged in their learning (Garet et al., 2001). Planning how to use the new curriculum, where to insert new teaching methods, analyzing student work, observing and being observed, reflecting on classroom experiences, and discussing teaching and learning with other educators are all examples of active learning. Active learning is often centered on the learner and involves PD that builds on the strengths, interests, and needs of the learner (Bransford et al., 2000). Learner-centered PD activities are based on constructivist philosophies of learning. Constructivist theory suggests that learners actively construct knowledge by interpreting events through their existing knowledge and beliefs (Berger & Luckman, 1966). Teacher PD research recommends that teachers must experience constructivist learning to incorporate active learning experiences into their teaching practices (Putnam & Borko, 1997; Sparks & Hirsh, 1997).

**Teacher collaboration.** Effective teacher PD is community centered and involves norms that encourage collaboration in learning (Bransford et al., 2000). Little (2002)
states, “Researchers posit that conditions for improving teaching and learning are strengthened when teachers collectively question ineffective teaching routines, examine new conceptions of teaching and learning, find generative means to acknowledge and respond to differences and conflict, and engage actively in supporting professional growth” (p. 917). Exchanges teachers have with their colleagues about instruction influence teacher learning and positive changes in classroom practice (Borko, 2004). Bruce, Esmonde, Ross, Dookie, & Beatty (2010) wrote about teachers who routinely were allowed by their school administrators to collaborate and share ideas and found collaboration amongst teachers ultimately led to changes in their instructional strategies and the changes resulted in student learning improvements. Effective PD provides teachers with opportunities to develop personally and professionally.

Effective PD is focused on best practices, consistency, and providing ongoing feedback and support to teachers during the implementation process (Teemant, Wink, & Tyra, 2011). Unlike traditional PD workshops that exposed teachers one time to a concept or teaching strategy, teachers who participate in effective PD are allowed to engage in making sense of the strategies and receive support in understanding the new practices (Darling-Hammond & Hyler, 2017; Teemant et al., 2011).

**Collaborative Professional Development**

Professional development can take place in many forms, including workshops, school visits, coaching, research, and peer observations (Knight & Cornett, 2009). Traditional teacher PD is often described as a top-down approach where teacher learning takes place as a group and is developed by others outside of the classroom or school (Avalos, 2011). In 2009, Darling-Hammond showed that out of five different types of
PD, traditional PD was provided 91.5% of the year (Darling-Hammond, et al., 2009). Hanegan et al. (2009) described it as knowledge-based presentations that addressed a small number of skills. Traditional PD has transformed over the past decade and as a result, PD in recent years has been established to meet the diverse learning needs of teachers (Curry & Killion, 2009). Recently, some traditional PD has transformed into another form known as collaborative PD.

Collaborative PD is defined as teachers working together to construct knowledge by using their classroom environment and instructional strategies as the basis for investigation (Palmisano, 2013). Collaborative PD is not a popular choice among administrators because it entails more work as their teachers must be provided more time to meet and reconvene in order to discuss classroom implementation (Poekert, 2012). Yet, the concept of collaborative PD is popular among teachers (Poekert, 2012). In this way, teachers receive one-on-one or small group assistance in the areas of curriculum, instruction, and content that need to be addressed. Vygotsky’s (1978) sociocultural theory suggests that through guidance a student could meet his ZPD. The strategies used to help a student experience the ZPD are similar to that of collaborative PD where a master teacher helped a struggling or eager to learn teacher by guiding them within the teacher’s ZPD in order to master an instructional skill.

In some cases of collaborative PD, teachers are allotted the autonomy to select their learning objectives and environment, as well as receive training on how to collaborate (Mindich & Lieberman, 2012). Teachers perceive collaboration as being more effective because of the feedback, the support, and opportunities for deliberations, reflections and discussions, as well as the time allotted to master a skill (Sanchez, 2012).
In a study where teachers participated in a summer institute of collaborative PD for four weeks, survey results indicated that the participants were proud to be a part of a support group, expressed more satisfied with being able to engage in the writing process with their peers, and developed a deeper understanding of how their students expressed during the writing process (Sanchez, 2012).

While traditional PD is often a one-time purchase, collaborative PD can be more expensive and require more time for teachers to master a skill (Poekert, 2012). Collaborative PD is a more popular among teachers because it adds to instructional strategies and student learning (Poekert, 2012). Research has supported that PD, which incorporates collaboration is more effective than traditional practices (Hallam, Smith, Hite, Hite, & Wilcox, 2015; Strahan, Geitner, & Lodico, 2010; Wallace, 2009). Several studies showed that teachers who work in a collaborative environment are more engaged, learn more, have a greater appreciation for their PD, and value their students more (Hallam et al., 2015; Strahan et al., 2010; Wallace, 2009). Effective PD provides teachers with opportunities to develop personally and professionally. The benefits that result from PD contribute to the overall development of a learning organization where the emphasis is on quality and learning (Ghamrawi, 2013). Teacher perspectives of their PD experiences can help to refine the definitions stated above and may lead to more effective teacher instruction as well as student performance.

**Online Teacher Professional Development**

Online teacher PD has increased since 2002 (Ellerson, 2013) and online teacher PD offerings are constantly expanding (Van Driel, Meirink, van Veen, & Zwart 2012). Teacher PD covers a range of purposes, such as introducing new curricula, altering
teachers’ beliefs in regards to instructional strategies, assessments, changing school organization and culture, and enhancing relationships between school and community (Dede, Ketelhut, Whitehouse, & Breit 2009). Yet, very little is known about designing and implementing best practices of online teacher PD programs (Dede, Breit, Ketelhut, McCloskey, & Whitehouse, 2006). Unless the design of the online learning is well-developed and based upon the established best practices in teacher PD, frequency of online interaction in longer durations does not translate directly into high-quality learning experiences or sustainable communities for online PD (Holmes, 2013).

Effective online learning must be well-designed and planned. Loucks-Horsely, Stiles, Mundry, Love, and Hewson, (2010) suggests a number of elements to consider when designing online teacher PD. It is suggested that the number of teachers plays an important role in selecting an appropriate online format. Similarly Prestidge and Tondeur (2013) suggests online PD that is designed based on the characteristics of effective PD will have a greater impact on teacher learning. The format may look different between a small group of teachers using videos for analysis versus a large group of teachers located in many different locations (Loucks-Horsely et al., 2010; Lim & Yoon, 2008; Van Driel et al., 2012). Low quality cameras and audio, or slow connections can significantly impact learning. To alleviate these issues, both teachers and facilitators must have access to adequate resources and be proficient in using the technology (Loucks-Horsely et al., 2010). Content must connect with teachers’ practice, as established in the research for best practices in teacher PD, and established mechanisms for teacher reflection on their own and others’ ideas and practices to minimize teachers’ feelings of isolation (Loucks-Horsely et al., 2010).
The U.S. Department of Education (2010) funded a review of online learning studies to provide policy-makers, administrators and educators with research-based guidance regarding best practices in implementing online learning for teacher PD. The results indicated blends of online and face-to-face were more effective than purely face-to-face PD. Other relevant findings indicate the importance of including collaborative and/or instructor-directed learning experiences, as these components proved more effective than online learners working independently (Means et al., 2010). Many studies differed in the amount of time spent, the curriculum and pedagogy choices, thus adding challenges for PD providers in designing learning environments knowing which online program is best for specific schools or districts PD programs (U.S. Department of Education, 2010).

Other potential challenges to online learning include teachers failing to complete assignments or participate in discussions, as it can be more difficult to catch up without face-to-face interactions and guidance (Loucks-Horsley et al., 2010). However, many programs are moving to the blended learning model, incorporating online learning with face-to-face opportunities, to address this challenge.

Blended Professional Development

There are many interpretations of the meaning of blended learning (Owston et al., 2008). According to Wilson & Smilanich (2005), the term blended learning was originally used to describe electronic learning (e-learning) combined with additional training solutions such as on-the-job training or mentoring. Lim and Yoon (2008) define blended PD as the mix of traditional on-site instruction with innovative learning technologies. While Owston et al. (2008) state that blended learning is defined as
blending a combination of face-to-face experiences, in which learners are co-located, with online experiences where learners are not at the same location. There can be many different aspects of learning and teaching that may be blended together. These aspects include percentage of time among the online versus face-to-face time, time allocated to the entire blend (synchronous or asynchronous learning), location of learning (home, workplace), blending various information and communication technologies, pedagogy, focus, types of learners, and relationships with others in the learning process (Lim & Yoon, 2008). There are many factors to be considered when developing the blended PD component for this action research, yet through careful planning, this can be an effective strategy in enhancing teachers’ PD (Owston et al., 2008).

Numerous researchers have recognized the need to understand the efficacy of online learning environments for teacher PD (Dede et al., 2006; Dede et al., 2009; Laferriere, Lamon, & Chan, 2006). A review of the literature in 2005, (Dede et al., 2006) argues the potential impact that blended learning environments can offer to teachers and educational institutions. Blended programs can positively influence teachers’ attitudes and content knowledge on specific curricular topics, motivating many participants to transform their classroom practice. Voogt, Almekinders, van den Akker, and Moonen, (2005) indicate blended programs can help teachers better understand and implement technology into their classrooms and adapt model materials for their own settings.

Teachers often miss instructional time with their students, give up personal time on nights, weekends, or summer break in order to attend PD opportunities which may be alleviated from the flexibility provided in blended PD (Dede et al., 2006; Swenson & Curtis, 2003). District and school traditional workshops are frequently offered during the
school day, requiring teachers to obtain a substitute, impacting school budgets, student learning, and teacher preparation time. Online learning opportunities can reduce the time teachers spend away from the classroom and reduce the negative impacts on the school as a whole.

The increased flexibility online learning provides may reduce scheduling conflicts and allow more teachers access to courses so they may participate in PD on instructional strategies in order to grow as a professional and impact their classroom instruction. Rovai and Jordan (2004) found that flexibility was linked to participant satisfaction and completion with one participant reporting that, “As a teacher, I would never had made it through this semester without the practical guidance of this course along with the freedom of the online component” (p. 10).

When designing blended learning opportunities many factors must be considered to increase effectiveness such as: facilitating learner readiness for group work and provide scaffolding to build skills, establishing a healthy balance between structure and learner autonomy, establish relationships among learners and a sense of community. Group activities need to be actively and closely monitored and the group task relevant for the learner (Brindley, Blaschke & Walti, 2009).

Another benefit of the blended PD online component allows teachers to apply what they are learning to their everyday teaching practice as they learn and discuss their experiences with peers (Holmes, 2013). The online format is an important piece of the blend, as it supports deeper conceptual understanding into a concept that was presented in the face-to-face meeting and it helps the facilitator to readjust the subject matter for the next face-to-face meeting (Singer & Stoicescu, 2011).
Finally, the learner-centered environments characteristic of online and blended learning aligns with best practices in teacher professional development discussed earlier in this chapter, promoting collaborative dialogue and active learning. Rovai and Jordan (2004) found that teachers were able to process new information better as the online delivery allowed them time to analyze and apply the new knowledge in their classrooms. In Matzat’s (2010) comparison of online learning communities for teacher PD, blended communities were shown to have more actively engaged members than in purely online communities. Combining an online component to face-to-face teacher PD allows for the continuous, job embedded, long-duration experiences which research states provides the most effective type of PD (Easton, 2008; Loucks-Horsely et al., 2009). Thus, blended courses may be more effective in promoting communication and discussion among participants.

**Efficacy**

Amidst a wave of educational transformation, teacher efficacy is crucial to obtaining, training, and retaining highly qualified and effective classroom teachers (Klassen, Usher, & Bong, 2010). Efficacy is a main component of social cognitive theory as established by Bandura (1994). Efficacy is a person's belief in their capabilities to perform certain tasks; one's efficacy reflects their confidence in the ability to control their assumptions about motivation, behavior, and environment (Bandura, 1994). Efficacy beliefs are developed through individual cognitive processes. This process is influenced by four sources: mastery experience, vicarious experience, physiological and emotional stimulation, and social or verbal influence (Bandura, 1994). The following section outlines in detail the sources of teacher efficacy, collective teacher efficacy, studies about
Efficacious teachers, and lastly the role efficacy plays in collaboration, and the implications on creating teacher PD opportunities.

Efficacy beliefs are developed through individual cognitive processing, which is influenced by four sources identified by Bandura (1977, 1986, 1997, & 2000): mastery experience, vicarious experience, emotional and physiological responses, and social or verbal persuasion. An individual’s sense of efficacy is developed by each of the four sources, depending on the situational context (Bandura, 1997; Cooper, 2010). Completing a task strengthens one's sense of efficacy while failing to deal with a challenge can weaken one's efficacy. Bandura (1977) suggests that individuals might benefit from vicarious experiences; seeing others perform tasks without negative consequences. This form of social modeling is important in active learning. Also important is verbal persuasion, it can be a way of strengthening teachers’ beliefs that they have what it takes to succeed in the implementation of new standards, curriculum, or strategies. Lastly, emotional and physiological responses, one’s emotional reaction to situations plays an important role in efficacy. Bandura (1977) believes that emotions brought about by difficult situations often lead to physical feelings of nervousness and anxiety. Individuals are more likely to experience success if they do not experience feelings of negative stress and anxiety.

**Teacher Efficacy**

Teacher efficacy is defined as the confidence teachers hold about their capability to influence and enhance student achievement (Bruce & Ross, 2008). Teacher efficacy is considered one of the most important beliefs in motivating and influencing student learning (Bruce & Ross, 2008; Chwalisz, Altmaier, & Russell 1992; Klassen et al., 2010;
Efficacy has been linked to vital areas of the educational process, most notably connectedness and involvement (Klassen et al., 2010). Collaboration is critical for connectedness and is consistently related to teacher efficacy and is viewed as a way to influence positive learning experiences and behavior with students (Henson, 2001; Kinsey, 2006).

Efficacy forms the groundwork for human agency and can determine the outcome of all ventures (Pajares, 1996). Chwalisz and colleagues (1992) have suggested that teacher’s efficacy has the biggest impact on teacher quality, effort, and motivation. Teacher efficacy has been studied as a personal resource that may protect teachers and others from experiencing job strain, which, in turn, makes teacher burnout less likely (Schwarzer & Hallum, 2008). Klassen & Chui (2010) found teachers with low efficacy are more likely to have higher stress levels. Further research on the topic of teacher efficacy has produced literature that focuses on how teachers believe in their ability to bring about student learning. Teacher efficacy contributes to students and education in a variety of areas including general student achievement (Ross & Gray, 2006; Ross & Regan, 1993), teacher motivation (Guskey, 1984; Midgley, Feldlaufer, & Eccles, 1989), and teacher retention (Bruce & Ross, 2008; Ross, 1998).

**Collective Teacher Efficacy**

Collective teacher efficacy is defined as the shared ideas of teachers in a school and to what extent they believe as a whole they can affect student learning (Hoy & Miskel, 2008). Collective teacher efficacy is the notion that school staff has greater confidence when there are shared visions and goals (Pajares, 1996). Within the school organization, perceived collective efficacy represents the beliefs of staff members.
concerning the performance capability of a social system as a whole” (Bandura, 1997, p. 469). For schools, collective efficacy refers to the judgement of teachers in a school that the staff as a whole can organize, execute, and impact student achievement. Therefore, collective efficacy can have a major impact on teacher retention (Yost, 2006). Bandura (1997) argued that the collective efficacy of teachers is the most powerful constructs within a school. Teachers' collective efficacy beliefs reflect teachers' views about the capability of their school to respond to challenges (Klassen & Chui, 2010). Classroom and school challenges related to literacy that have been studied include: the integration of literacy in content classes, concerns regarding parental involvement, and student behavior problems (Cantrell & Callaway, 2008, Kirby & DiPaola, 2011, Gibbs & Powell, 2011).

Teachers' sense of collective efficacy has been shown to vary across grade and content levels. Elementary teachers tend to express lower feelings of efficacy due to lighter educational demands (Goddard, Hoy, & Woolfolk-Hoy, 2000). Conversely, middle school teachers have stronger levels of efficacy, mostly because middle school students have become accustomed to academic rigor and routines (Petrie et al., 1995). When academic rigor increases in the high school level, Bandura (1997) suggested teachers view their schools as declining in instructional efficacy; in many of these cases, leadership played an integral role in fostering self and collective teacher efficacy.

As stated above, Bandura postulated four sources of efficacy: mastery experience, vicarious experience, social persuasion, and emotional and physiological cues. Just as these sources are valuable for individual efficacy, they are just as important to the development of collective efficacy beliefs (Goddard & Hoy, 2004). Along with building upon the four sources of efficacy Tschannen-Moran & Barr (2004) identified three
characteristics of schools with high collective teacher efficacy these are: school practices, teacher behaviors, and principal leadership behaviors. School practices are integrally related to both self and collective teacher efficacy. Strong efficacy beliefs impact positive school climate and staff morale (Gibson & Dembo, 1984). Ross, Hogaboam-Gray, and Gray (2004) claimed the influence of teacher collaboration influences climate by creating environments legitimize help seeking, joint problem solving, and instructional experimentation.

Collective teacher efficacy has been linked to school processes that promote teacher ownership in areas like: shared school goals, shared decision making, positively perceived school change, and empowering leadership (Ross et al., 2004). Teacher behaviors impact classroom environments and are determined by teachers’ sense of efficacy (Gibson & Dembo, 1984). When the characteristics of highly efficacious teachers are combined with a strong sense of collective efficacy, staff development can align with the values and attitudes of the greater organization (Bandura, 1997). Schools with high collective teacher efficacy display persistence and resiliency when working with low performing students (Tschannen-Moran & Hoy, 2004). Lastly, leadership is critical to the development and maintenance of schools with collective efficacy. Principals with strong leadership skills can encourage their staffs to develop a collaborative environment to overcome difficulties in the school and classroom (Bandura, 1993). Schools are social organizations; collaborative effects of schools make collective teacher efficacy a group attribute.
Teacher efficacy, Collective Teacher Efficacy, and Professional Development

Highly efficacious teachers are transformational learners; they are both consumers and producers of their environments and cultural systems (Bruce & Ross, 2008). Efficacious teachers take control of their behavior and thoughts concerning their teaching practice and strive to obtain and implement the knowledge and skills they acquire (Bandura, 1997; Bruce & Ross, 2008). Pedagogical training along with peer coaching proved to be effective in supporting teachers in their application of new strategies (Bruce & Ross, 2008). Researchers also suggested that PD programs for new teachers, including induction programs and mentorships, tend to impact teachers and their beliefs about education (Rideout & Windle, 2010). Another study of PD and teacher efficacy indicated that the more hours spent in active learning positively affected teachers’ sense of efficacy (Dixon et al., 2014). The study indicated that teacher efficacy and PD were important to teachers as they were actively learning about how to differentiate instruction.

Continual teacher PD programs that encourage teachers to play an important role in their classroom and school can assist in increasing efficacy. When teachers share in critical, reflective conversations, they can work together to connect new knowledge to their situation and context (Darling-Hammond, 2006). Teachers can build a culture of collaboration by participating in teacher PD that encourages them to engage in open dialogue (Darling-Hammond, 2006; Zambo & Zambo, 2008). Teachers who partake in PD and learning together have been shown to increase collective efficacy and increase the school's ability to meet goals together (Klassen & Chui, 2010).
Chapter Summary

Learning in collaborative spaces is based on constructivist principles that learners develop their models of information through group interaction and learning. Understanding how people learn is fraught with complexities in determining which specific components support knowledge acquisition. A sociocultural view of learning, based in Vygotskian tradition, proposes learning is internalized through social interaction (Thorne & Hellermann, 2015). Individuals create their own understandings through social interactions, assimilating information based upon what they already know, and appropriating meaning from social interactions. Bandura’s (1997) social learning theory suggest that learning is a behavioral process and developed by observing and imitating others. While Knowles (1980) contributed research on adult learners and postulated that the teaching and learning process is a shared responsibility between facilitators and adult students. Adult learners require an environment where they feel appreciated and valued. Sociocultural theory, social learning theory, along with adult learning theory are applicable in developing and fostering collaborative learning environments for PD. Each socially constructed learning theory was used in creating the innovation for blended collaborative PD in this action research.

PD is important to education (Shumack & Ford, 2011; Wallace, 2009). It is necessary for helping teachers learn best practices and incorporate different strategies and skills into their classroom instruction. Research suggests the most effective form of teacher PD is one that allows for collaboration (Hallam, Smith, Hite, Hite, & Wilcox, 2015; Strahan, Geitner, & Lodico, 2010; Wallace, 2009). Unlike the traditional PD workshops that exposed teachers one time to a concept or teaching strategy, teachers in
high quality collaborative PD are allowed to engage in making sense of the strategies and receive support in understanding the new practices (Teemant et al., 2011). While collaborative PD is ongoing and takes more time than traditional PD a blended approach for collaborative PD could alleviate some of the issues like time and costs (Easton, 2008). A blended approach for PD allows for specific training and trust building to be accomplished in-person, while also creating an online space for continual learning and collaboration without the constraints of time and place (Wells, 2007; Arney, 2015; Duffy et al., 2006). While there is a wealth of research regarding traditional teacher PD and the use of the internet to facilitate PD, there is not enough empirical evidence that supports the success of these blended models for teacher PD.

Teacher efficacy and collective teacher efficacy are vital to understanding educational reforms. Research suggests that collective teacher efficacy has the largest effect size on student success in schools (Goddard, Hoy & Woolfolk-Hoy, 2004). Instructional strategies become more rigorous as teachers are collaborative and motivated. Teachers’ sense of efficacy leads to greater collective efficacy. As collective teacher efficacy in schools increases, teachers' desires to enhance knowledge and instructional strategies through various forms of PD and self-directed learning experience increases (Pajares, 1996). As an impassioned teacher leader, I plan to continue the investigation into the connections between teacher self and collective efficacy as it relates to PD and teacher collaboration to impact student achievement.
CHAPTER 3

METHODS

Research Design

The purpose of this action research was to explore the effects of a blended collaborative form of PD on teacher efficacy, collective teacher efficacy, and collaboration at Pine Hill High School in the Pine Valley High School District. Action research is defined by Mertler (2017), as systematic inquiry conducted by teachers or others in the field of education to improve their own practice. An advantage to action research is its specificity (Greenwood & Levin 2007). This implies that action research is specific to the participants taking part in the study (Creswell, 2014; Mertler, 2017; Rudestam & Newton, 2007).

Action research was right for my context because I was not just the researcher but also the PD provider in this study. I had a distinct problem with PD that needed to be addressed. This action research took a deep look into how a blended approach to PD could impact teacher efficacy, collective efficacy, and collaboration. While the results of this study cannot be generalized to other settings, the results of the study are distinct to the research questions and circumstances being investigated. While more traditional forms of research of conducted by outsiders withdrawn from the study’s participants with the goal of documenting events, action research is quintessentially performed by insiders, such as myself, in collaboration with the participants being studied. Fittingly, the goal of action research is to spot actionable steps to improve teaching and learning.
When deciding on action research over traditional research a significant question to consider is how knowledge or information will be generated to ensure the research remains objective and interpreted with minimum bias (Mertens, 2009). Because of the social nature of action research, it aligns well with mixed methods approaches instead of singularly qualitative or quantitative methods (Mertler, 2017). As stated in the Researcher Subjectivity and Positionality section of this dissertation, my personal paradigm aligns with an interpretivist approach. Although, interpretivism is often associated with only qualitative research it can align with mixed methods when both quantitative and qualitative data are directly compared in a convergent study design (McChesney, & Aldridge, 2019). Where quantitate data was employed to point toward the effect of the intervention of teacher efficacy and collective efficacy, qualitative data were used to report the attitudes and experiences of the participants. Mertler (2017), argues, analyzing different forms of data leads to greater credibility of the study findings. By analyzing two different types of data, I was able to uncover information that may have been overlooked in a single method study. This study was able to eliminate potential bias and assess the full impact of the innovation by merging qualitative and quantitative data (Creswell, 2014).

This action research utilized a convergent approach to collecting data. An important reason a convergent mixed-methods approach was selected was to triangulate the data. Triangulation using evidence from different sources, types of data, or different methods of data collection to corroborate findings (Buss & Zambo, 2014; Creswell, 2014). Convergent methods are often chosen in action research due to time (Creswell & Plano Clark, 2018). The small amount of time available for this study made it necessary
to gather both quantitative and qualitative data concurrently. The convergent design also allowed me to compare participants’ feelings gathered through qualitative data with quantitative survey data.

The quantitative approach consisted of collecting pre- and post-survey data in order to make simple statements about participation and identify any changes made by the innovation. The survey findings were expressed numerically in order to study a sample of the teacher population at Pine Hill High School. The quantitative data results allowed me to make generalized statements and draw inferences about the innovation. Whereas the qualitative data, allowed me to take a deeper look into the insights of participants. The semi-structured interviews did not focus on statistical results, but attempted to make meaning of participant perceptions. Meaning was made through inductive analysis allowing me to build patterns, categories, and themes by organizing and connecting each of the qualitative data sources (Creswell, 2014).

**Setting and Participants**

This action research took place at Pine Hill High School, one of the five comprehensive high schools in the Pine Valley High School District. The Pine Valley High School District is located in the Pine Valley, home to some of the richest farmland in the state. Pine Hill High School is home to 2,645 students. Over half of the students are socioeconomically disadvantaged and just over a fourth are English language learners. Based on the school's demographics, it is classified as a Title I school, meaning it meets the requirements under the Elementary and Secondary Education Act to receive special funding to ensure all children can meet rigorous standards.
Pine Hill is home to 118 highly qualified teachers based on the 2018-19 School Accountability Report Card (SARC). Of the 180 instructional days, only one is used as a full PD day. As a result, the district has invested large sums of money in an instructional coaching plan to provide on-site, school day PD support for teachers. The district also encourages teachers to participate in two forms of collaborative PD. These include learning walks and coaching cycles. Collaborative forms of PD include participating in coaching observation cycles, hosting or attending learning walks, and showcasing at a PD event. The district, as well as individual school sites, are responsible for providing opportunities for teachers to meet these collaborative PD goals. At the district level, there are curriculum specialists for each core content area and two educational technology specialists. At the site level, there are two or three part-time instructional coaches and one part-time educational technology specialist. At Pine Hill, I serve as the Educational Technology Specialist. In my role, I provide site level support for teachers and am given 45 minutes at the one contractual PD day discussed above. Due to these constraints, I have also provided voluntary lunchtime, prep time, afterschool, and webinar types of PD. I chose to provide a blended form of PD at Pine Hill in order to boost participation in collaborative PD and impact teacher self and collective efficacy on campus.

Along with instructional coaching, the Pine Valley High School District has adopted Constructing Meaning (CM), Gradual Release of Responsibility (GRR), and the integration of technology as instructional best practices. These initiatives were explained with more detail in previous chapters. In order to gauge the implementation of the district initiatives, the Pine Valley High School District has created a sixteen key element rubric. The instructional rubric (see Appendix H) presents teachers with a means of self-
reflection in the districts initiatives and provide direction for school sites PD. The instructional rubric is a common framework for teachers across the district to empower them to improve instruction and refine their teaching practice. The framework was designed to help teachers provide equitable access to curriculum for all student by using quality instruction as the first line of intervention. The district believes that using the tool regularly for self-assessment provides valuable information for monitoring the implementation of district-wide initiatives. The rubric is organized around district initiatives of CM and GRR as discussed in chapter one. There are sixteen key elements within the rubric including: backwards design, language as part of content teaching, structured student talk, interactive reading and noting making, academic writing, and the use of assessment. Each year teachers at Pine Hill High School, along with the Instructional Leadership Team choose a domain of the rubric to focus on. In the 2019-2020 school year teachers at Pine Hill High School chose productive group work (PGW). Productive group work combines structure, scaffolds, and accountability for effective student collaboration (Fisher, Frey, & Everlove, 2009). For this reason, PGW was chosen as the instructional topic for this research.

Before teachers were introduced to the research, it was presented and approved by the superintendent and site principal (see Appendix A). After approval, teachers were introduced to the new form of collaborative blended PD during the January 2020 staff meeting which took place in the small gym on campus. Based on teacher assessment and feedback the collaborative online PD focused on the seven components of PGW as outlined in the instructional rubric discussed above. After the initial explanation, teachers were provided a detailed email about how to join the study (see Appendix C).
Maximum variation sampling (Creswell, 2005) is a type of purposive sampling (Creswell & Plano Clark, 2011) that was used to select no more than thirty voluntary participants to attend the study. Maximum variation sampling was selected because it allows for a wide variety of participants. A variety of participants helps determine the effect of the innovation on various groups of people with specific views (Creswell, 2005). The criteria for maximum variation sampling included years of experience, teacher discipline, and grade level taught. To identify the criteria, teachers who wanted to join the study were asked demographic questions in a Google Form survey. Questions included years of experience with categories 1-3, 3-5, 5-7, and 10 or more, discipline taught with categories math, science, English, and social studies, health, physical education, or elective, and which grade level they primarily teach freshmen, sophomores, juniors, or seniors. These criteria were chosen because when working collaboratively it is important to note the participation level of teachers with various years of experience and how their contributions to the innovation may vary. Due to the nature of the instructional rubric, discipline and grade level were chosen to have a variety of content represented within the group.

When choosing participants, a process of over-selecting on the first criterion was used and then participants were filtered out based on the last two criteria (Creswell, Hanson, Plano, & Morales, 2007). The participant group aimed to include an evenly distributed range of years of experience, but due to voluntary participation a higher number of teachers with 10+ years of experience applied. Therefore, the sample had more veteran teachers. Next, I looked at teacher discipline, within each category of years of experience. Core disciplines (e.g., math, science, English, and social studies) were
prioritized, 12 teachers from those core disciplines were chosen. The remaining 3
openings were filled with health, physical education, and various electives. Lastly, grade
level was considered to ensure wide representation of teacher abilities across campus.

Table 3.1 shows the group details of the participants selected.

Table 3.1. *Participant Groups*

<table>
<thead>
<tr>
<th>Participant</th>
<th>Years of Experience</th>
<th>Discipline</th>
<th>Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angie</td>
<td>10+</td>
<td>Social Studies</td>
<td>11</td>
</tr>
<tr>
<td>Justin</td>
<td>10+</td>
<td>Health</td>
<td>9</td>
</tr>
<tr>
<td>Jane</td>
<td>10+</td>
<td>Foreign Language</td>
<td>9, 10, 11, 12</td>
</tr>
<tr>
<td>Katrina</td>
<td>10+</td>
<td>Social Studies</td>
<td>10, 11, 12</td>
</tr>
<tr>
<td>Maria</td>
<td>10+</td>
<td>English</td>
<td>9, 10</td>
</tr>
<tr>
<td>Tim</td>
<td>10+</td>
<td>English</td>
<td>11, 12</td>
</tr>
<tr>
<td>Samantha</td>
<td>10+</td>
<td>English</td>
<td>9, 10</td>
</tr>
<tr>
<td>Samuel</td>
<td>10+</td>
<td>English</td>
<td>9, 10</td>
</tr>
<tr>
<td>Allison</td>
<td>3-5</td>
<td>Science</td>
<td>9, 10, 11, 12</td>
</tr>
<tr>
<td>Sabrina</td>
<td>3-5</td>
<td>SPED</td>
<td>9, 10, 11, 12</td>
</tr>
<tr>
<td>Carol</td>
<td>3-5</td>
<td>Math</td>
<td>9, 10, 11, 12</td>
</tr>
<tr>
<td>Grant</td>
<td>3 or less</td>
<td>Math</td>
<td>11, 12</td>
</tr>
<tr>
<td>Penny</td>
<td>3 or less</td>
<td>Social Studies</td>
<td>11</td>
</tr>
<tr>
<td>Angela</td>
<td>3 or less</td>
<td>Science</td>
<td>9</td>
</tr>
<tr>
<td>Cameron</td>
<td>3 or less</td>
<td>Social Studies</td>
<td>11, 12</td>
</tr>
</tbody>
</table>

After participants were selected, they were provided with a consent form, (see Appendix C). Once all participants completed the consent form, they were notified via email and sent a Google Invite to attend all three of the afterschool face-to-face meetings. Face-to-face meetings were called teacher swap meetings and took place on campus, after-school, in my classroom. During the in-person teacher swap meetings teachers were provided with snacks and opportunities to share and collaborate which is discussed in more detail in the innovation section of this chapter. Beyond the three face-to-face meetings, participants interacted online via Google Classroom. All participants are
provided, from the district, a desktop in their classrooms and Chromebooks to use throughout campus. Teachers are also allowed to take their district issued Chromebook back and forth between school and home. This technology allowed teachers access to the online materials virtually anywhere.

**Innovation**

Studies have shown that blending online with face-to-face environments for PD can help raise teacher competence levels, reinforce their classroom practices’, satisfy the needs of PD, as well as increase student outcomes (Clarke, 2009; Meneses, Fabregues, Rodriguez-Gomez, & Ion, 2012; Zahner, 2012). The blended collaborative community for PD at Pine Hill High School consisted of three two-week modules in a six-week blended collaborative PD. The overall topic for the six-week blended collaborative PD was PGW. PGW is one of the key elements of the Pine Valley High School District (PVUSD) Instructional Rubric (see Appendix H) which is aligned to the district's instructional initiatives for best classroom practices. More detail on district initiatives can be found in the local context section of chapter 1. The goal of this innovation was to increase teacher efficacy, collective efficacy, and collaboration.

**Innovation and Learning Theories**

This research aimed to understand teacher efficacy, collective teacher efficacy, and collaboration from participation in a blended and collaborative form of PD. In order to create the innovation, social constructivist theories were studied and applied. These theories include Vygotsky’s Sociocultural Theory, Bandura’s Social Learning Theory, and Knowles Adult Learning Theory.
According to Vygotsky, learning has its basis in interacting with other people. Once learning has occurred, information is integrated on an individual level. An important concept in Sociocultural Theory is the zone of proximal development (ZPD). According to Vygotsky, ZPD is the distance between the actual developmental level and the level of potential development. Developmental levels increase through problem-solving under guidance or in collaboration with more capable peers. The innovation in this study used maximum variation sampling a form of purposive sampling to allow selection of participants with various levels of ZPD. Having varying levels of expertise in participants created the ability for learning from one another. The innovation also followed the four-stage system created by Tharpe and Gallmore (1988) which includes: (a) assistance by one more capable, (b) assistance alone, (c) practice, and (d) repeat. Participants read academic material on different strategies each week, were encouraged to watch videos of experts, practice the strategy, discuss their implementation, and repeat the cycle with different topics associated with PGW.

Social Learning Theory combines Cognitive Learning Theory, which imagines that learning is influenced by psychological factors, and behavioral learning, and assumes that learning is based on responses to a learner's surroundings. Psychologist Albert Bandura integrated these two theories in an approach called Social Learning Theory and identified four requirements for learning: (a) observation (environmental), (b) retention (cognitive), (c) reproduction (cognitive), and (d) motivation (both). Bandura noted that external, environmental reinforcement were not the only factor to influence learning and behavior. He labeled intrinsic reinforcement as a form of internal rewards, such as pride, satisfaction, and a sense of accomplishment. He later identified this as efficacy. The
innovation in this action research, attempted to increase teacher self and collective
efficacy by creating blending online and face-to-face opportunities for teachers to
participate in social learning. The innovation also attempted to encourage attention,
retention, reproduction, and motivation in order to improve participant’s sources of
efficacy which is discussed in more detail below. The online materials and discussions, as
well as the face-to-face meetings provided participants with chances to learn socially and
observationally.

The final learning theory used to create the innovation for this action research is
Adult Learning Theory, also known as andragogy. Adult Learning Theory was proposed
by Knowles in 1968. Knowles recognized that there are many differences in the ways that
adults learn as opposed to children. Knowles (1980) identified five assumptions that
teachers should make about adult learners: (a) self-concept, (b) prior learning
experiences, (c) practical reasons to learn, and (d) internal motivation. These four
assumptions were used to build the innovation for this action research. Since adults are
self-directed learners, they should have a say in the content they wish to learn therefore
teachers were surveyed on the topics they wished to study. Due to the prior knowledge of
adults, they were asked throughout the innovation to share their past experiences both
online and face-to-face. The content chosen was directly related to district initiatives that
can impact classroom instruction and teacher observations. Lastly, the learning was
centered on solving problems and struggles with the implementation of PGW.

Sociocultural Theory, Social Learning Theory, and Adult Learning Theory were
each studied and embedded into the blended collaborative PD in this action research. The
theories were interwoven throughout the PD in order to effect self- and collective teacher
efficacy by building relationships among participant and encourage sharing, practice, and reflection.

**Innovation Design**

Throughout the six-week blended collaborative PD teachers participated in both online and face-to-face activities. The six-week innovation was broken down into three modules. Each module focused on two to three elements of PGW from the PVUSD instructional rubric. Table 3.2 provides a detailed timeline of the environment, methods, and goals of the innovation.

<table>
<thead>
<tr>
<th>Module</th>
<th>Method</th>
<th>Instructional Element(s)</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Meeting (Week 0)</td>
<td>Teacher Swap Meeting 1</td>
<td></td>
<td>Teacher Swap Agenda (see Appendix I) PVUSD Instructional Rubric (see Appendix H) Fisher, Frey, &amp; Everlove, 2009</td>
</tr>
<tr>
<td>Module 1 (Weeks 1-2)</td>
<td>Google Classroom</td>
<td>Providing a Task that Reflects the Learning Goal Providing a Complex Task</td>
<td>Online Agenda (see Appendix I)</td>
</tr>
<tr>
<td>Module 2 (Weeks 3-4)</td>
<td>Google Classroom</td>
<td>Grouping Students Purposefully Monitoring for Content, Language, Skills Designing Opportunities for Students to Reflect</td>
<td>Online Agenda (see Appendix I)</td>
</tr>
<tr>
<td>Mid Meeting (Week 3)</td>
<td>Teacher Swap Meeting 2</td>
<td></td>
<td>Teacher Swap Agenda (see Appendix J)</td>
</tr>
<tr>
<td>Module</td>
<td>Method</td>
<td>Instructional Element(s)</td>
<td>Materials</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Module 3</td>
<td>Google Classroom</td>
<td>Targeting Instruction for Identified Student Needs Using Questions, Cues. Prompts</td>
<td>Online Agenda (see Appendix J)</td>
</tr>
<tr>
<td>(Weeks 5-6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>Teacher Swap</td>
<td></td>
<td>Teacher Swap Agenda (see Appendix J)</td>
</tr>
<tr>
<td>Meeting</td>
<td>Meeting 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Week 6)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following section describes the blended aspects and the collaborative aspects of the innovation.

**Blended Form.** Below is a detailed description of the blended aspects of the innovation which included online discussions and face-to-face meetings.

**Online resources via Google Classroom.** The online aspect of the blended collaborative PD took place on Google Classroom (see Figure 3.2). During the online modules, participants were asked to read from the provided book *Productive Group Work: How to Engage Students, Build Teamwork, and Promote Understanding* (Frey, Fisher, & Everlove, 2009). Participants were provided with additional supplemental materials (see Appendix I). The materials for each module were tied to an element of the PVUSD instructional rubric (see Appendix H). Each week, after participants engaged in the materials, they were asked to answer a discussion question(s) in Google Classroom and respond to two other participants’ posts (see Appendix I).
Face-to-face teacher swap meeting. Throughout the six-weeks there were three, one-hour, face-to-face teacher swap meetings. Teacher swap meetings took place after-school, on campus, in my classroom. The first teacher swap meeting took place the week before the innovation began in order to pass out materials, introduce participants, go over the expectations of the PD, and collect consent forms. The second meeting took place at the end of the third week and the final meeting took place at the end of the last week. During each teacher swap meeting participants signed-in in order to get paid and participated in several activities (see Appendix I).
Collaborative Form. Below is a detailed description of the collaborative aspects of the innovation which included discussions in Google Classroom and meeting face-to-face during teacher swap meetings.

Online resources via Google Classroom. Collaboration online occurred within Google Classroom. Participants were asked to share and discuss their personal feelings and experiences. Each week participants were expected to read a chapter of the provided book along with reading and watching any supplemental materials. After, participants answered three to four discussion questions and responded to at least two of their peers. Having participants post and respond to online discussions allowed for more opportunities to collaborate beyond face-to-face teacher swap meetings or other times they may run into each other on campus. The weekly discussion questions were created to align with the topic of the week and the materials. The questions were open ended and intended to elicit participant’s experiences and attitudes. See Table 3.3 for weekly discussion questions. While the innovation did not have built in opportunities for peer observations, participants were encouraged to engage in peer observations via an open door sign up in Google Classroom.

Table 3.3 Weekly Online Discussion Questions

<table>
<thead>
<tr>
<th>Week</th>
<th>Discussion Questions</th>
</tr>
</thead>
</table>
| 1    | - When you are planning your syllabus for the semester or year, how do you decide which topics, themes, or projects will lend themselves to group work in your content?  
- How do you communicate or explain the objectives for the group task and define any relevant concepts to students (orally, in writing, by providing examples)?  
- How do you identify prerequisite skills students will need to successfully accomplish a specific project or task?  
- When and how you teach students these skills? |
<table>
<thead>
<tr>
<th>Week</th>
<th>Discussion Questions</th>
</tr>
</thead>
</table>
| 2    | - Are there general skills students need to learn and practice in order to work productively in groups, regardless of the task or product (ex. active listening, helping one another master content)?  
     - Are there team building activities you do to help students when they are getting started with group work?  
     - How do you create tasks that require interdependence in which students are responsible to and dependent on others in the group?  
     - How do you ensure that there is a fair division of labor for each member?  
| 3    | - How do you organize students into groups? What do teachers with large numbers of English learners need to think about when organizing groups?  
     - How do you help groups devise a plan of action (who will be doing what and when)?  
     - What kinds of rewards or encouragement do you use to support or motivate students working in groups?  
     - Do students have opportunities to work together face-to-face as well as online?  
| 4    | - How do you ensure there is a fair division of labor for each member?  
     - How do you differentiate group tasks to ensure students are working at standards while accounting for differences in language and literacy skills?  
     - For tasks that projects that span a number of days or weeks, what process do you use to check progress?  
| 5    | - How do students deal with uncooperative members and manage conflict?  
     - How do you assess students’ feelings about working in groups—particularly their prior experiences with group work and whether those experiences were positive or negative?  
     - How do you deal with students who would rather work alone?  
     - What happens when a group is not working out?  
| 6    | - How is group work evaluated (by the teacher, the group, and individuals)?  
     - Does the evaluation include both the quality of the product and the effectiveness of the group?  
     - How do you communicate the grading system to students?  
     - Is there group work that is not formally evaluated? If yes, what feedback or assessments are used for this type of group work?  

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**Face-to-face teacher swap meeting.** Collaboration offline occurred during face-to-face teacher swap meetings where participants were asked to practice and discuss different strategies from the PD. During the six-week innovation there were three, one-hour, face-to-face teacher swap meetings. These meetings were designed to encourage in-person collaboration. To foster collaboration, each meeting was structured and planned in a way to specifically build relationships and provide opportunities to practice and discuss strategies from the weekly materials. Each meeting began with a team building activity to support relationships among participants. Ostwon et al., (2008) found that building relationships was key to creating successful blended PD opportunities. Similarly, relationships are the foundation for increasing collective efficacy among school staff (Dede et al., 2009). Each meeting also had participants practice a structured student talk routine from the book. For example, during the first teacher swap meeting participants practiced a think, pair, write, and share. On a note card, they were asked to write their own definition of PGW. Then as music played, they walked around the room, when the music stopped, they had to pair up with the person next to them and share their definitions, the cycle repeated for a few rounds. This modeled a strategy they could use in their classroom with content that was relevant to the PD. The goal of the teacher swap meetings was to build relationships in person in order to have stronger more connected discussions online.

**Innovation and Effective Professional Development**

Six elements of effective PD were discussed in the literature review these include: (a) duration, (b) focused on content and pedagogy, (c) goal orientated, (d) job-
embedded, (e) active learning, and (f) teacher collaboration. These characteristics of effective PD were thoughtfully inserted into the blended collaborative PD.

Garet et al., (2001), established that when PD is delivered over a significant amount of time teachers are more likely to implement. For this reason, a 6-week duration was chosen to conduct the blended collaborative PD. The blended collaborative PD was designed around one district initiative, PGW, which is not specific to any one content area. Instead PGW, focuses on strategies that can be used across curriculums to support content and student learning. The provided resources and materials attempted to deliver examples from various content areas thus focusing on various contents and pedagogies.

Loucks-Horsley (1995) suggested that PD should focus on school or district goals in order to align best teaching practices on campus. Each year, teachers at Pine Hill High School are asked to vote on which element of the district rubric to focus on. Over 75% of teachers chose to focus on PGW, therefore the decision was made to focus the PD on this topic. Sparks and Hirsh (1997) recommend that PD be job-embedded. The blended collaborative PD took place both on and offline which allowed teachers to complete activities during the work-day. Participants received three hours of pay for attending each after-school teacher swap meeting. Through the interactions with their peer’s participants were able to situate their learning (Putnam & Borko 1997).

The final two characteristics of teacher PD have to do with active learning and collaboration. Active learning and collaboration were major considerations during the creation of the innovation. Active learning is closely related to constructivist theories of learning and suggests learners construct knowledge through personal interpretations (Berger & Luckman, 1966). The blended collaborative PD provided multiple
opportunities for participants to read, watch, and observe elements of PGW. Participants were able to discuss past, present, and future attempts at implementing PGW via online discussion posts and during Teacher Swap Meetings. For example, during module two participants focused on purposeful groupings and strategies for monitoring group work. That week, discussion questions focused on reflecting on participants current practices when grouping and monitoring PGW (see Appendix J). Through the online discussions’ participants shared their current practices and responded to their peers to gain new insights and ideas. Participants were also able to see that others may be struggling or succeeding in their implementation. The online activities were designed to create a space for teachers to talk about what they were currently doing. While the face-to-face meetings were intended for participants to share how new strategies gained from the readings were being implemented.

Most importantly, effective teacher PD provides opportunities for collaboration. Collaboration for effective PD has to do with the interaction’s teachers have with their colleagues about instruction and change in classroom practice (Borko, 2004). While collaboration can take many informal and formal forms for this innovation participant selection was important in creating a space for collaboration amongst varying levels of experience and areas of expertise. By using maximum variation sampling, I was able to guarantee multiple levels of ZPD were present. This helped create online and offline discussions which were rich in experience and proficiency levels.

All the characteristics of effective PD were considered and inserted where necessary in the blended collaborative PD. Table 3.4 shows how the characteristics of effective PD and their alignment to the innovation.
Table 3.4. *Innovation and Characteristics of Effective PD*

<table>
<thead>
<tr>
<th>Characteristic of Effective PD</th>
<th>Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>• Occurred over 6-weeks</td>
</tr>
</tbody>
</table>
| Focused on Content and Pedagogy| • Multiple resources/materials/examples provided  
|                               | • Modeled strategies during teacher swap meetings |
| Goal Orientated               | • Focused on school initiatives  
|                               | • Involved teacher voice/choice |
| Job-Embedded                  | • Built into work day  
|                               | • Worked with site colleagues |
| Active Learning               | • Questions designed for sharing and reflecting on personal experiences  
|                               | • Encouraged classroom observations |
| Teacher Collaboration         | • Teachers with various levels of ZPD  
|                               | • Opportunities to collaborate online  
|                               | • Opportunities to collaborate face-to-face |

**Innovation and Self Efficacy**

In many ways, the learning modules will follow the four sources of efficacy as identified by Bandura (1997): (a) mastery experiences, (b) vicarious experiences, (c) social persuasion, and (d) emotional and physiological cues. Bandura’s four sources of efficacy come from his Social Cognitive Theory which emphasizes how cognitive, behavioral, personal, and environmental factors interact to determine one’s motivation and behavior. Ultimately, these sources affected efficacy, the belief in our ability to successfully complete a task. Bandura’s sources of efficacy were used to develop the blended collaborative PD. Different aspects of the innovation provided opportunities for each source to grow. To better understand how each source contributes to efficacy see Figure 3.2.
Figure 3.2. How the sources of efficacy contribute to effective behaviors. Adapted from Bandura, A. (1997). Efficacy: The exercise of control.

The blended collaborative form of PD can lead to mastery experiences as participants were motivated and interested in changing their practice. As participants work their way through the other three efficacy sources, they develop a stronger sense of efficacy (Bandura, 1997). In the end, performing a task successfully strengthens teacher’s efficacy, but while failing to deal with the task weakens efficacy. By breaking down the innovation into smaller modules participants were able to take a more incremental look into the implementation of PGW. With vicarious experiences participants were introduced to the theoretical and pedagogical evidence for effective instructional strategies related to PGW. The online materials and resources provided each week offered participant’s opportunities to focus on the content and pedagogy of implementation in order to gain confidence. When participants read about the effectiveness of instructional strategies and watched effective implementation it intended
to build their sense of efficacy. Social persuasion was found in the online discussion forums. The forums provided participants a place to share their experiences. The online forum became a place for sharing information gleaned from the week’s materials; while reflecting on past, present, and future implementation. The forums served as arenas for virtual pep talks to encourage others to try various instructional strategies. During each face-to-face meeting there were opportunities for participants to vent or rejoice in a collaborative environment. This created space for emotional and physiological cues which was vital to developing Bandura’s fourth source. Each source does not have to occur in consecutive order and participants move from vicarious experiences to emotional and physiological cues or vice versa. Ultimately, the three sources—built confidence in order to build capacity and encourage mastery experiences. Table 3.5 shows of Bandura’s sources of efficacy are aligned to activities in the innovation.

Table 3.5. *Innovation and Sources of Efficacy*

<table>
<thead>
<tr>
<th>Sources of Efficacy</th>
<th>Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery Experiences</td>
<td>• Implementation of PGW</td>
</tr>
<tr>
<td>Vicarious Experiences</td>
<td>• Reading and watching provided materials</td>
</tr>
<tr>
<td></td>
<td>• Answering online discussion questions</td>
</tr>
<tr>
<td></td>
<td>• Responding to peers online</td>
</tr>
<tr>
<td></td>
<td>• Modeling strategies during teacher swap meetings</td>
</tr>
<tr>
<td>Social Persuasion</td>
<td>• Sharing experiences and materials in online discussion posts and responses</td>
</tr>
<tr>
<td>Emotional and Physiological Cues</td>
<td>• Sharing experiences and materials in online discussion posts and responses</td>
</tr>
<tr>
<td></td>
<td>• Team building during teacher swap meetings</td>
</tr>
</tbody>
</table>
Innovation and Collective Efficacy

As discussed above, there are several approaches to impact teacher efficacy including Bandura’s four sources of efficacy. Tschannen-Moran and Hoy (2004) discussed how Bandura’s sources can also impact collective teacher efficacy. Bandura (1993), demonstrated a direct link from the effect of collective teacher efficacy on student outcomes. The strong relationship between collective teacher efficacy and student achievement can be linked to group goal attainment (Goddard & Hoy, 2004). Research by Little and Madigan (1997) has shown that collective efficacy is a strong predictor of group effectiveness. Therefore, the power of collective teacher efficacy can influence organizations climate, culture, and outcomes. The influence is directly tied to the group’s ability to build trusting relationships to have diligence and resolve to reach group goal attainment.

The innovation attempted to increase teacher efficacy on the instructional strategies associated with PGW. As participants partook in the six-week blended collaborative PD, opportunities existed to increase Bandura’s sources of efficacy as participants worked toward achieving the group goal of learning and implementing more effective PGW. Therefore, the same items that were built into the PD to impact efficacy should also impact collective efficacy. To encourage participants to openly and honestly engage in dialogue and reflection both online and in-person participants needed to build relationships. For that reason, team building activities were structured into each teacher swap meeting.
Data Collection and Sources

A variety of sources were used to inform the results of this study, including (a) survey instruments, (b) participant interviews, (c) participant created artifacts. Each data collection method is described and aligned to the research questions. In table 3.6, a brief overview of each research question and their data source is provided.

Table 3.6. Research Questions and Data Sources

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1: How and to what extent does teacher efficacy change with participation in a</td>
<td>• Teachers’ Sense of Efficacy Scale</td>
</tr>
<tr>
<td>blended, collaborative form of professional development?</td>
<td>• Semi-Structured Participant Interviews</td>
</tr>
<tr>
<td></td>
<td>• Discussion Posts and Responses</td>
</tr>
<tr>
<td></td>
<td>• Teacher Swap Meeting Reflections</td>
</tr>
<tr>
<td></td>
<td>• Researcher Journal</td>
</tr>
<tr>
<td>RQ2: How and to what extent does collective teacher efficacy change with</td>
<td>• Collective Teacher Belief Scale</td>
</tr>
<tr>
<td>participation in a blended, collaborative form of professional development?</td>
<td>• Semi-Structured Participant Interviews</td>
</tr>
<tr>
<td></td>
<td>• Discussion Posts and Responses</td>
</tr>
<tr>
<td></td>
<td>• Teacher Swap Meeting Reflections</td>
</tr>
<tr>
<td></td>
<td>• Researcher Journal</td>
</tr>
<tr>
<td>RQ3: How does participation in a blended, collaborative form of professional</td>
<td>• Discussion Posts and Responses</td>
</tr>
<tr>
<td>development affect collaboration amongst participants?</td>
<td>• Teacher Swap Meeting Reflections</td>
</tr>
<tr>
<td></td>
<td>• Semi-Structured Participant Interviews</td>
</tr>
<tr>
<td></td>
<td>• Researcher Journal</td>
</tr>
</tbody>
</table>
Teachers’ Sense of Efficacy Scale

This study used the Teachers’ Sense of Efficacy Scale (TSES) (see Appendix E) developed by Tschannen-Moran and Hoy (2001). The TSES was developed in conjunction with current and former researchers who developed items that “represented important tasks or elements of teaching” (Tschannen-Moran & Hoy, 2001, p. 796). The instrument has been widely used in the education field to assess teacher competence of using a variety of instructional and assessment strategies in their teaching content (Bandura, 1993; Goddard, 2001; Goddard, Goddard, & Sweetland 2000). The TSES is a quantitative data tool that consists of twelve-items on a nine-point Likert-type scale with anchors at 1, 3, 5, 7, and 9, and range from ‘nothing’ to ‘a great deal’. TSES items assess teachers’ perceived capabilities to respond to difficult questions from students, develop appropriate challenges for capable students, gauge student comprehension, use a variety of assessment strategies and craft good questions from students. The TSES is comprised of three subscales: (a) student engagement, (b) instructional strategies, (c) classroom management. Subscales are nonconsecutively aligned to questions. Efficacy in student engagement: items 2, 4, 7, 11; efficacy in instructional strategies: items 5, 9, 10, 12, and efficacy in classroom management: items 1, 3, 6, 8. Table 3.7 shows the questions aligned to each subscale.

Items in the student engagement subscale ask teachers to what extent they can impact student value in learning. Items from the instructional strategies’ subscale ask teachers to evaluate their capabilities to enact a strategy rather than capability to use a strategy to attain a student outcome or simply to attain an outcome. Items in the classroom management subscale of the TSES ask teachers to what extent they can
achieve a specific behavioral or attitudinal outcome. There is a focus on controlling disruptive behavior versus a focus on classroom management routines and structures. In all cases, the strategies by which teachers would achieve the outcomes are not mentioned. Throughout the innovation, participants were exposed to practices that could impact each subscale in the TSES student engagement, instructional strategies, and classroom management.

Table 3.7. TSES Subscales and Aligned Questions

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Aligned Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Engagement</strong></td>
<td>2. How much can you do to motivate students who show low interest in school work?</td>
</tr>
<tr>
<td></td>
<td>4. How much can you do to help your student’s value learning?</td>
</tr>
<tr>
<td></td>
<td>7. How much can you do to get students to believe they can do well in school work?</td>
</tr>
<tr>
<td></td>
<td>11. How much can you assist families in helping their children do well in school?</td>
</tr>
<tr>
<td><strong>Instructional strategies</strong></td>
<td>5. To what extent can you craft good questions for your students?</td>
</tr>
<tr>
<td></td>
<td>9. To what extent can you use a variety of assessment strategies?</td>
</tr>
<tr>
<td></td>
<td>10. To what extent can you provide an alternative explanation or example when students are confused?</td>
</tr>
<tr>
<td></td>
<td>12. How well can you implement alternative teaching strategies in your classroom?</td>
</tr>
<tr>
<td><strong>Classroom Management</strong></td>
<td>1. How much can you do to control disruptive behavior in the classroom?</td>
</tr>
<tr>
<td></td>
<td>3. How much can you do to calm a student who is disruptive or noisy?</td>
</tr>
<tr>
<td></td>
<td>6. How much can you do to get children to follow classroom rules?</td>
</tr>
<tr>
<td></td>
<td>8. How well can you establish a classroom management system with each group of students?</td>
</tr>
</tbody>
</table>
The survey was administered during the first and last week of the six-week innovation. The results of the survey were analyzed for a change in teacher efficacy alongside the other data sources.

**Collective Teacher Belief Scale**

This study used the Collective Teacher Belief Scale (CTBS) (see Appendix F) developed by Tschannen-Moran and Barr (2004). The CTBS was developed as an adaptation of the TSES (Tschannen-Moran & Hoy, 2001). The CTBS consists of twelve-items on a nine-point Likert-type scale anchors at 1, 3, 5, 7, and 9, and ranging from ‘nothing’ to ‘a great deal’. The twelve-item scale represents two dimensions of collective teacher efficacy: instructional strategies and student discipline. The two dimensions are consecutively asked. Questions 1-6 are in regard to instructional strategies while question 7-12 relate to student discipline.

Researchers Goddard and Hoy (2004) posit that group goal attainment and a sense of collective efficacy in a school can affect teachers’ self-referent thoughts in turn impacting their teaching performance and student learning within the organization as a whole. The questions in CTBS ask teachers to perceptions of collective efficacy rather than their personal efficacy beliefs and have been shown to help identify characteristics associated with improved collective teacher efficacy and may be helpful in the development of effective schools (Tschannen-Moran & Barr, 2004).
Table 3.8. *CTBS Subscales and Aligned Questions*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Aligned Questions</th>
</tr>
</thead>
</table>
| Instructional Strategies | 1. How much can teachers in your school do to produce meaningful student learning?  
2. How much can your school do to get students to believe they can do well in schoolwork?  
3. How much can teachers in your school do to help student’s master complex content?  
4. How much can teachers in your school do to promote deep understanding of academic concepts?  
5. How much can teachers in your school do to help students think critically?  
6. How much can your school do to foster student creativity? |
| Student Discipline     | 7. To what extent can teachers in your school make expectations clear about appropriate student behavior?  
8. To what extent can school personnel in your school establish rules and procedures that facilitate learning?  
9. How well can teachers in your school respond to defiant students?  
10. How much can school personnel in your school do to control disruptive behavior?  
11. How well can adults in your school get students to follow school rules?  
12. How much can your school do to help students feel safe while they are at school? |

The survey instrument was administered during the first and last week of the six-week innovation. The data collected was analyzed along with the results of other data sources.

**Semi-Structured Participant Interviews**

This study attempted to bring forth participants perspectives on the effect of the collaborative blended communities for PD on participants self and collective efficacy. Therefore, semi-structured interviews are the most appropriate method to collect additional data (Creswell, 2003). The semi-structured interview questions were created
by the researcher alongside the TSES and CTBS in order to get a better understanding of the innovations impact on teacher self and collective efficacy. Participant interviews are one of the most widely used methods to collect data in qualitative action research; interviews are particularly useful in uncovering the story behind a participant’s experiences (Doody & Noonan, 2013). Researchers can follow a line of questions to gain information about a topic, or further explore responses or findings.

I conducted eight individual interviews, which lasted 45-60 minutes, at the end of the six-week innovation. Eight participants were selected to participate in the semi-structured interview. In order to get a range of participant perspectives, interview participants were purposively chosen (Creswell, 2014) based on the overall participant criteria of years of experience, discipline, and grade level taught. Two participants with less than five years from various disciplines, four participants with ten or more years of experience from various disciplines, and two participants with between five and ten years of experience. Table 3.10 shows the list of purposively selected participants. The semi-structured interview protocol (Appendix F) was used to conduct the interview. Questions for the semi-structured interview protocol was initial developed based on research for the innovation. An initial list of thirty questions was developed and discussed with my dissertation chair. Through the conversation, the list was narrowed down to twenty open ended questions that focused on the experiences of the participants. There was a combination of direct and indirect questions in order to elicit longer answers from participants. Semi-structured interviews allow for variation in the order and phrasing of the interview protocol and questions (Creswell, 2003). This allows the research to ask probing questions to participants when appropriate in order to gain a better understanding
of their answers (Creswell, 2003). In table 3.9, the participant interview questions are aligned to the research. The data collected from the participant interviews was analyzed to find emerging themes and relationships between efficacy, collective efficacy, and collaboration to further understand the impact of the innovation.

Table 3.9. Semi-Structured Interview Participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Years of Experience</th>
<th>Discipline</th>
<th>Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angie</td>
<td>10+</td>
<td>Social Studies</td>
<td>11</td>
</tr>
<tr>
<td>Jane</td>
<td>10+</td>
<td>Foreign Language</td>
<td>9, 10, 11, 12</td>
</tr>
<tr>
<td>Katrina</td>
<td>10+</td>
<td>Social Studies</td>
<td>10, 11, 12</td>
</tr>
<tr>
<td>Samuel</td>
<td>10+</td>
<td>English</td>
<td>9, 10</td>
</tr>
<tr>
<td>Allison</td>
<td>3-5</td>
<td>Science</td>
<td>9, 10, 11, 12</td>
</tr>
<tr>
<td>Sabrina</td>
<td>3-5</td>
<td>SPED</td>
<td>9, 10, 11, 12</td>
</tr>
<tr>
<td>Grant</td>
<td>3 or less</td>
<td>Math</td>
<td>11, 12</td>
</tr>
<tr>
<td>Penny</td>
<td>3 or less</td>
<td>Social Studies</td>
<td>11</td>
</tr>
</tbody>
</table>

Table 3.10. Semi-Structured Interview Questions Alignment

<table>
<thead>
<tr>
<th>Interview Questions</th>
<th>Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How would you describe your teaching philosophy? Tell me about how you feel you are making a difference in your students’ achievement?</td>
<td>• Teacher efficacy</td>
</tr>
<tr>
<td>2. How do think your teaching skills match your job expectations? What are the parts of teaching you find most challenging? How did your teacher training prepare you? What areas of teaching weren’t you prepared for in your training?</td>
<td>• Teacher efficacy</td>
</tr>
<tr>
<td>3. How do you know when you are being a successful teacher? When you think about your teaching, whom do you feel most responsible to in your job?</td>
<td>• Teacher efficacy</td>
</tr>
<tr>
<td>4. What leads to change in one's own professional practice to enhance student learning?</td>
<td>• Teacher efficacy         • Collective Teacher Efficacy</td>
</tr>
</tbody>
</table>
5. Engagement is often inferred by the level and depth of the knowledge and skills shared in online environments, it requires that you put forth continual effort and contribute and connect to the professional development, including both taking and giving knowledge, at deep and profound levels that go beyond the surface. Based on this definition, how would you rate your engagement level in the online environment?

6. What, if anything, did you gain by participating in the professional development community?

7. Are there drawbacks from participating in the professional development community?

8. Teacher efficacy is defined as the extent to which teachers believe they can affect student learning. How, if at all, has your sense of teacher efficacy changed as a result or your involvement in the professional development community? Please explain.

9. How, if at all, has your involvement in the professional development community enhanced student learning?

10. What role, if any, does motivation play in changing a teacher’s sense of teacher efficacy, implementation of curricular change, and involvement in professional development community activities?

11. What is it about your school that gives you the most pride? What types of support do you think your school affords teachers? What types of support do you think a school district should afford teachers?
<table>
<thead>
<tr>
<th>Interview Questions</th>
<th>Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. How would you characterize the teachers’ ability and desire to collaborate with each other? Why is this important (or not)?</td>
<td>Collaboration</td>
</tr>
<tr>
<td>13. How would you describe the participation of others in the professional development community?</td>
<td>Teacher efficacy, Collective Teacher Efficacy, Collaboration</td>
</tr>
<tr>
<td>14. How comfortable were you with sharing dilemmas and/or contributing your opinions with the group?</td>
<td>Collective Teacher Efficacy, Collaboration</td>
</tr>
<tr>
<td>15. Did you feel that you were engaged with your fellow professional development community members? In what ways? If not, why?</td>
<td>Collective Teacher Efficacy, Collaboration</td>
</tr>
<tr>
<td>16. Did you feel like you were forming a community throughout your participation in this form of professional development? Prompt: Would you characterize yourself as a —team player? If so (or not) tell me more… Prompt: As a teacher, what activities occur that require you to collaborate with colleagues? How do they impact your teaching?</td>
<td>Collective Teacher Efficacy, Collaboration</td>
</tr>
<tr>
<td>17. For you, is there a difference in the way you interacted in the online professional development community versus the face-to-face interactions with the other participants?</td>
<td>Collaboration</td>
</tr>
<tr>
<td>18. Would you continue working and collaborating in different professional development communities using this format?</td>
<td>Collaboration</td>
</tr>
<tr>
<td>19. How has participating in the professional development community affected your: 1. Lesson planning/development? 2. Teaching practice in your classroom?</td>
<td>Teacher efficacy</td>
</tr>
<tr>
<td>Interview Questions</td>
<td>Alignment</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>20. What, if anything can be done to improve the following:</td>
<td>• Collective Teacher Efficacy</td>
</tr>
<tr>
<td>a. Communication in the professional development community?</td>
<td>• Collaboration</td>
</tr>
<tr>
<td>b. Collaboration in the professional development community?</td>
<td></td>
</tr>
</tbody>
</table>
Collaborative Blended Professional Development Artifacts

Artifacts from the blended collaborative form of professional development were collected from both online and offline sources. Online sources included discussion posts and responses. While face-to-face artifacts included teacher responses to the Teachers’ Sense of Efficacy Scale, Collective Teacher Belief Scale, and teacher swap meeting reflections. A researcher journal was also kept to collect anecdotal, and descriptive statistics of both online and face-to-face participation.

Online

Artifacts collected from the online aspect of the blended collaborative form of professional development included participant discussion posts and peer responses. Online artifacts will be used as both quantitative and qualitative data sources.

Quantitative. At the end of each week, engagement data were collected from the online Google Classroom and kept in the researcher journal. Each week, the descriptive statistics collected included which participants posted an initial discussion and how many times they responded to their peers. At the end of six-week innovation the descriptive statistics were copied into a Microsoft Excel Spreadsheet.

Qualitative. At the end of each week, all discussion posts and responses were copied and pasted into a private Microsoft Word Document. The Word Document had a table for each week. The top row showed the weeks discussion questions and below there was a row for each participant’s initial discussion post. Any responses to the initial post were kept below. In order to differentiate initial posts from responses, the names of participants were highlights in purple. The highlight meant the response was their initial
weekly discussion post. The Microsoft Word Document continued with tables for each week's online discussion. See Figure 3.3.

<table>
<thead>
<tr>
<th>Week 3 Questions:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How do you organize students into groups? What do teachers with large numbers of English learners need to think about when organizing groups?</td>
<td></td>
</tr>
<tr>
<td>2. How do you help groups devise a plan of action (who will be doing what and when)? What kinds of rewards or encouragement do you use to support or motivate students working in groups?</td>
<td></td>
</tr>
<tr>
<td>3. Do students have opportunities to work together face-to-face as well as online?</td>
<td></td>
</tr>
</tbody>
</table>

**Katrina**

1. I usually let them choose their groups but sometimes I choose their groups for them at random. I know this is not the best way to do this though. I like to let them choose their groups because then I know almost for certain that they will feel comfortable working in their groups. Again, I know this is not the best and I am currently putting together a survey for my classes to complete that should give me an idea of their English level and their comfort working in groups. I plan to group them so that students will vary in their English levels and comfort level. I suppose that teachers with large numbers of ELs need to think about their varying levels of English proficiency and group them so there are varying levels within each group.

2. I generally give them a list of things to do in the order that I think is best. I currently do not assign roles to my students when they work in groups but will do so in the near future. I generally reward them with points and encourage them face-to-face, verbally depending on what is going on.

3. My students are encouraged to work together face-to-face every day multiple times throughout the lesson. Most of them do it but not all of them. Most of them discuss what I’ve asked them to discuss but some of them get off topic. It currently is not a very structured process and there is little to no accountability. I need to reorganize some of my seating charts so that my students are all next to someone with whom they can easily converse.

**Angie**

E-Schools will hopefully have a feature where the ELL levels and student course grades can formulate algorithms that fill in the appropriate seating locations for groups of 4, but until then its randomly first placing a high achieving student then a ELL’s and academically low students. I usually have 3 spreadsheets 1 of the ELL’s listed by their course grade.

---

**Figure 3.3. Weekly Discussion Post Collection**

**Face-to-Face**

During teacher swap meetings attendance was collected. Participants also participated in various collaborative activities to further their understanding of PGW (see appendix J). At the first and last teacher swap meetings participants completed teacher swap meeting reflections about their participation. The pre teacher swap meeting reflection asked participants what they knew about PGW and what they wanted to take away from the PD. The post teacher swap meeting reflection asked participants a set of reflection questions about their learning during the PD along with the process of
participating. During the mid-meeting they were asked in advance to contribute to an existing Google Slide Deck. On one slide, participants shared a strategy, tip, or trick they have learned and implemented in their classroom from the materials and/or other participants in the collaborative online community. Artifacts from the face-to-face meetings were used as both quantitative and qualitative data.

**Quantitative.** Attendance was taken at each teacher swap meeting and kept in the researcher journal. Attendance was the only source of descriptive statistics collected from the teacher swap meetings.

**Qualitative.** The participant’s pre- and post- reflections from the first and last meeting were collected and directly transcribed into a Microsoft Excel Spreadsheet. The hard copies of each reflection were kept in a locked filing cabinet in my classroom. During the mid-meeting the tip, trick, or strategy shared by participants was recorded in the researcher journal. The collaborative Google Slide deck were participants shared their tip, trick, or strategy was printed, downloaded and saved on my personal device.

**Researcher Journal**

A researcher journal was kept in order to have a place to record the research process and my thoughts. A journal can make sure you don’t lose any valuable thinking you’ve had throughout the action research. The researcher journal held reflections, reports from conversations or meetings, discussions of problems that occurred throughout data collection or analysis, and quantitative evidence of online postings and attendance. The researcher journal can help improve rigor and trustworthiness by helping to provide thick, rich descriptions (Mertler, 2017). For this study, the researcher journal, a white
spiral notebook, was either locked in my desk or kept in the bag I take to and from school.

Data Analysis

This study analyzed both quantitative and qualitative data. Using both types of data help the researcher show a more accurate picture of the event being studied and removed the biases of only utilizing one type (Creswell, 2014; Mertler, 2017). Table 3.11 shows how the research questions were investigated with different sources of data along with the data analysis methods. First, the quantitative data analysis processes are described followed by the qualitative.

Table 3.11. Research Questions, Data Sources, and Data Analysis Methods

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Data Sources</th>
<th>Data Analysis</th>
</tr>
</thead>
</table>
| RQ1: To what extent does teacher efficacy change with participation in the blended collaborative form of professional development? | - Teachers’ Sense of Efficacy Scale
- Semi-Structured Participant Interviews
- Discussion Posts and Responses
- Teacher Swap Meeting Reflections
- Researcher Journal                                                                 | - Descriptive Statistics
- Paired sample \( t \)-test
- Wilcoxon signed-ranks tests
- Inductive Analysis                                                                  |
| RQ2: To what extent does collective teacher efficacy change with participation in the blended collaborative form of professional development? | - Collective Teacher Belief Scale
- Semi-Structured Participant Interviews
- Discussion Posts and Responses
- Teacher Swap Meeting Reflections
- Researcher Journal                                                                 | - Descriptive Statistics
- Paired sample \( t \)-test
- Inductive Analysis                                                                  |
| RQ3: How does participation in the                                                 | - Semi-Structured Participant Interviews                             | - Descriptive Statistics
- Inductive Analysis                                                                  |
Research Questions | Data Sources | Data Analysis
--- | --- | ---
blended collaborative form of professional development affect collaboration amongst participants? | • Discussion Posts and Responses | 
| | • Teacher Swap Meeting Reflections | 
| | • Researcher Journal | 

Quantitative Analysis

Quantitative data were analyzed by comparing pre/post scores on the Teacher Sense of Efficacy Scale (TSES) and the Collective Teacher Belief Scale (CTBS). Each scale was designed for two different studies by Tschannen-Moran & Hoy (2001) and Tschannen-Moran & Barr (2004). Each scale has a twelve-question short form with multiple constructs including instructional strategies, student engagement, classroom management, and student discipline. These constructs were combined into a Google Form to create the instrument. Participant scores were downloaded from the Google Form onto a Microsoft Excel Spreadsheet. Pseudonyms were assigned to each participant. Participants who dropped out were removed prior to analysis. The data were uploaded into Jasp. The participants’ scores on the TSES were arranged into the three subscales: (a) student engagement, (b) instructional strategies, and (c) classroom management. The participants’ scores on the CTBS were arranged into the two subscales: (a) instructional strategies and (b) student discipline. The subscales were compared using sample $t$-tests for the parametric data and a Wilcoxon signed-ranks tests for the non-parametric data. The paired sample $t$-tests and the Wilcoxon signed-ranks tests were performed on the data in order to example whether the innovation had an impact on
participants TSES and CTBS scores. The data was shown in tables, including the overall scores and each subscale.

The results were analyzed with either paired sample t-tests or a Wilcoxon signed-ranks test depending on their normality in order to compare pretest and posttest scores (Mertler, 2017). As suggested by Mertler (2017), an alpha level of .05 was utilized to determine if the innovation had a significant impact on TSES and/or CTBS scores.

**Qualitative Analysis**

I utilized inductive analysis to analyze the qualitative data (Creswell, 2014; Mertler, 2017). In this study qualitative data was sourced from semi-structured participant interviews, online discussion posts and responses, and teacher swap meeting reflections. All transcripts along with the coding workbook were stored in a password-secured folder. All the transcriptions from this study were broken down through an inductive process of coding.

Two cycles of coding were conducted on all the qualitative sources. Each cycle consisted of multiple rounds of coding. Open coding, values coding, and process coding was conducted during the first cycle, followed by more detailed pattern coding in the second cycle (Saldana, 2016). Strauss and Corbin (1998) described how open coding “breaks down qualitative data in discrete parts, closely examines them, and compares them for similarities of differences” (p. 115). Pattern coding is a second cycle coding method that allows the researcher to group first cycle codes into a smaller number of categories, themes, or concepts (Saldana, 2016). The pattern codes were then developed into larger categories and the data was analyzed for themes in the semi-structured participant interviews, online discussion posts and responses, and teacher swap meeting
reflections (Creswell, 2014; Mertler, 2017). The themes generated focused on representing participants’ attitudes and behaviors towards efficacy, collective efficacy, and collaboration.

The thematic findings are depicted in three different ways. First, a table representing the different themes uncovered by the qualitative sources. Second, a visual figure to show how the pattern codes aligned to the categories and helped develop the final themes. Third, thick, rich, description with quotes selected from the semi-structured interviews, online discussion posts and response, and teacher swap meeting reflections were used to thread together a description of the participants attitudes and experiences on participating in the innovation. Further descriptions comparing the results of the data analysis relative to the three research questions is presented in chapter 4.

**Integration of Qualitative and Quantitative Findings**

Once qualitative data had been thoroughly analyzed into themes, the quantitative findings were considered to answer the research questions. When interpreting the results, both quantitative and qualitative data were analyzed for convergent and divergent themes or trends, and utilized to make inferences regarding the extent the qualitative results could explain the quantitative results (Creswell & Plano Clark, 2011). Furthermore, the findings were assessed and considered how well the research questions were answered compared with current literature. It is especially important to note what degree the quantitative change in teacher self- and collective efficacy can be better understood and facilitated through qualitative data analysis. This understanding will greatly impact what role a blended collaborative PD played in affecting teacher self and collective efficacy.
Procedures and Timeline

The timeline for the procedures for this action research is as follows: Phase 1: Participant Identification, Phase 2: Data Collection and Phase 3: Data Analysis. Each phase is described in detail below. Table 3.12 is included to detail the timeline of all the procedures.

Table 3.12. Timeline of Participant Identification, Data Collection & Data Analysis

<table>
<thead>
<tr>
<th>Phase</th>
<th>Expectations</th>
<th>Time Frame</th>
</tr>
</thead>
</table>
| Phase 1: Participant Identification | 1. Identify Participants  
2. Contact Participants  
3. Review Consent Form | 2 weeks    |
| Phase 2: Data Collection | 1. Enroll in Blended Collaborative PD  
2. Host 1st Teacher Swap Meeting  
3. Participants Complete Pre-Survey  
4. Begin Online Discussions  
5. Host 3rd Teacher Swap Meeting  
6. Ongoing Online Discussions  
7. Host 3rd Teacher Swap Meeting  
8. Participants Complete Post-Survey  
9. Conduct Interviews | 6 weeks    |
| Phase 3: Data Analysis | 1. Transcribe Participant Interviews  
2. Paired sample t-tests (TSES & CTBS)  
3. Wilcoxon signed-ranks tests (TSES & CTBS)  
4. Begin Inductive Analysis (semi-structured interviews, online discussion posts and responses, & teacher swap meeting reflections)  
5. Rounds of Coding and Peer Debriefing  
6. Final Categories and Themes | 5 weeks    |
Phase 1: Participant Identification

Participant identification for the full study began in the spring of 2020. All 118 teachers were contacted via email to participate. A maximum of 30 participants were accepted into the study. The selection criteria would only be used if more than 30 teachers showed interest in participating. First, years of experience were considered in order to ensure participation from both novice and veteran teachers. Second, discipline taught was looked at in order to establish a variety of content knowledge. After selection, the initial meeting took place and participants were given more details about the study, including the book, provided with consent forms, and they voted on the next teacher swap meeting dates.

Phase 2: Data Collection

Throughout the six-week intervention, participants interacted online through Google Classroom. The collaborative online community of practice for professional development was focused on building pedagogical and practical classroom knowledge on how to implement productive group work and guided instruction, a best practice previously outlined in the local context. Participants were provided a copy of the book, *Productive Group Work: How to Engage Students, Build Teamwork, and Promote Understanding* (Frey, Fisher, & Everlove, 2009). Each week sections of the book were assigned along with supplemental readings and various videos from The Teaching Channel and YouTube. Participants were asked to complete the material and respond to a weekly discussion forum question. Participants were encouraged to respond to their peer participants and the moderator in order to build better understanding of the week’s material and implement the strategies provided into their classroom teaching.
I met with participants three times throughout the study in teacher swap meetings where participants were able to build face-to-face connections and share best practices as identified in the collaborative blended community for professional development. Participants were asked to complete a Google Slide to share at the meeting which detailed a strategy that they implemented based on the materials assigned in previous weeks. Participants were given time during the first and last face-to-face Teacher Swap Meetings to complete the Teachers’ Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001) and the Collective Teacher Belief Scale (Tschannen-Moran & Barr, 2004). After the final face-to-face teacher swap meeting, eight participants were chosen to complete the semi-structured exit interview. These participants were voluntarily chosen using purposive sampling to ensure representation from various populations of participants specially aligned to the selection criteria stated in phase 1.

**Phase 3: Data Analysis**

The video recordings from each semi-structured interview were transcribed into Microsoft Word documents by slowing down the playback speed and manually typing up responses. The final transcripts were emailed to each participant for member checking. I read the transcripts from the interviews, online discussion posts and responses, and teacher swap meeting reflections again to become more familiar with their content. Inductive analysis began with the initial cycle of open coding. Codes were extrapolated into an Excel sheet and cleaned up. The second cycle of coding began by printing and cutting the codes into strips for easier manipulation into categories and themes. Descriptive statistics, paired sample t-tests, and Wilcoxon signed-ranks tests were then
performed on the pre/post results of both surveys. Once the findings of the study were complete the participants had the opportunity to evaluate the study’s findings.

**Rigor and Trustworthiness**

Creswell and Plano Clark (2011) recognize that discussions of validity in mixed methods research are rather new; therefore, there is little concrete evidence of forms of mixed methods validity to rely on. The most appropriate means of discussing validity would be to focus on the strategies that may be used in data collection, data analysis, and interpretation of the results to increase rigor and trustworthiness. Rigor and trustworthiness of a study refers to the degree of confidence in data, interpretation, and methods used to ensure the quality of a study (Franklin, 2013). The following section outlines the ways in which I provided for rigor and trustworthiness including: (a) thick, rich description, (b) triangulation, (c) member checking, and (d) peer review.

**Thick, Rich Description**

Qualitative research demands that you make extensive notes in regards to your data collection, this allowed me to create very detailed descriptions that were useful to the validity of this study (Franklin, 2013). Thick, rich description utilizes detailed accounts of field experiences where I could make explicit the patterns and put them into content (Creswell, 2014). A thick rich description was created by applying as much of the data to describe both the setting and participants involved. In this study, semi-structured interviews were conducted to find themes and patterns in participant perceptions of the collaborative blended PD on both self-, collective teacher efficacy, and collaboration.
**Triangulation**

Triangulation of data combines data drawn from different sources and at different times, this data can come from different places and/or different people. Methodological and data triangulation were primary used in this research. Methodological triangulation involves using more than one kind of method to analyze data (Creswell, 2012). This study used both qualitative and quantitative methods to collect and analyze the data. In this way, the qualitative data can help support or explain contradictions in the quantitative data (Mertler, 2017). Data triangulation uses multiple data sources to examine a study (Mertler, 2017).

In this study data triangulation included multiple sources such as semi-structured interviews, observational data in the researcher journal, online discussion posts, pre and post-test data, and participant reflections from the last face-to-face teacher swap meeting. These types of triangulations allowed me to check for consistency in the findings and make strong connections into themes, patterns, and perspectives by comparing data and providing corroborating evidence (Creswell, 2003; Creswell, 2012; Mertler, 2017). My research used inductive analysis to code semi-structured interviews, face-to-face teacher swap meetings, and online discussion forums. The codes and themes that arose from the multiple data sources allowed me to check my analysis of data and add rigor and trustworthiness to this study. Along with triangulation of qualitative sources, this study also allowed for methodological triangulation due to the combination of various data collection and analysis techniques beyond inductive analysis.
Member Checking

With member checking the researcher solicits participants to look over the data, analysis and interpretations of the study in order to judge accuracy (Creswell, 2012). Member checking is considered to be one of the most critical techniques for building credibility (Creswell, 2003; Franklin, 2013). After completing the TSES and the CTBS participants were sent copies of their responses. The transcribed semi-structured interview was emailed to each participant to check for accuracy. All interview participants responded their responses were accurately transcribed. After coding for privacy, qualitative data was shared with all participants in order to member check the researcher’s interpretations of the data. All participants responded positively about the codes created from the qualitative data provided. After their accolades were received, a completed copy of the study was sent to participants, and an invitation to a formal meeting where the accuracy of the study was discussed. During the meeting participants shared their thoughts on the process and the final product. Overwhelmingly, participants agreed they appreciated the format of the blended collaborative PD and were not surprised by the positive research results.

Peer Review

Multiple peer reviews were conducted throughout the research by faculty members as well as peers from my cohort in Educational Technology program at the University of South Carolina. According to Creswell (2003), peer reviewers can help assess whether the findings are accurately portrayed, in a sense they keep the research honest by asking meaningful questions. While the peer reviewers may not be experts in my research area, they had some connections to the research and therefore were able to
provide meaning and interpretation during scheduled peer debriefing sessions (Franklin, 2013). I met weekly with my dissertation chair to review and discuss my innovation, data collection, analysis, and findings. Along with my chair, I shared my work with a writing group monthly as I progressed through each chapter.

**Plan for Sharing**

I shared the action research findings with many stakeholders including participants, teachers and administrators at Pine Hill High School, as well as district employees, the school board, and union leaders within the Pine Valley High School District.

Initially, I held a forum with the participants to discuss any information collected and ensure any and all information accurately portrays their perceptions as discussed above in the form of peer review. Reflection data collected from participants during the semi-structured interviews and face-to-face teacher swap meetings was shared in a Google Slides presentation. These slides were used to present the study to the groups stated above. Before sharing occurred, all data was made confidential and pseudonyms were used to create a proper balance between teacher-participant and administration. It is vital that participants and administration are aware of power imbalances and honor confidentiality.

A meeting was held with school site administration to present the findings in order to get approval to present findings at a monthly faculty meeting where myself and participant volunteers shared data and reflected upon our experiences. After findings were shared within the school site, I held another meeting with the superintendent and district administration. In this meeting, specific data, research, and participant reflections
were shared. Lastly, a request was made to present the data to the school board and the union.

After the research was shared, I reflected on the feedback collected and made plans for moving forward with a professional development plan for the 2020-2021 school year. I am considering publishing my findings and presenting them on a larger scale like at the Computer Using Educators (CUE) conference or the International Society for Technology Standards (ITSE) conference to further impact research in teacher PD.
Chapter 4

Analysis & Findings

Introduction

The purpose of this action research was to explore the effects of a blended collaborative form of professional development (PD) on the self and collective efficacy of teachers at Pine Hill High School. The findings described in this chapter will aid in the understanding of how blending online and face-to-face aspects of PD can impact efficacy, collective efficacy, and collaboration. This chapter presents findings from both quantitative measures (i.e., TSES, CTBS) and qualitative measures (i.e., participant interviews, participant online discussions, participants’ pre/post reflections). The following research questions directed the inquiry.

1. How and to what extent does teacher efficacy change with participation in a blended collaborative form of professional development?

2. How and to what extent does collective teacher efficacy change with participation in a blended collaborative form of professional development?

3. How does participation in a blended collaborative form of professional development affect collaboration amongst participants?

Part one of this chapter reports the quantitative results and findings obtained from pre and post TSES and CTBS. Part two of this chapter identifies and explains the three themes that emerged from the qualitative data sources.
Quantitative Findings

Quantitative data collected in this study included multiple instruments such as participants’ scores on the: (a) TSES, (b) CTBS, (c) researcher journal. First, the pre/post TSES will be presented, followed by the pre/post CTBS, and lastly statistics from the researcher journal.

Teacher Sense of Efficacy Scale

Tschannen-Moran and Woolfolk Hoy developed the TSES to measure teacher efficacy in student engagement, efficacy in instructional strategies, and classroom management efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). The TSES consists of twelve-items on a nine-point Likert-type scale with anchors at 1, 3, 5, 7, and 9, and range from ‘nothing’ to ‘a great deal’. The TSES is comprised of three subscales: (a) student engagement, (b) instructional strategies, (c) classroom management. The subscales are nonconsecutively aligned to questions. Both the pretest and posttest TSES were tested for reliability (N = 15). As reported by DeVillis (2003) a Cronbach’s alpha coefficient below .60 is unacceptable, .60 to .69 is undesirable, .70 to .80 is respectable, and .80 and above is very good. Therefore, the Cronbach’s alpha for this instrument’s pretest (a = .66) found undesirable reliability while the posttest (a = .84) found very good reliability. The reliabilities of each of the instrument's subscales were also tested, as shown in Table 4.1. The range of Cronbach’s alpha for the pretests ranged from .66 to .78 which indicated undesirable to acceptable reliability. Whereas, the range of Cronbach’s alpha for the posttests ranged from .84 to .86 indicated very good reliability.
Table 4.1. Cronbach’s Alpha Reliability- Teacher Sense of Efficacy Scale

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Pretest $a$</th>
<th>Posttest $a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Engagement</td>
<td>.75</td>
<td>.86</td>
</tr>
<tr>
<td>Instructional Strategies</td>
<td>.75</td>
<td>.85</td>
</tr>
<tr>
<td>Classroom Management</td>
<td>.78</td>
<td>.83</td>
</tr>
<tr>
<td>Overall Teacher Efficacy</td>
<td>.66</td>
<td>.84</td>
</tr>
</tbody>
</table>

Descriptive statistics. First, descriptive statistics about the Teacher Sense of Efficacy Scale were presented in Table 4.2. From the pretest ($M = 6.85, SD = .50$) to the posttest ($M = 7.59, SD = .63$), participants’ overall efficacy improved. The subscale with the largest increase was Student Engagement in which participants’ mean efficacy improved 11% between the pretest and posttest.

Table 4.2. Descriptive Statistics- Teacher Sense of Efficacy Scale ($n = 15$)

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>Student Engagement</td>
<td>6.28</td>
<td>.077</td>
</tr>
<tr>
<td>Instructional Strategies*</td>
<td>7.32</td>
<td>0.65</td>
</tr>
<tr>
<td>Classroom Management</td>
<td>6.95</td>
<td>0.85</td>
</tr>
<tr>
<td>Overall teacher Efficacy</td>
<td>6.85</td>
<td>0.50</td>
</tr>
</tbody>
</table>

Note. *This is a lower bound of the true significance
Note. Out of nine-point Likert-type scale.

Participants’ scores in each of the subscales (student engagement, instructional strategies, and classroom management), as well as their overall scores, were analyzed. The Shapiro-Wilk test was used to evaluate the normality of the data. Based on those results, a paired sample $t$-test or a Wilcoxon signed-ranks test were used to analyze the data.

Shapiro-Wilk normality tests. The Shapiro-Wilk tests was used to determine if the data were normally distributed for the overall scores and subscales. To complete the
Shapiro-Wilk tests, the pretest and posttest Likert-type scale averages for each subscale and the overall total were calculated. Next, the difference between the Likert-type scale averages for each subscale and the overall total from the pretest and posttest were found to create a new variable that represented the difference in Likert-type scale averages between the pretest and posttest.

### Table 4.3. Shapiro-Wilk Normality Tests- Teacher Sense of Efficacy Scale

<table>
<thead>
<tr>
<th>Subscales</th>
<th>W</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Engagement</td>
<td>.967</td>
<td>15</td>
<td>.811</td>
</tr>
<tr>
<td>Instructional Strategies</td>
<td>.828</td>
<td>15</td>
<td>.009*</td>
</tr>
<tr>
<td>Classroom Management</td>
<td>.942</td>
<td>15</td>
<td>.413</td>
</tr>
<tr>
<td>Overall Teacher Efficacy</td>
<td>.934</td>
<td>15</td>
<td>.316</td>
</tr>
</tbody>
</table>

*Note. *Indicated not normally distributed data (p = .05).

The next steps of the data analysis process were guided by the Shapiro-Wilk test results. Either the paired sample t-test or Wilcoxon signed-ranks test were used to analyze the data depending on their normality from the Shapiro-Wilk test. The data for the subscales and total that were normally distributed were analyzed using the paired same t-test. The data for the subscale Instructional Strategies was analyzed using the Wilcoxon signed rank test (Gibbons & Chakraborti, 2011; Pappas & DuPuy, 2004). There is a higher Type I error rate when multiple comparisons are being on the same hypothesis. Using the Bonferroni adjustment helps avoid reporting false positives (Streiner & Norman, 2011).

**Paired sample t-tests.** Paired sample t-tests were conducted to compare participants’ responses on the pretest and posttest for the normally distributed subscales of Student Engagement, Classroom Management, and the overall total. To complete the paired sample t-tests, participants’ average Likert-type scale agreement levels for the total
and each normally distributed subscale, were calculated on the pretest and posttest. The changes in the overall total and each subscale were ten compared using the paired sample $t$-tests.

The paired sample $t$-tests revealed that participants’ posttest scores were significantly higher than pretest scores. Participants’ overall efficacy increased from the pretest ($M = 6.85$, $SD = 0.50$) to the post test ($M = 7.59$, $SD = 0.63$), $p = .000$, Cohen's $d =1.15$. Participants’ efficacy in Student Engagement increased from the pretest ($M = 6.28$, $SD = 0.77$) to the posttest ($M = 7.00$, $SD = 1.04$), $p = .002$, $d =0.95$. Participants’ efficacy in Classroom Management increased from the pretest ($M = 6.95$, $SD = 0.85$) to the posttest ($M = 7.70$, $SD = 0.82$), $p = .000$, $d =1.32$.

As shown in Table 4.4, the overall increase in participants’ teacher efficacy on the survey from pretest to posttest was found to be statistically significant. The results suggest that participation in a blended collaborative form of professional development can increase teacher's efficacy. As seen in table 4.6, the effect size for this analysis was found to exceed Cohen's (1998) observance for a large effect ($d = .80$) for the total, as well as each subscale. All the subscales and the total were found to be significant at the Bonferroni corrected alpha level of $p = .016$. 
Table 4.4. *Paired Sample t-tests – Teacher Sense of Efficacy Scale*

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Pretest</th>
<th>Posttest</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Engagement</td>
<td>6.28</td>
<td>7.00</td>
<td>3.66</td>
<td>14</td>
<td>&lt;.002**</td>
<td>1.32</td>
</tr>
<tr>
<td>Classroom Management</td>
<td>6.95</td>
<td>7.70</td>
<td>5.12</td>
<td>14</td>
<td>&lt;.000**</td>
<td>0.95</td>
</tr>
<tr>
<td>Overall Teacher Efficacy</td>
<td>6.85</td>
<td>7.59</td>
<td>5.66</td>
<td>14</td>
<td>&lt;.000**</td>
<td>1.45</td>
</tr>
</tbody>
</table>

*Note.* Out of nine-point Likert-type scale.
* Indicates the differences between pre-survey and post-survey is significant *p* = .05.
• Indicates the differences between pre-survey and post-survey is significant at Bonferroni correction level *p* = .016.

**Wilcoxon signed-ranks test.** The data that were not distributed normally for the subscale of Instructional Strategies were analyzed using the Wilcoxon signed-rank test. The outcome statistics are displayed in Table 4.5. The Instructional Strategies pretest median was 7.00 and the posttest median was 8.00. The Wilcoxon signed-ranks test suggested there was a statistically significant effect in Instructional Strategies (*Z* = -3.02, *p* = .001, *r* = -.55). The effect size below -.50 indicated a large effect size (Cohen, 1992). The subscale was found to be significant at the Bonferroni correlation level of *p* = .016. These results indicate that when teacher professional development provides opportunities for online and face-to-face collaboration teacher efficacy in Instructional Strategies can increase.

Table 4.5. *Wilcoxon Signed-Ranks Test- Teacher Sense of Efficacy Scale*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Z</th>
<th>p</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional Strategies</td>
<td>7.00</td>
<td>6.00</td>
<td>-3.02</td>
<td>.001*</td>
<td>-.55</td>
</tr>
</tbody>
</table>

*Note.* Out of nine-point Likert-type scale.
* Indicates the differences between pre-survey and post-survey is significant *p* = .05.
• Indicates the differences between pre-survey and post-survey is significant at Bonferroni correction level *p* = .016.
Collective Teacher Belief Scale

The CTBS was developed as an adaptation of the TSES (Tschannen-Moran & Hoy, 2001). The CTBS consists of twelve items on a nine-point Likert-type scale anchors at 1, 3, and 5, 7, and 9, and ranging from ‘nothing to a great deal. The twelve-item scale represents two dimensions of collective teacher efficacy: instructional strategies and student discipline. The two dimensions are consecutively asked.

All scores from the CTBS were tested for reliability (n = 15). As reported by DeVillis (2003), a Cronbach’s alpha coefficient below .60 is unacceptable, .60 to .69 is undesirable, .70 to .80 is respectable, and .80 and above is very good. Therefore, the Cronbach’s alpha for this instrument’s pretest (a = .96) and posttest (a = .95) were found to be very reliable. The reliability of each of the instrument’s subscales were also tested, as shown in Table 4.6. The range of Cronbach’s alpha for the pre/posttests ranged from .89 to .95 which indicated very good reliability.

Table 4.6. Cronbach’s Alpha Reliability- Collective Teacher Belief Scale (n = 15)

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Pretest a</th>
<th>Posttest a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional Strategies</td>
<td>.95</td>
<td>.89</td>
</tr>
<tr>
<td>Student Discipline</td>
<td>.91</td>
<td>.93</td>
</tr>
<tr>
<td>Overall Collective Teacher Belief</td>
<td>.96</td>
<td>.95</td>
</tr>
</tbody>
</table>

Descriptive statistics. First, descriptive statistics about the CTBS were presented in Table 4.7. From the pretest (M = 6.38, SD = 1.14) to the posttest (M = 7.32, SD = 0.91), participants overall collective efficacy improved. The subscale with the largest increase was Instructional Strategies in which participants’ mean efficacy improved 15% between the pretest and posttest.
Table 4.7. Descriptive Statistics- Collective Teacher Belief Scale

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Pretest</th>
<th></th>
<th>Posttest</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Instructional Strategies</td>
<td>6.51</td>
<td>1.15</td>
<td>7.50</td>
<td>0.92</td>
</tr>
<tr>
<td>Student Discipline</td>
<td>6.24</td>
<td>1.20</td>
<td>7.13</td>
<td>0.95</td>
</tr>
<tr>
<td>Overall Collective Teacher Belief</td>
<td>6.38</td>
<td>1.14</td>
<td>7.32</td>
<td>0.91</td>
</tr>
</tbody>
</table>

Note. *This is a lower bound of the true significance
Note. Out of nine-point Likert-type scale.

Participants’ scores in both the subscales (instructional strategies and student discipline), as well as the total scores, were analyzed. The Shapiro-Wilk test was used to evaluate the normality of the data. Based on the results of the Shapiro-Wilk test either a paired sample t-test or a Wilcoxon signed-ranks test were used to analyze the data.

**Shapiro-Wilk normality tests.** The Shapiro-Wilk tests was used to determine if the data were normally distributed for the overall scores and subscales. To complete the Shapiro-Wilk tests, the pretest and posttest Likert-type scale averages for each subscale and the overall total were calculated. Next, the difference between the Likert-type scale averages for each subscale and the overall total from the pretest and posttest were found to create a new variable that represented the difference in Likert-type scale averages between the pretest and posttest.

Table 4.8. Shapiro-Wilk Normality Tests- Collective Teacher Belief Scale

<table>
<thead>
<tr>
<th>Subscales</th>
<th>W</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional Strategies</td>
<td>.961</td>
<td>15</td>
<td>.703</td>
</tr>
<tr>
<td>Student Discipline</td>
<td>.959</td>
<td>15</td>
<td>.682</td>
</tr>
<tr>
<td>Overall Collective Teacher Belief</td>
<td>.967</td>
<td>15</td>
<td>.813</td>
</tr>
</tbody>
</table>

The next steps of the data analysis process were guided by the Shapiro-Wilk test results. Either the paired sample t-test or Wilcoxon signed-ranks test were used to analyze
the data depending on their normality from the Shapiro-Wilk test as seen in Table 4.10. Because the data for both subscales and total were normally distributed a paired sample t-test was used to further analyze the data. Similarly, to the TSES, the Bonferroni correction needed to be calculated to minimize any Type 1 error inflation. Type 1 errors are more likely to occur when multiple subscales are present. All the subscales and the total were found to be significant at the Bonferroni corrected alpha level of $p = .25$.

**Paired sample t-tests.** Paired sample t-tests were conducted to compare participants’ responses on the pretest and posttest for the normally distributed subscales of Instructional Strategies, Student Discipline, and the overall scores. The changes in the overall total and each subscale were ten compared using the paired sample t-tests.

The paired sample t-tests revealed that participants’ posttest scores were significantly higher than pretest scores. Participants’ overall collective efficacy increased from the pretest ($M = 6.38, SD = 1.14$) to the posttest ($M = 7.32, SD = 0.91$), $p = .001, d = 1.09$. Participants’ collective efficacy in Instructional Strategies increased from the pretest ($M = 6.51, SD = 1.15$) to the posttest ($M = 7.50, SD = 0.92$), $p = .001, d = 1.09$. Participants’ collective efficacy in Student Discipline increased from the pretest ($M = 6.24, SD = 1.20$) to the posttest ($M = 7.13, SD = 0.95$), $p = .004, d = 0.89$.

As shown in Table 4.11, participants’ collective teacher efficacy scores significantly increased from pretest to posttest and was found to be statistically significant with the paired sample t-test $t(14) = 4.22, p = .001$. A paired sample t-test was conducted on the Instructional Strategies subscale $t(14) = 4.23, p = .001$ and Student Discipline subscale $t(14) = 3.42, p = .004$. The results suggest that participation in a blended collaborative form of professional development can increase teacher's collective
efficacy. As seen in table 4.9, the effect size for this analysis was found to exceed Cohen's (1998) observance for a large effect (d = .80) for the total, as well as each subscale. All the subscales and the total were found to be significant at the Bonferroni correct level of \( p = .025 \).

Table 4.9. *Paired Sample t-Tests – Teacher Sense of Efficacy Scale (n= 15)*

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Pretest</th>
<th>Posttest</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>t</td>
<td>df</td>
</tr>
<tr>
<td>Instructional Strategies</td>
<td>6.50</td>
<td>1.15</td>
<td>7.50</td>
<td>0.92</td>
<td>4.32</td>
<td>14</td>
</tr>
<tr>
<td>Student Discipline</td>
<td>6.24</td>
<td>1.20</td>
<td>7.13</td>
<td>0.95</td>
<td>3.43</td>
<td>14</td>
</tr>
<tr>
<td>Overall Collective Teacher Belief</td>
<td>6.38</td>
<td>1.14</td>
<td>7.32</td>
<td>0.91</td>
<td>4.22</td>
<td>14</td>
</tr>
</tbody>
</table>

*Note. Out of nine-point Likert-type scale.  
* Indicates the differences between pre-survey and post-survey is significant \( p = .05 \).  
• Indicates the differences between pre-survey and post-survey is significant at Bonferroni correction level \( p = .025 \).

In conclusion, the TSES and the CTBS were analyzed based on the normality of their overall and associated subscales using either a paired sample t-test or a Wilcoxon signed-ranks test. The TSES data showed that participants’ posttest scores on all subscales and the overall scores were significantly higher than their pretest scores. Similarly, participants’ collective efficacy and instructional strategies scores significantly increased after attending the blended collaborative PD.
Researcher Journal

Notes collected in the researcher journal throughout the 6-week innovation captured statistics on participation in the online and offline aspects of the blended collaborative professional development. These sources included: (a) the number of online discussion posts and responses and (b) teacher swap meeting attendance records.

**Online discussion posts and responses.** Table 4.10 provides descriptive statistics for participation in the weekly online discussion posts and responses. The total number of initial posts was 74, this suggested that 82% of participants posted an initial response each week. The total number of peer responses was 125, this shows that 69% of participants responded to two of their peers each week. The discussion during week two had the highest participation ($M = 2.6$). The first and fifth weeks had the lowest participation ($M = 2.06$). The data suggests participants responded to their peers on average twice a week ($M = 2.00$).

Table 4.10. *Descriptive Statistics for Participation in Online Discussion Posts*

<table>
<thead>
<tr>
<th></th>
<th>Number of Initial Posts</th>
<th>Number of Peer Responses</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>15</td>
<td>16</td>
<td>2.06</td>
</tr>
<tr>
<td>Week 2</td>
<td>13</td>
<td>26</td>
<td>2.6</td>
</tr>
<tr>
<td>Week 3</td>
<td>12</td>
<td>21</td>
<td>2.2</td>
</tr>
<tr>
<td>Week 4</td>
<td>12</td>
<td>20</td>
<td>2.13</td>
</tr>
<tr>
<td>Week 5</td>
<td>11</td>
<td>20</td>
<td>2.06</td>
</tr>
<tr>
<td>Week 6</td>
<td>11</td>
<td>22</td>
<td>2.2</td>
</tr>
<tr>
<td>Totals</td>
<td>74</td>
<td>125</td>
<td>13.26</td>
</tr>
</tbody>
</table>

**Teacher swap meeting attendance.** Table 4.11 provides descriptive statistics for teacher swap meeting attendance. The mid-meeting had the highest attendance with all 15
participants present. The post-meeting was the least attended with 10 participants.

Overall, attendance at the face-to-face teacher swap meetings was \( M = 2.00 \).

Table 4.11. *Descriptive Statistics for Teacher Swap Meeting Attendance (n = 15)*

<table>
<thead>
<tr>
<th>Attendance</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Meeting</td>
<td>11</td>
</tr>
<tr>
<td>Mid Meeting</td>
<td>15</td>
</tr>
<tr>
<td>Post Meeting</td>
<td>10</td>
</tr>
<tr>
<td>Totals</td>
<td>36</td>
</tr>
</tbody>
</table>

**Qualitative Findings**

This study used three methods for collecting qualitative data. Data sources included: (a) semi-structured participant interviews, (b) participant discussion posts and responses, and (c) teacher swap meeting reflections. I analyzed the transcripts of participant interviews conducted at the end of the innovation, online participant discussion posts and responses throughout the innovation, and pre and post meeting reflections. Purposive sampling was used to identify 8 participants for the semi-structured interviews. Discussion posts and responses from all 15 participants were gathered over the six week time frame for the data collection. Reflection artifacts were collected from 15 participants for both the pre and post teacher swap meetings. Examples of reflection artifacts included a KWL chart to activate participant’s prior knowledge on PGW and post reflection questions to capture what participants gained from participating. The following section includes a description of the qualitative data analysis and presents the themes and interpretations.
Analysis of Qualitative Data

Transcripts of participants’ interview responses, online discussion posts and responses, and teacher swap meeting reflections were examined through inductive analysis (Creswell, 2017; Mertler, 2014). Before formal coding began, I reviewed each transcript several times over three weeks to become familiarized with the content of each transcript. Two cycles of coding were conducted on all the qualitative sources. Each cycle consisted of multiple rounds of coding. Open coding, values coding, and process coding were conducted during the first cycle (Saldana, 2016). This second cycle consisted of two rounds of pattern coding (Saldana, 2016). Table 4.12 presents the qualitative data by source to highlight the richness of information obtained through each source. Each cycle of coding and the corresponding rounds are described in more detail below, followed by the process for identifying themes.

Table 4.12. Summary of Qualitative Data Sources

<table>
<thead>
<tr>
<th>Types of Qualitative Data Sources</th>
<th>Number</th>
<th>Total Number of Codes Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-Structured Participant Interviews</td>
<td>8</td>
<td>435</td>
</tr>
<tr>
<td>Online Discussion Posts and Responses</td>
<td>208</td>
<td>421</td>
</tr>
<tr>
<td>Teacher Swap Meeting Reflections</td>
<td>30</td>
<td>115</td>
</tr>
<tr>
<td>Totals</td>
<td>246</td>
<td>971</td>
</tr>
</tbody>
</table>

*Note. Teacher swap meeting reflection were collected during the pre and post meetings.*

**First cycle coding.** During the first cycle of coding, three rounds of coding were conducted, including open coding, values coding, and process coding (Saldana, 2016). I coded each qualitative source separately, starting with the semi-structured interviews, followed by the online discussion posts and responses, and lastly, the teacher swap
meeting reflections. Each of the sources was placed in a Microsoft Word document in a two-column chart. The left column was used for collecting my anecdotal notes, and the right column for the interview transcripts. I utilized the comment feature in Microsoft Word to highlight and create open codes for each qualitative source. The qualitative sources were analyzed line by line in this open coding cycle (see Figures 4.1, 4.2, and 4.3). Each of the rounds was described in the paragraphs to follow.

<table>
<thead>
<tr>
<th>Anecdotal Notes</th>
<th>Interview Transcript</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Name: Kimna</td>
</tr>
<tr>
<td></td>
<td>Highest education level achieved: Bachelor and teaching credential</td>
</tr>
<tr>
<td></td>
<td>What is your current teaching job within the district? High School Social Science</td>
</tr>
<tr>
<td></td>
<td>What level and subject do you teach? Psychology and AP Psychology 10.12th</td>
</tr>
<tr>
<td></td>
<td>How long have you been a teacher? In the district? 13 years all in the district</td>
</tr>
<tr>
<td></td>
<td>Please describe your familiarity with the educational initiatives in the Salinas Union High School District. I am familiar with constructivism, project based learning, and RTI.</td>
</tr>
<tr>
<td>Coherence can be a problem in a large district when it comes to implementation and practice of district initiatives. The demographics and socioeconomics status of students in the school district can be overwhelming due to lack of parent involvement, resources, and overall apathy.</td>
<td>1. How would you describe your teaching philosophy? Tell me about how you feel you are making a difference in your students’ achievement? First and foremost I would like to be a positive influence in their lives, most through educating them in my chosen subject. I would like to be as adult as their life that is dependant but expect things from them. I think that they should learn the things that I’m trying to teach them but I also want that they should work hard and sometimes hard work is maybe more important than just their ability to memorize things. I guess I’d also like to think that I’m helping them be more aware and secure and compassionate.</td>
</tr>
<tr>
<td>2. How do you think your teaching skills match your job expectations? As far as the expectations that my employer has for me, I would say that I believe my skills match the expectations for the most part. I don’t know that I’m using certain initiatives as much as they like but I definitely try to employ them to a certain degree that I feel like for the most part my teaching skills match expectations.</td>
<td></td>
</tr>
<tr>
<td>3. What are the parts of teaching you find most challenging? I think the most challenging part of teaching is dealing with students who have opinions that are very strong about things that they’re not willing to change. Close knowledgeable can be a struggle. I find that people including our students can be close minded and that can be a struggle to try to open their minds to other perspectives. I would say another major challenge especially with our population is they’re not all getting what they think they need and as a result it is frustrating to get some of them to care about school because there’s bigger things happening in their lives that we don’t have any much control over.</td>
<td></td>
</tr>
<tr>
<td>4. How do you know when you are a successful teacher? I think I know when I’m being a successful teacher just from day-to-day just kind of gauging their reactions to certain lessons and are they leaving my class feeling happy and successful or are they leaving my class feeling bored and this is just another boring class I have to go to. I guess to some extent success and grades kind of can make me feel successful, but mostly my feelings of success come from the students themselves and their behavior in my class.</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4.1. Semi-Structured Interview Coding Document
Teacher describes what materials suggest for creating routines and successful group work, but feel they cannot sustain throughout the year.

Samantha

Online discussion posts and responses coding document.

Figure 4.2. Online discussion posts and responses coding document.

Figure 4.3. Pre- and Post-Meeting Reflection Coding Document.
**Open coding.** The first round of coding began by reading each qualitative source and applying open codes. This open coding process linked one or more codes to each sentence capturing the general purpose of what each sentence portrayed (Mertler, 2017; Saldana, 2016). To create initial codes, I quickly moved through the data applying words or phrases that corresponded to the actions or emotions of the participants (Charmaz, 2014). For example, the sentence “sometimes I would read the comments and if they specifically asked me something I would respond, but I would say I liked it better when we were in person” from Katrina’s semi-structured interview received two open codes: “responded when asked” and “prefer face-to-face.” This quick pace helped me to avoid using any preexisting categories or concepts.

Nonetheless, the rapid nature of open coding necessitates revision (Charmaz, 2014). Before moving to the second round of coding, I wrote anecdotal notes to facilitate reflection of the initial codes, reread each piece of qualitative data, and made revisions to the codes when necessary. The first round of coding generated 971 unique codes across all the documents. Many of these codes were similar in word choice or phrasing. For example, a review of initial codes found five instances of the code “building relationships in teams is important” and “team building is important.” These codes were revised to convey the same meaning.

Once the first round of open coding was complete, I ran a macro to extract the comments from the Word document into a Microsoft Excel worksheet. The Excel worksheet became my coding workbook. While I conducted my analysis without a co-researcher, the coding workbook helped ensure the consistency of my analysis. A coding workbook helps increase reliability (Creswell, 2017). As I worked through an additional
coding cycle, I used my coding workbook to ensure that each data segment was properly
coded. The coding workbook made it easier to simplify and sort each code, which
became the categories supporting emerging themes. The coding workbook is also an
audit trail for my study and a tool for outside researchers to verify results (Creswell,
2017). Each data source had a tab in the codebook. The first column in the Microsoft
Excel worksheet contained a number identifying the participant, a second column for the
participant’s direct quote, and a third column with the refined code from the first round of
open coding. As I applied more codes in the rounds of coding for each cycle, more
columns were added to the Excel worksheet (see Figure 4.4).

<table>
<thead>
<tr>
<th>Participant</th>
<th>Bracketed Text</th>
<th>Code Type</th>
<th>Refined Code</th>
<th>Categories</th>
<th>Subcategories</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>The thing that bugs me the most is when people are getting professional</td>
<td>Process Code</td>
<td>attending PD means leaving classroom</td>
<td>Teachers beliefs about</td>
<td>Barriers to PD</td>
</tr>
<tr>
<td></td>
<td>development they often have to leave their classroom</td>
<td></td>
<td></td>
<td>existing PD</td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>the school is not equipped to cover all those teachers being out</td>
<td>Process Code</td>
<td>logistics make attending PD difficult</td>
<td>Teachers beliefs about</td>
<td>Barriers to PD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>existing PD</td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>this is a lot of work and I already have a lot of work to do</td>
<td>Values Code</td>
<td>B: participating in PD is more work</td>
<td>Teachers beliefs about</td>
<td>Barriers to PD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>existing PD</td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>more streamlined with less red tape and hoops jump through</td>
<td>Values Code</td>
<td>A: process makes PD hard to amend</td>
<td>Teachers beliefs about</td>
<td>Barriers to PD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>existing PD</td>
<td></td>
</tr>
<tr>
<td>P2</td>
<td>The school could think about making videos and putting together different</td>
<td>Concept Code</td>
<td>asynchronous PD</td>
<td>Teachers beliefs about</td>
<td>Barriers to PD</td>
</tr>
<tr>
<td></td>
<td>resources for teachers</td>
<td></td>
<td></td>
<td>existing PD</td>
<td></td>
</tr>
<tr>
<td>P4</td>
<td>opportunities or platforms to voice concerns</td>
<td>Values Code</td>
<td>A: voicing concerns</td>
<td>Teachers beliefs about</td>
<td>Barriers to PD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>existing PD</td>
<td></td>
</tr>
<tr>
<td>P4</td>
<td>once we voice our concerns getting a response that we have been heard</td>
<td>Values Code</td>
<td>A: addressing concerns</td>
<td>Teachers beliefs about</td>
<td>Barriers to PD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>existing PD</td>
<td></td>
</tr>
<tr>
<td>P7</td>
<td>another school district trying to be a teacher I did not have anyone to help</td>
<td>Values Code</td>
<td>B: not all district have support</td>
<td>Teachers beliefs about</td>
<td>Barriers to PD</td>
</tr>
<tr>
<td></td>
<td>me</td>
<td></td>
<td></td>
<td>existing PD</td>
<td></td>
</tr>
<tr>
<td>P7</td>
<td>using the coaches more</td>
<td>Values Code</td>
<td>B: teachers should take advantage of</td>
<td>Teachers beliefs about</td>
<td>Barriers to PD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>support offered</td>
<td>existing PD</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4.4. Coding Workbook
**Values coding.** The second round of coding consisted of values coding, an affective coding method (Saldana, 2016). According to Saldana, (2016), “a value is the importance we attribute to ourselves, another person, thing, or an idea” (p. 131). Values codes were applied to represent participants' values, attitudes, and beliefs (Daiute, 2014). While values coding is appropriate for all qualitative studies, it is particularly useful in exploring participant’s values and beliefs (Saldana, 2016). Therefore, values coding was suitable for this action research which aimed to understand participant’s values, attitudes, and beliefs before, during, and after the innovation. Applying values codes to multiple qualitative sources from the same participants can corroborate codes and enhance the trustworthiness of the results (LeCompte & Preissle, 1993).

During this round of coding, I read through the refined codes from round one and identified values codes. I created a column in the coding workbook for code types and began labeling any codes that spoke to participant’s values, beliefs, or attitudes. As I read through the open codes, I refined each code to capture participants’ beliefs and attitudes by applying values codes (Creswell, 2014; Mertler, 2017; Saldana, 2016). By applying Saldana’s (2016) values coding technique, I was able to better recognize the values and belief systems held by participants. Values codes were labeled with a “V” for value, an “A” for attitude, and a “B” for belief to precisely define the coded value. Codes labeled with “V” attributed value and importance to participants themselves, others, things, or ideas (Saldana, 2016). Examples of text associated with “V” were “I like” and “really good”. Codes labeled with an “A” identified how participants expressed about themselves, others, things, or ideas (Saldana, 2016). Examples of “A” labels included “I feel”, “help”, and “personally”. Lastly, codes labeled with “B” dealt with belief systems
which are a combination of values and feelings (Saldana, 2016). Text labeled with “B” included “more”, “difficult”, and “improve”. This process also helped refine codes from round one to be more in line with the experiences and feelings of the participants. This second round of coding resulted in 605 values codes from the initial 971 open codes. Table 4.13 shows the number of values codes applied to each qualitative data source.

Table 4.13. *Second Round Values Codes*

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Value</th>
<th>Belief</th>
<th>Attitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-Structured Interviews</td>
<td>69</td>
<td>109</td>
<td>99</td>
</tr>
<tr>
<td>Online Discussion Posts and Responses</td>
<td>103</td>
<td>72</td>
<td>91</td>
</tr>
<tr>
<td>Teacher Swap Meeting Reflections</td>
<td>14</td>
<td>19</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>186</td>
<td>200</td>
<td>219</td>
</tr>
</tbody>
</table>

*Note. Teacher swap meeting reflection were collected during the pre and post meetings.*

**Process coding.** The third round of coding continued by employing an elemental coding method to analyze the data known as process coding (Creswell, 2014; McMillian, 2016; Saldana, 2016). Process coding uses “-ing” words to identify action in the data (Charmaz, 2002). Process coding is appropriate for most qualitative studies, particularly research on routines and human rituals (Corbin & Strauss, 2008). Process coding focuses on what participants do versus what they have (Willig, 2008). Process codes can help identify procedures that occurred within a study and help the researcher identify sequences of actions in a study (Saldana, 20126). Process coding was useful in this study because it revealed steps participants took during their learning in the innovation.

During process coding, I analyzed the data for action and interaction between participants and the innovation. This round generated codes such as “improving,” “implementing,” and “reflecting.” For example, one participant stated, “I thought about my teaching practices a lot.” I coded this statement as “reflecting” because it showed how
the participant processed their experience. This third round of coding brought about a better understanding of the data by reorganizing and merging codes based on similarities (Creswell, 2014; McMillian, 2016; Saldana, 2016). This final round of coding in the first cycle narrowed down 316 process codes from the original 917 open codes. Table 4.14 shows the number of process codes applied to each qualitative data source.

Table 4.14. Second Round Process Codes

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Process Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-Structured Interviews</td>
<td>126</td>
</tr>
<tr>
<td>Online Discussion Posts and Responses</td>
<td>140</td>
</tr>
<tr>
<td>Teacher Swap Meeting Reflections</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>316</td>
</tr>
</tbody>
</table>

*Note. Teacher swap meeting reflection were collected during the pre and post meetings.

Second cycle coding. Second-cycle coding methods were utilized as a way of reorganizing and reflecting on the first cycle codes (Saldana, 2016). The rethinking of first cycle codes can help the researcher develop categorical, thematic, and conceptual organization of the first cycle codes (Creswell, 2014). In this study, second cycle coding consisted of two rounds of pattern coding.

Round one pattern coding. Pattern coding was used to condense large amounts of data into smaller units to develop categories and themes (Saldana, 2016). In this round, pattern coding was used to filter the first cycle codes down into pattern codes. In order to filter codes into patterns, I printed the codes and cut them into strips. Using the paper slips, I filtered through the codes one by one and spread them out across multiple tables. This process allowed me to visualize how the codes fit into groups (see Figure 4.5).
Each pattern code consisted of multiple sub-codes from the first cycle. Each code was aligned to a pattern code category as seen in the examples in table 4.16. For example, the pattern code *Teacher’s Beliefs About Existing PD Opportunities* contained codes that illustrated participants’ values and attitudes on existing PD opportunities offered by the school site and district. This process bore 32 initial categories. 188 outlier codes were placed in their own pile and ultimately left out during the second round of pattern coding because they were insignificant or insufficient for describing participants’ experiences (Saldana, 2016). To categorize codes from cycle one into pattern codes, I searched the Excel sheet for each paper code strip, created a column titled category, and typed the category for each coded strip.
During the first round of pattern coding, notes were kept in my researcher journal to track decisions made about the meaning and relationship between codes (Mertler, 2017). Peer debriefing (Franklin, 2013) with my dissertation chair happened weekly during this process. These meetings led to a reorganization of pattern codes with more descriptive titles.

During these sessions, I found it necessary to revise the labeling of some categories to be more specific in capturing participants’ meanings and how they connect to this research. For example, the label *teacher collaboration* did not provide much information about the data in the category. What did they feel about collaboration? How did collaboration affect them? For example, the pattern code *Teacher’s Feelings about Collaboration* was divided into four pattern codes based on participants’ experiences with collaboration and included *Collaborative Community Online, Collaborative Community Offline, Vulnerability in Collaboration,* and *Supporting Collaboration.* Peer debriefing also led to merging pattern codes into larger groupings, which brought out broad themes in the data. Codes, such as *existing PD opportunities* and *barriers to PD,* were placed into a broader pattern code called *Barriers to Traditional PD.* The change came about due to comparisons revealed that participants had many existing beliefs about PD being offered from the school site (see Figure 4.6).
Round two pattern coding. During the second round of pattern coding, 15 pattern codes were finalized. These 15 pattern codes with definitions are displayed in Table 4.15. Once each pattern code was well-defined, another session of peer-debriefing occurred. The individual codes that helped define the pattern codes were analyzed again for alignment. For example, the open codes *motivation to improve*, and *I can adapt* were moved to the pattern code *Sharing Success*. The process of reflecting on alignment also led to alignment in the language of some pattern codes. For example, the pattern codes *designing and Planning PGW, Managing and Monitoring PGW, and Reflecting and Evaluating PGW* were combined into one pattern code for more simplicity and specificity.
to *Discussing Best Practices*. My goal in the second round of coding was to reorganize and arrange the data in a meaningful way so that codes could be connected logically and placed into categories and broader themes (Charmaz, 2014; Saldana, 2016).

**Identifying themes.** Finalized pattern codes were sorted to help identify categories and themes. I printed codes on strips of paper and sorted them in a fluid and dynamic process (Corbin & Strauss, 2008). To develop categories from codes, I used a code mapping strategy identified as categories to categories by Saldana (2016). The categories to categories strategy allowed me to take multiple pattern codes and build more streamlined categories incorporating multiple ideas identified in the pattern codes. I analyzed the blended categories to develop themes via a process of codeweaving (Saldana, 2016). Codeweaving combines different levels of codes, categories, and concepts to develop themes that incorporate many ideas in as few sentences as possible (Saldana, 2016). Figure 4.7 illustrates the process I utilized to create the themes.

![Figure 4.7. Map of codes, to categories, to themes.](image-url)
Table 4.15. *Final Pattern Codes*

<table>
<thead>
<tr>
<th>Pattern Codes</th>
<th>Pattern Code Definitions</th>
<th>Example Excerpt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engagement Online</td>
<td>Codes that highlighted participant’s feelings of engagement online during the innovation.</td>
<td>“Getting their [participants] feedback weekly online was very motivating for me.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Sabrina</td>
</tr>
<tr>
<td>Engagement Offline</td>
<td>Codes that highlighted participant’s feelings of engagement offline during the innovation.</td>
<td>“When we would see each other during lunch we would ask if they completed the work this week or have a conversation about our postings.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Katrina</td>
</tr>
<tr>
<td>Expectations of Innovation</td>
<td>Codes that represented participants thoughts on past, present, and current PD.</td>
<td>“I am trying to do as many professional developments as I can so I can become better and better in order to meet or exceed those expectations.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Allison</td>
</tr>
<tr>
<td>Outcomes of Innovation</td>
<td>Codes which indicated expectations of participants.</td>
<td>My expectations are learning about how to effectively use group work to similar better assessment results.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Samantha</td>
</tr>
<tr>
<td>Opportunities for Reflect in Dialogue</td>
<td>Codes which denoting participants reflecting on classroom practices together such as: how do you, can you share, I like that you.</td>
<td>“This year I have noticed a dichotomy in my classes. Half seem eager and willing to work in groups and the other quietly refuse. How do you get the groups to be interactive? How do you specifically get the groups to become comfortable working with each other?”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Samuel</td>
</tr>
<tr>
<td>Barriers to Traditional PD</td>
<td>Codes that highlighted difficulties in collaboration such as: buy-in, time, forced participation, and away from the classroom.</td>
<td>“The thing that bugs me the most is when people are getting professional development, they often have to leave their classroom”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Katrina</td>
</tr>
</tbody>
</table>
Table 4.15. *Final Pattern Codes Continued*

<table>
<thead>
<tr>
<th>Pattern Codes</th>
<th>Pattern Code Definitions</th>
<th>Example Excerpt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborative Community Online</td>
<td>Codes presenting participants' levels of comfort online</td>
<td>“I am more willing to actually voice my opinion online”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Grant</td>
</tr>
<tr>
<td>Collaborative Community Offline</td>
<td>Codes presenting participants' levels of comfort offline</td>
<td>“In person I can be more sarcastic, still professional but goofier.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Katrina</td>
</tr>
<tr>
<td>Vulnerability in Collaboration</td>
<td>Codes indicating the importance of vulnerability in collaboration, such as honesty, openness, and truthful</td>
<td>“There wasn't any judgement we were all there for the same reason to be better, learn and learn from each other.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Sabrina</td>
</tr>
<tr>
<td>Supporting Collaboration</td>
<td>Codes that denoted the importance of alignment and school culture</td>
<td>“More collaboration would also support common language for students when going from class to class if we are all using similar structures.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Angie</td>
</tr>
<tr>
<td>Barriers to PLC Collaboration</td>
<td>Codes that highlighted difficulties in collaboration, such as buy-in, blame, relationships, time, teacher independence</td>
<td>“Some teachers are always angry and looking for negative things to complain about instead of collaborating to find solutions.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Jane</td>
</tr>
<tr>
<td>Discussing Best Practices</td>
<td>Codes calling attention to participants sharing examples of classroom practices/strategies.</td>
<td>“To access prior knowledge, I utilize quick writes during my warm up time. They can write about past experiences such as working with groups &amp; how this has been helpful or a negative experience.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Maria</td>
</tr>
<tr>
<td>Sharing Success</td>
<td>Codes that indicated teachers expressed successful, such as increased grades,</td>
<td>“Providing sentence starters/frames has greatly facilitated more conversation</td>
</tr>
<tr>
<td>Pattern Codes</td>
<td>Pattern Code Definitions</td>
<td>Example Excerpt</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Sharing Struggles</td>
<td>Codes that indicated teachers feel unsuccessful, such as teacher uncertainty, difficult student behavior, lacking management strategies</td>
<td>“The most difficult part is just getting students motivated to get the work done and to start the work.” -Grant</td>
</tr>
<tr>
<td>Reflecting on Implementation</td>
<td>Codes showing teachers reflecting on their learning, such as I tried, I want to, I was able to, I need to, I realized.</td>
<td>“I realized, I have been missing the accountability with student-student interactions and peer grading.” -Justin</td>
</tr>
</tbody>
</table>
Through the process of peer debriefing with my dissertation chair, two ideas emerged regarding the data. The first was to connect the process codes regarding participants' thoughts on implementing productive group work. This switch helped make connections between what teachers knew about productive group work and what they learned about productive group work. The second idea discussed was the idea of participants’ feelings related to their participation in the innovation. Focusing on statements that identified how participants felt helped connect what teachers sensed about PD before and after their participation.

Member checking occurred through a meeting with over half of the participants who participated in the blended collaborative PD. The innovation was completed during the spring of the previous school year. Due to scheduling, teacher turnover, and other issues outside of my control, only 14 participants were able to join the peer debrief session via Google Meets. I presented participants with the three themes that emerged and discussed what I had learned about their participation, collaboration, and growth in productive group work. They commented on the process and how it was motivating to work on a district initiative and a topic they were more interested in learning. For instance, Penny said, “All the participants were able to work and grow together in a cohesive manner to better our understanding of productive group work. To illustrate this, Cameron claimed, “I enjoyed talking about what others were doing, comparing notes, and sharing strategies and techniques.” It was also stated that the process was easier because collaboration occurred with like-minded colleagues who also wanted to learn about productive group work. Overall, participants enjoyed the blended environment and described feeling in control of their learning. Penny stated, “new way or platform to
interact with them in a way that made me have more comradery with them” about working with her colleagues online, and Angie said, “I liked when we all got together at the face-to-face meetings to interact” about the time spent face-to-face.

**Presentation of Findings**

The following three themes emerged from the qualitative data: (a) Participants perceived improved outcomes from the blended collaborative PD over existing PD opportunities, (b) Participants expressed the blended collaborative PD encouraged them to build a collaborative community, and (c) Participants agreed that the blended collaborative PD helped develop their teacher efficacy. Each of these is represented below with verbatim quotes, examples, and interpretations. Table 4.18 provides a summary of these themes.

**Table 4.16. Themes that Emerged from Qualitative Data**

<table>
<thead>
<tr>
<th>Themes</th>
<th>Categories</th>
</tr>
</thead>
</table>
| Participants perceived improved outcomes from the blended collaborative PD over existing PD opportunities | • Addressing individual preferences increased engagement  
• Incorporating participant expectations increased results  
• Continuous collaborative reflection increased performance |
| Participants expressed the blended collaborative PD encouraged them to build a collaborative community | • Building collaborative relationships encouraged vulnerability  
• Creating community sustained collaboration |
| Participants agreed that the blended collaborative PD helped develop their teacher efficacy | • Ongoing sharing increased teacher efficacy  
• Regular dialogue around implementation encouraged growth |
Theme 1: Participants perceived improved outcomes from the blended collaborative PD over existing PD opportunities

Professional development provides teachers with opportunities to develop personally and professionally as a way to contribute to the development of a learning organization where the emphasis is on quality and learning (Blandford, 2000). Research over the past twenty years has brought about some consensus among educational researchers regarding effective teacher PD. Some features of effective teacher PD within the literature include focusing on content and student achievement, job-embedded PD taking place within the school day, continuous support of learning experiences over time, active teachers' participation in creating learning experiences, and collaboration among teachers (Borko, 2004; Desimone, 2009; Easton, 2008; Loucks-Horsley, Love, Stiles, Mundry, & Hewson, 2003). Participants in this study expressed their attitudes and beliefs related to the blended collaborative PD they experienced in this study.

Teachers need ongoing PD to improve their content knowledge and pedagogical skills, and build trust among the learning community so teachers may question and critically examine their practice (Loucks-Horsley et al., 2003). The characteristics of PD have been grouped into the six categories below: (a) duration, (b) focus on content and pedagogy, (c) goal orientated, (d) job-embedded learning, (e) active learning, and (f) teacher collaboration.

During the first teacher swap meeting, each participant completed a KWL chart that described their expectations of the blended collaborative PD. During the final teacher swap meeting, reflections of their experience in the PD was collected. The eight semi-structured interviews allowed a select number of participants to describe their
experiences in more detail. The qualitative data uncovered multiple categories within the Theme. Theme one includes the following categories: (a) addressing individual preferences increased engagement, (b) incorporating participant expectations increased results, and (c) continues collaborative reflection increased performance.

**Addressing individual preferences increased engagement.** Multiple researchers have identified inadequacies in current professional development which can lead to unengaged participants. Some of the inadequacies include lack of content-specific knowledge and time to practice new skills (Garet et al., 2001; Hechter & Vermette, 2013; Hsu, 2016; Prieto Rodriguez, 2015; Tondeur, van Braak, Ertmer, Ottenbreit-Leftwich, 2017). During the semi-structured interviews, participants were asked about existing PD opportunities. Their answers expounded on the differences between their experiences in existing forms of PD compared with their participation in the blended collaborative PD. Based on participants responses, many of the existing PD opportunities did not meet the criteria for effective PD discussed in Chapter 2. Katrina claimed there was too much “red tape” to attend PD that teachers feel is beneficial. In turn, many participants expressed that PD opportunities did exist but wanted more. Katrina and Jane shared their thoughts.

**Katrina:** Our school often gives us opportunities for professional development. I think maybe that could happen more.

**Jane:** If there were more opportunities for practices that will help my students in this same format, I think that is something I would be interested in.

Teachers often miss instructional time with their students, give up personal time on nights, weekends, or summer break to attend PD opportunities. Traditional district and
school workshops are frequently offered during the school day, requiring teachers to obtain a substitute, impacting school budgets, student learning, and teacher preparation time. Katrina explained, “The thing that bugs me the most is when people are getting professional development, they often have to leave their classroom, and the school is not equipped to cover all those teachers being out.” While online learning opportunities can reduce the time teachers spend away from the classroom, these opportunities can increase teacher’s ability to connect with others on campus. Penny realized, “I don't interact a lot with the English teachers, which kind of surprised me, and it was nice to get to know them a little better.”

Findings in this research were similar to what Rovai and Jordan (2004) found in their research. Flexibility was linked to participant satisfaction. Six out of the eight participants interviewed expressed their willingness and the need to participate in similar forms of PD. Katrina stated, “If there were more opportunities to learn practices that will help my students in this same format I would be interested in participating.” Similarly, new teachers Grant and Penny said they would “definitely participate again”.

While, many participants described the existence of PD opportunities, they frequently shared they need more time to reap the benefits. The most frequent PD opportunities shared were new teaching meetings, instructional coaching, learning walks, and observation cycles. While these PD opportunities exist Sabrina said, “I don’t think they are used as much as they could be.” Katrina’s suggested, “Our school often gives us opportunities for professional development but I think maybe it could happen more.” Opportunities exist for collaborative PD, but participants noted that more opportunities to participate in well-designed, structured PD would benefit their classroom practice.
Some participant’s indicated blended courses may be more effective in promoting communication and discussion among participants which is evident in the literature (Easton, 2008; Loucks-Horsely et al., 2009). For example, Jane stated, “She sent me a message about one of my comments, we discussed it more during our face-to-face meeting, and we are still having an ongoing conversation about that.” Others agreed that online conversations led to deeper face-to-face conversations which still continued after the PD.

Participants expressed engagement both online and offline. Penny stated, “The discussion format was beneficial because it allowed us to not only ask questions but get responses back.” Others expressed similar sentiments. These sentiments were split, while some participants preferred online over offline and vice versa. Angie, a veteran teacher, shared, “I think to build a stronger community, and more face-to-face meetings are needed.” While Grant, a first-year teacher, believes for him, “online is more straightforward and to the point.” Grant also pointed out “online platform can help us get immediate responses and can follow up with face-to-face.” Others shared Grant’s perspective, and Sabrina summed it up well in her interview, stating, “It really depends on the person, but the majority are new and want to learn from each other.” Only one participant, Penny, expressed feeling more comfortable sharing opinions online versus offline.

The blended collaborative PD gave teachers the autonomy to select their learning objectives and the learning environment in which to collaborate. Research indicates that teachers perceive collaboration as being more effective because of the feedback, support, and opportunities for reflection and discussions (Sanchez, 2012). The data analysis
indicates that a blended approach to PD combines the benefits of online learning and face-to-face interaction in a more engaging way (Caulfield, 2011; Locke, 2006).

**Incorporating participant expectations increased results.** Effective teacher PD incorporates opportunities for teachers to become actively engaged in their learning (Garet et al., 2001). During the first face-to-face, most participants expressed expectations in learning more about productive group work. Only one participant, Penny, expressed an expectation of “learning from others.” Some examples of expectations include the following:

- **Katrina:** I hope to improve in my ability to hold students accountable in group projects.
- **Samantha:** My expectations are learning about how to effectively use group work to similar better assessment results.
- **Justin:** My expectations are that I will learn and obtain new tools and strategies by the end of the program.

While most participants expressed their expectations for learning more about productive group work, their expectations became more specific over the course of the innovation. What stood out the most from these reflections was the overwhelming message that students, like teachers, learn better in collaborative environments. Previous research has found teachers’ efficacy to be related to the implementation of teaching strategies and student achievement. Teachers with lower levels of efficacy are more pessimistic about student motivation and believe in strict classroom regulation, and rely on extrinsic inducements and negative sanctions to get students to study (Woolfolk, Rosoff, & Hoy, 1990). Jane provided an example of this idea when she stated, “Most
teachers don’t change until they are required to by their supervisors.” Allison echoed it when she stated, “We have to motivate ourselves to become better teachers, and not all teachers are motivated to change and improve their teaching.” Students' performance was a leading factor for many when it comes to motivating change. Jane said, “Teachers change when they realize they aren't getting the results they were expecting.” Angie shared her belief that it is “rewarding when you get to see one student progress and develop in their writing and reading because of a tweak you made during a lesson.” Participants collaboratively increased their efficacy in implementing productive group work.

They realized the collaborative nature of implementing productive group work with their students increased students’ ability to interact and retain information. After all, according to Vygostsky (1987), learning has its basis in interacting with other people. Examples of reflections from various teachers are shown below in descending order from more years of experience to least.

Angie: I learned, my students will have the benefit of "doing group work" better, with better accountability, and with better outcomes that will benefit them now and, in the future, interpersonal interactions and working through issues with different personalities.

Samuel: The importance of using these strategies in my classroom centers around the students feeling more accomplished because they had ownership and collaboration for their learning.

Katrina: Our students learned that life is about collaboration and sharing of ideas and not just in the classroom.
Aaron: Students will be able to retain information better and feel more engaged in the process.

Grant: Preparation on my part helps students feel more at ease with working together productively.

Despite differences in the number of years of experience in education, participants in this study shared similar beliefs about student retention of knowledge.

Planning how to use the new curriculum, implementing new teaching methods, analyzing student work, observing colleagues, reflecting on classroom experiences, and discussing teaching and learning with other educators are all examples of active learning. Active learning is often centered on the learner and involves PD that builds on the learner’s strengths, interests, and needs (Bransford et al., 2000). From the qualitative data, it is evident blended PD can allow for differentiation and the ability to offer a variety of options when it comes to topics, concepts, and contents (Wells, 2007; Arney, 2015; Duffy, Kirkley, Del Valle, Malopinsky, Scholten, Neely, & Chang, 2006).

**Continuous collaborative reflection increased performance.** Collaborative professional development is defined as teachers working together to construct knowledge by using their classroom environment and instructional strategies as the basis for investigation (Palmisano, 2013). Teacher collaboration can be considered a powerful professional development tool. It is the interaction between at least two equal parties who work towards a common goal while engaging in shared decision-making (Poekert, 2012). Teachers share in the process of setting goals and implementing plans with an understanding that there is a shared sense of responsibility, a reciprocated level of respect, accountability, and equitable distribution and exchange of available resources
(Poekert, 2012). A mix of traditional on-site instruction with innovative learning technologies (Lim & Yoon, 2008) and a combination of face-to-face and online experiences where learners are not always at the same location (Owston, Wideman, Murphy, & Lupshenyuk, 2008).

Participants expressed feelings of gratitude and appreciation for learning alongside their colleagues throughout the six-week blended collaborative PD in their final reflections. Samuel and Maria, who initially expressed feeling that their colleagues were not as effective in helping student’s master content, stated the following in their final reflections:

Samuel: I discovered that I actually benefit in a huge way from interacting with my peers.

Maria: In spite of having always preferred to learn on my own in the past, I also learn better when working with other people.

Reflecting on their participation showed a change in their perceptions about collaborating while developing professionally to build knowledge and update instructional practices.

The data revealed that participants grew collectively. Collective teacher efficacy is defined as shared ideas of teachers in a school and to what extent they believe as a whole they can affect student learning (Hoy & Miskel, 2008). For schools, collective efficacy refers to teachers’ judgment in a school that the staff as a whole can organize, execute, and impact student achievement (Yost, 2006). Samuel further explained this idea during the semi-structured interview. He explains, “Normally, I am just connecting with the [subject] department, but I gained camaraderie with a new group of teachers. Conversations with my peers really helped me gain a variety of different strategies.”
Research has supported that PD which incorporates collaboration is more effective than traditional practices (Hallam, Smith, Hite, Hite, & Wilcox, 2015; Strahan, Geitner, & Lodico, 2010; Wallace, 2009).

Penny, a newer teacher in the group, maintained high feelings about the collaboration after participation. She stated, “I felt pretty comfortable talking about my problems or dilemmas with the group. Overall, it was really useful to learn from other teachers who have more experience than me.” It is important to point out that the perceived value of PD can depend on particular school culture and initiatives (Bigsby & Firestone, 2017; Spires et al., 2012). Additionally, PD can hold different values depending on the teacher’s level of experience (Masuda, Ebesole, & Barrett, 2013). Masuda, et al. (2013), found that new teachers tended to skip the theoretical for more practical offerings that are quick to implement in the classroom and valued time spent collaborating with more experienced teachers.

Furthermore, participants expressed opportunities for instructional coaching, learning walks, and observation cycles exist; they are not widely available. Noted were the participants’ claims that observation cycles in particular can provide the most impact on their classroom instruction.

Sabrina: I learn so much from learning walks and having people come in and observe classrooms.

Jane: Being able to go and observe Cameron in his Japanese class, even though it is not French, was really helpful and I gleaned a lot from that visit.”
Penny: I learn best by talking it out with others and wish I had made more time to observe other teachers.

Allison: What is really helpful from learning walks is having people come in and observe classrooms me and provide constructive feedback.

Learning walks, observations, and constructive feedback were among the activities participants found useful.

One point that stood out was how these forms of collaborative PD allow for personalized feedback. Sabrina stated, “The most effective part of an observation from a peer or administration is the constructive feedback.” Similarly, Grant believes that “hearing feedback is not only personally beneficial but can be beneficial as a school community.” As a new teacher, Grant expressed that feedback was very encouraging. Participant Allison explained how her participation in the collaborative PD was beneficial because of the feedback from her colleagues. She said, “Getting feedback from everyone in the forums has really made me feel better about my own best practices.” Katrina, who was very open about her lack of collaborative group work in the classroom, said getting feedback from other participants “was very helpful.”

Teacher feedback influences school climate by creating environments that legitimate help-seeking, problem-solving, and instructional experimentation (Ross, Hogaboam-Gray, & Gray, 2004). Collective teacher efficacy has been linked to school processes that promote teacher ownership in areas like shared school goals, shared decision making, positively perceived school change, and empowering leadership (Ross et al., 2004). Based on participant’s responses, there are processes in place for PD that
provide constructive and positive feedback to help teachers grow professionally. Still, there is a need for more opportunities to boost self and collective efficacy among staff.

Another prominent point aligned to educational research that was evident in this study is reflecting on one’s learning and implementation of new strategies and practices. Liberman and Mace (2010) researched teacher reflection and found that when teachers work together to share and observe, they are encouraged to grow their professional practices. Other participants expressed similar thoughts in this research. Penny stated, “Teachers should constantly reflect on their practices in order to see what’s working” and Samuel expressed the blended collaborative PD allowed him “to reflect on my classroom practices.” Grant said, “When something doesn't work well, I know I need to reflect and revise my practice.” While most participants expressed that reflecting is essential and said the innovation allowed them the time to reflect, others like Sabrina openly shared, “I don’t take enough time to reflect.” The need to create more opportunities for teachers to reflect upon their classroom practices is evident in the data.

Collaborative PD is more popular among teachers because it adds to instructional strategies and student learning (Poekert, 2012). Participant responses closely align with research that supports collaborative PD over traditional models (Hallam, Smith, Hite, Hite, & Wilcox, 2015; Strahan, Geitner, & Lodico, 2010; Wallace, 2009). This research and several other studies have shown that teachers who work in a collaborative environment are more engaged, learn more, have a greater appreciation for their PD, and value their students more (Hallam et al., 2015; Strahan et al., 2010; Wallace, 2009). Teacher perspectives of their PD experiences can help refine the definitions stated above and may lead to more effective teacher instruction and student performance.
Theme 2: Participants felt the blended collaborative PD encouraged them to build a collaborative community

Several studies showed that teachers who work in a collaborative environment are more engaged, learn more, have a greater appreciation for their PD, and value their students more (Hallam et al., 2015; Strahan et al., 2010; Wallace, 2009). While Theme one illuminated teachers’ feelings about participating in the collaborative PD and touched on the benefits of collaboration when used alongside PD, Theme two dives deeper into participant’s positive and negative experiences with collaboration on campus and throughout the innovation. Two categories were discovered to help explain how teachers’ felt about collaboration: a) building collaborative relationships encouraged vulnerability and b) creating community sustained collaboration.

Building collaborative relationships encouraged vulnerability. Teacher collaboration plays an important role in PD, especially for modeling cooperative behaviors for students (Coke, 2005). In order to successfully implement innovative, student-centered, and collaborative learning strategies, proficient collaboration among the teaching staff is required (Borko, 2004; Bransford et al., 2000; Little, 2002; Meirink, 2007; Shipley, 2009; Slavit, Kennedy, Lean, Nelson, & Deuel, 2011). Participants expressed the need for more collaboration across the district, school, department, and professional learning communities (PLC). Participants shared some reflections that demonstrate the need for more opportunities to collaborate.

Jane: I wish [collaboration] was more district-wide because I don’t have other French teachers that I can collaborate with, and that is a bit
unfortunate. Cross-district collaboration could allow us to align lessons to benefit students even more.

Angie: We collaborate with our PLC teams because PLC is the only built-in time to collaborate. Beyond that, it would be up to the individual teacher to seek out the collaboration because, normally, we don’t have the opportunity to collaborate outside of content levels.

Participants expressed that more opportunities for collaboration would be helpful in the context where this study took place.

The word alignment stood out as it came up over twenty-three times during the eight semi-structured interviews. Participants expressed more collaboration would lead to more alignment vertically throughout departments and horizontally across departments. Penny stated, “There is a lack of vertical alignment and cross-curricular collaboration. Aligning lessons would benefit students.” And Sabrina, a special education teacher who frequently co-teaches, stated that “more school-wide collaboration can help all students no matter who they have as a teacher.” Special education teachers often move from class to class to support their caseload of students, and if there was more alignment, she believes her “job would be easier.”

Beyond making their jobs easier, many participants described the benefits of collaborating and explained their beliefs about the benefits more collaboration would have on student achievement and teachers’ instructional strategies. Examples of participant responses to the benefits are below:
Angie: Collaboration across the school can support a common language for students. So, when they are going from class to class, they are familiar with the structure and language.

Grant: I feel like my only resource is to ask my coworkers. My coworkers are a real benefit for me because I am new to the teaching and the school. Being able to ask and depend on them for support is really positive.

Jane: When we collaborate, more people can discuss about what they are doing, compare notes, and strategies to see what is working for students.

Katrina: Collaboration allows me to go outside of my classroom and learn new things from my colleagues to try to make my teaching better.

Penny: It is so rewarding when your PLC creates a lesson together and then you get to see how it impacts student progress and development.

Creating a common language for students, being a resource for one another, having conversations that help educators make connections to benefit students, and gaining insights from fellow educators were the benefits participants noted related to collaboration.

When designing blended learning opportunities, many factors must be considered to increase effectiveness. Some factors to consider are learner readiness for group work, providing scaffolding to build skills, establishing a healthy balance between structure and autonomy, and establishing relationships to build a sense of community.
Group activities need to be actively and closely monitored and the group task relevant for the learner (Brindley, Blaschke & Walti, 2009).

Overwhelmingly, participants shared how their feelings of comfort and community increased with their colleagues. Katrina, one of the more veteran teachers, said the PD “it encouraged [her] to get more familiar and comfortable with some of my colleagues” and thinks her “interactions since have been more personal.” Some like Penny expressed the blended platform allowed them “build comradery.” Many like Angie said this community came from hearing “more about how other teachers are practicing and tap into their tools and information”. Participants shared their belief that the experience could have been longer. Both Grant and Penny said a more extended experience would have allowed for a stronger community.

The feeling of trust in the community allowed participants to share openly. In her interview, Jane said, “I appreciate how some people were like I don’t do that, I am really bad at that.” Similarly, Allison, who has been teaching science for three years, stated, “There wasn't any judgment we were all there for the same reason to be better, learn and learn from each other.” She also stated, “We could talk about what we could do to make it better.” The idea of being vulnerable came up for others as well. Katrina stated, “I made it obvious I don’t do much group work in my classroom, and to some extent, it is kind of embarrassing.” Jane commented on Katrina’s vulnerability by stating, “People who were super honest helped create an atmosphere of honesty in the group,” and about her own, “it was encouraging to me which made it feel safe to say the truth and what I wanted to be better.” Effective teacher PD is community-centered and encourages collaboration in learning (Bransford et al., 2000). Interaction's teachers have with their
peers about instruction influence teacher learning and have been shown to change the classroom positively (Borko, 2004). Collaborating and sharing ideas can ultimately lead to changes in instructional strategies (Bruce, Esmonde, Ross, Dookie, & Beatty, 2010).

What also stood out was the feelings of newer teachers, who were comfortable sharing their classroom struggles and concerns, but claimed veteran teachers are less comfortable with growth and change. Therefore, they don’t believe they need PD. Grant, the participant with the least years of experience, claimed veteran teachers “are very set and comfortable with their own routines, and it is hard for them to listen and at least consider a change.” Still, he also wanted to grow by sharing concerns and getting feedback from more veteran teachers. Samuel was the only veteran teacher who, during the first face-to-face meeting, claimed, “For an experienced teacher like myself, I don’t think we need anything else.” Although later, during his semi-structured interview, Samuel retracted, stating, “In the last couple of weeks, we have been pushed to collaborate a lot more and share our best practices.” Effective PD provides teachers with opportunities to develop personally and professionally (Bransford et al., 2000).

When teachers share critical, reflective conversations, they can work together to connect new knowledge to their situation and context (Darling-Hammond, 2006). Teachers can build a culture of collaboration by participating in teacher PD that encourages them to engage in open dialogue (Darling-Hammond, 2006; Zambo & Zambo, 2008). The teachers in this innovation expressed how they were able to build collaborative relationships with other participants. Some of the significant takeaways to working together during the collaborative PD are shared below.
Allison: There wasn't any judgement we were all there for the same reason to be better, learn and learn from each other.

Jane: Being able to share ideas and thinking in a safe group results in tremendous growth and learning.

Maria: The things I put in may have seemed like a start for me, as I was looking at things from a solo perspective, but now it is clear to me that the cycle of learning had to be fueled by the things and perspectives my colleagues provided.

Katrina: I discovered that I actually benefit in a huge way from interacting with my peers.

Samuel: In spite of having always preferred to learn on my own in the past, I also learn better when working with other people.

Grant: Getting feedback from everyone in the forums has really made me feel better about my own best practices.

Angie discussed how her participation encouraged more lunchroom conversations and an ongoing email thread with one of the participants:

When we would see each other during lunch, we would ask if they completed the work this week or have a conversation about our postings. And online, when I asked for resources, others would freely share them. It has even led to a longer conversation through email about a strategy from the book.

As a result of the study, participants had more conversations and shared resources more readily. Teachers’ sense of efficacy leads to greater collective efficacy. As collective teacher efficacy in schools increases, teachers' desire to enhance knowledge and
instructional strategies through various PD and self-directed learning experience increases (Pajares, 1996).

**Creating community sustained collaboration.** When the characteristics of highly efficacious teachers are combined with a strong sense of collective efficacy, staff development can align with the values and attitudes of the organization (Bandura, 1997). School and district leadership is critical to the development and maintenance of schools with collective efficacy. Strong leadership fosters collaborative environments and helps staff overcome any difficulties in collaboration (Tschannen-Moran & Hoy, 2004). Some of the greatest barriers expressed by participants were teacher buy-in and isolation.

Teacher buy-in was brought up in multiple layers. The most noted barrier was the veteran teacher’s unwillingness to change their routine. This point was also made by the most veteran teachers about themselves and others and new teachers about their more experienced peers. Angie, a veteran, stated, “For an experienced teacher like myself, I don’t think we need anything else” similarly, veteran Katrina claimed, “we believe our habits are productive and working and don’t feel the need to change.” The feeling among these veterans was echoed by their peers who were consistent with the message that most teachers are, as Jane put it, “not interested in putting effort into possibly doing things differently.” The newest teacher Grant also claimed there are “a few who are very set and comfortable with their own routines, and it is hard for them to listen and at least consider a change.” It stands out that the most significant barrier to collaboration was an unwillingness or need to change. Participants equated change to collaboration.

Jane pointed out that it might not be an issue of veteran versus newbie but “pride or fierce independence that keeps a lot of groups from collaborating.” The participants’
overall sentiment was that most people do not want to change, and changing in coordination with collaboration “takes time.” Katrina said, “in order to collaborate you have to spend time with others, and often people feel like their time is better used elsewhere.” Teachers feel that, like PD, collaborating takes time they do not have.

The second Theme, isolation, came in two forms physical due to proximity and emotional due to lack of connection or relationship with others on campus. Jane, who teaches French, automatically isolates her as she is the only teacher on campus who teaches her content, but she expressed the campus size makes it harder to collaborate with people who are not in close proximity of her classroom. While her case is unique, others made similar statements about their time in the collaborative PD. Allison stated, “Participating helped connect me with others on campus I don’t normally see.” In the data, the size of the staff on campus appeared to play a part in building relationships to have more effective collaboration and increase collective efficacy on campus. Schools with a higher sense of collective efficacy have been shown to have increased motivation, student achievement, collaboration, and overall job satisfaction (Stop & Smith, 1995).

Isolation due to lack of relationship building was also discussed. The importance of liking the people you have to or want to collaborate with came up multiple times. Samuel suggested, “Sometimes we don’t know, respect, or even like the people we are asked to collaborate with.” This went well with the greater issues brought up by Katrina, when she indicated, “There is so much turn over, each year the PLC I am working with changes which makes it difficult to build the team that is supposed to collaborate.”

Chapter 2 of this action research examined sociocultural theory, social learning theory, and adult learning theory to better understand how relationships affect learning.
Participant’s experiences reiterated that collective efficacy starts with building relationships among staff members, which in turn encourages more open discussions and reflections on classroom practices.

When evaluating the effectiveness of the innovation, teachers offered their ideas for how the PD could have been improved. Suggestions for change offered ideas that are consistent with other researcher’s findings regarding best practices for teacher PD, including collaboration and time to discuss and debrief with colleagues (Meirink, 2007; Shipley, 2009; Slavit et al., 2011). For the purposes of this action research, suggestions for change reference ideas participants submitted during their interviews when asked what, if anything, could be done to improve communication and collaboration during the PD.

Feedback from participants indicates that they felt a sense of community while participating in online learning. However, some expressed more comfortable with face-to-face interactions compared with online connections. At least four participants expressed having more face-to-face meetings would increase community engagement in the online forum. Angie was very vocal, making multiple statements during the semi-structured interview, such as: “I liked when we all got together at the face-to-face meetings to interact,” “it helped to create stronger bonds,” “weekly would have created a stronger community”, and “online you don’t get all the non-verbal communication and cues.” Data analysis indicated that a blended approach to PD combines the benefits of online learning and face-to-face interaction, encouraging personal connections while still providing opportunities for practice, peer feedback, and growth (Caulfield, 2011; Locke, 2006).
While some participants saw the ability to collaborate as a teacher strength, others saw collaboration as an opportunity to improve their practice. Studies have shown that collaboration between teachers can be more impactful in classroom practices than larger-scale traditional PD models (Fenton, 2017). Collaboration occurred during the face-to-face meetings, but collaboration was also encouraged in the online discussion boards because of this idea. Although online directions stated to respond to at least 2 of your peers, after participants' initial posts, there were rarely follow-up conversations. Three of the eight participants interviewed reported a desire for more online collaboration with fellow teachers. Katrina, in particular, was frustrated at the lack of back-and-forth dialogue on the discussion boards. She stated, “I noticed that when we responded to discussion questions each week, I rarely received comment or feedback, and a few times I asked others to share a resource and never got it.” Part of the blended collaborative PD was the initial discussion post and responses to peers; however, participating in the PD was optional and there was no extrinsic motivation for teachers to respond to each other. Jane and Angie suggested more time to complete initial posts online and to remove deadlines on peer responses to encourage others to go back, read, and respond to peers' initial posts. Angie indicated that “…not having set due dates online would encourage people to go back and do things they did not complete. Having the system open with the expectation that if a teacher can’t post one week for whatever reason, it is still their responsibility to go back and respond to the discussion questions and their colleagues.” This suggestion alludes to a lack of collaboration in the online aspect of the blended collaborative PD. The notion that collaboration occurs face-to-face more than online is evident in participants who want more face-to-face meetings.
Theme 3: Participants agreed that the blended collaborative PD helped develop their teacher efficacy

Teacher efficacy constitutes a set of expectations that contribute to student achievement (Ross & Regan, 1993; Ross, Bruce, & Hogaboam-Gray, 2006; Mascall, 2003; Muijs & Reynolds, 2001), teacher motivation (Guskey, 1984; Midgley, Feldlaufer, & Eccles, 1989), persistence in achieving goals, and retention of teachers in the profession (Ross, 1998). Teachers who believe they have the ability to affect student learning and achievement are more willing to implement challenging strategies to achieve their goals with students (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Theme three was uncovered via two categories (a) ongoing sharing increased teacher efficacy and (b) regular dialogue around implementation encouraged growth.

Ongoing sharing increased teacher efficacy. The participants in the innovation were purposively chosen to range in years of experience, subject areas, grade levels taught, but their knowledge of productive group work was not pre-surveyed. Despite their previous knowledge of the PD topic, many reported an increase in their understanding and an expanded toolkit to implement productive group work. In the post reflections, eight out of fifteen participants stated they believed their knowledge on the topic had increased. Cameron stated, “I could use this in my classes for more engaging lessons, not just long-term projects but as a daily class participation element of my practice.”

Similarly, Penny said, “I tend to go with the more familiar PGW, what I am comfortable with, but this PD will help me expand my PGW horizons and try new things.” Lastly Jane said “I added to my teaching toolbox. I want to try all the new and different ways to facilitate the group work I learned about.” These responses reflect that
participants increased their understanding and took away some useful strategies for implementing productive group work. Sam, a veteran teacher stated, “I already knew the fundamentals of PGW, but having more structure was something I was missing.” This is evidence that even a participant who expressed they may already had a strong knowledge base on the topic but could still benefit from the resources and collaboration.

This study defines teacher efficacy as one's confidence in their ability to impact student learning (Hoy, 2000). For this research, increases in efficacy were calculated using quantitative means and reinforced by qualitative participant data. Increases in efficacy refer to statements made by participants that reference a positive outlook on learning and implementing group work. Participants stated they felt accomplished after integrating practices into their classroom. Allison, when references students working together cooperatively claimed, “I feel a sense of accomplishment because I have had some successes in engagement for students who otherwise have not been apt to cooperate with classmates.” Studies by Bandura (1977, 1986, & 1994) have shown that sources of efficacy come from mastery experiences. A mastery experience happens when a teacher successfully implements a new practice. An example of a mastery experience came from Sabrina when she shared, “I created more productive group work opportunities for my students which they appreciated based on their reflection responses.” Sabrina, often shared feelings of defeat in implementing group work due to her special education caseload but was reassured by her students that the new practices she implemented were enjoyable. Sam has similar sentiments about incorporating relationship-building activities in group work. In his post reflection, he shared, “I was surprised at what happened when I incorporated more and better relationship-building activities in my group work.” These
descriptions of increased efficacy revealed how participants and their students benefited from working in the blended collaborative PD without prior knowledge of productive group work.

Of the four sources of teacher efficacy identified by Bandura (1997), the most powerful is the master experience. Mastery experience is the first-hand teaching experience in which teachers perceive a change in student performance (Bandura, 1997). While Bandura (1997) also identified three other sources of efficacy: (a) vicarious experiences, (b) social and verbal persuasion, and (c) emotional and physiological; compared to mastery experiences, the others have been found less influential (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). When analyzing the data, both positive and negative thoughts arose regarding implementation arose. But, what stood out the most was that teachers expressed the least efficacious in impacting the uncooperative groups or individual students. Some participants offered their honest opinions of motivating students to work while others asked questions.

Katrina: If I am honest, I have solely relied on students’ self-motivation for working in groups. I would love to hear best practices for making sure everyone does their parts for a group product to be made with even participation levels.

Samuel: This year, I have noticed a dichotomy in my classes. Half seem eager and willing to work in groups, and the other quietly refuse. How do you get the groups to be interactive? How do you specifically get the groups to become comfortable working with each other?
Other participants responded by trying to solve this problem by assigning participation grades.

Allison: I am still currently trying to figure out the best way to encourage uncooperative group members. Sometimes they will take on the work of the uncooperative student if they think their grade will suffer without that work being done.

Samantha: I usually grade groups all together, but I have on occasion made exceptions & graded some individuals in the group differently than their other group members. If one member is working significantly harder or not at all in comparison to the rest of the group, it is hard to hold them to the same standards their other group members.

Jane: I, too, have given students within the group a different grade, based on just what you said about students working harder/much less than the rest of the group.

Many of their colleagues liked the idea of giving participation grades to motivate individual students. Sabrina said, “I do like that extra participation grade for an accountability thing for students that care about their grades.” Cameron also said, “I like the idea of assigning a participation grade.” And Maria stated, “I like the idea of individual assessments being worth 2x team assessments.”

Another Theme made by many participants had to do with students with disabilities and English learners. Multiple times participants claimed that students from special populations could not be successful in group work.
Jane: I think you have an especially difficult task in trying to do group work successfully with students with learning challenges (IEPs).

Samantha: There were many times when a group’s progress seemed to stall because some team members became disengaged this population does have a large population of students who are not motivated at school.

Cameron: Sometimes it is easier for them to just work by themselves then have other students make fun of them or refuse to work with them. I know this is not good, but I do not know what else to do.

Tim: Putting English learners into homogeneous sets can lead to the tendency to avoid the requirement to engage with English (or other languages used by classmates) when they feel too comfortable with their familiar mode of discourse.

The attitudes expressed in the sample participant responses above suggest that participants focused on the disadvantages of offering special needs student’s opportunities to collaborate as part of the learning process.

While numerous studies have been published that demonstrate the benefits of productive group work or cooperative learning, many teachers still struggle with a common understanding and implementation. The benefits include academic gains across different curriculum domains (Fall & Webb, 2000; Johnson & Johnson, 1999), improved participation in school-based learning (Stevens & Slavin, 1995) and enhanced socialization among peers (Jordan & LeMetais, 1997; Slavin; 1995), including more diverse relationships (Sharan, 1990). Even though the benefits of productive group work
have been widely studied (Cohen, 1994), it is clear that assigning students to groups and asking them to work collaboratively will not necessarily promote cooperation and learning. In the book read by all participants Fisher and Frey discuss group’s work best when they are provided structures to facilitate working together and this happens when students realize the task is interdependent. Meaning teachers must create tasks where students cannot be successful without the help of their groupmates.

Teachers are more likely to persevere if they set goals that are specific, have clear outcomes, and are moderately difficult to achieve (Schunk, 1981). The combination of goals and effort affects teacher practice, including curriculum objectives, teaching methods, assessment practices, and knowledge of subjects, learners, pedagogy, and policy. Teachers willing to try new instructional ideas and persist through obstacles are more likely to sustain new approaches, experiences of success and integrate innovations into their practice. Participants had a goal to increase their knowledge and implementation of PGW. The effort in trying to meet this goal was evident in many responses that included the phrases, “I think,” “I want to,” or “I tried.”

Sabrina: In individual studies class, I don't do much group work because I need to keep my lessons short for students to work on their grades, but I see the need for students with disabilities to practice group work with me so they can do it in their general ed classes. It will be helpful for next year with my co-teachers to backwards plan with group work in mind.
Katrina: I think that if I did Productive Group Work consistently in my class, my students would more quickly be able to fall into the task, knowing what the roles entail & what the expectations are.

Samuel: I can see the benefits of familiarity with an assignment & understanding that learning is a process & a development.

Penny: I think I could be more consistent about having a brief “what’s in it for me” (WIFM) slide so that they see it in writing & hear me explain it out loud.

Tim: It has worked well to have students in the group pair up or form triads to unpack the goals & roles. This gives students a chance to use active listening skills such as paraphrasing & question asking. Giving the groups time to clarify what the objectives and expectations are.

Their responses indicate their reflections on what they learned during this study about collective efficacy and future planning related to students working in groups.

**Regular dialogue around implementation encouraged growth.** It was previously discussed that teachers can experience lameness when they get used to or comfortable with their practices. Many participants said this occurred more with veteran teachers than novice teachers. Lack of change can be a symptom of limited opportunities for teacher collaboration due to the nature of physical space, administration, schedules, and the structures of many schools. Creating professional school communities can help overcome stagnation due to constant isolation by facilitating shared values, collaborative decision-making, and reflective conversations (Louis & Marks, 1998).
Only teachers with five or fewer years of experience discussed working collaboratively with their PLCs to develop and implement PGW, which aligns with data discussed in the local context, which stated only 34.6% of teachers expressed PLC time to be effective.

Allison: My PLC works closely together to plan out units & decide where Productive Group Work will fall within each unit.

Cameron: I have run projects that have been developed by my PLC, though I find that they often suffer from the shortcomings described in the book's introduction

Penny: I consider the group projects that the U.S. History PLC has already created and utilized in the past. It helps that the US PLC develops Newspaper, Oral History, and 3D Theaters for students to work in groups as well as TCI materials.

A range of participants seemed to struggle with determining how to differentiate projects for students. Frequently, sentence frames came up as the only form of differentiation.

Tim: Differentiating to account for the varying literacy levels seems to be a time-consuming part of group projects.

Jane: I think having a "go-to" list of ideas for differentiation would enable me to be able to more quickly & easily do this for the students who need it!

Penny: Occasionally I am able to provide several levels of sentence & discussion frames for students to choose between, which allows for
students who are more comfortable with the language to challenge themselves.

Grant: I need to make sure the students have the proper sentence starters for the topic, vocabulary for the content, steps written out (in English), & an exemplar/modeling.

Even though participants were actively discussing differentiation and scaffolds they often grouped the two together. While, scaffolding and differentiation are similar they are not the same. Differentiation refers to the idea of meeting the individual needs of students (Fisher, Frey, & Everlove, 2009). For example, one student may learn sight words best with flashcards and another may learn sight words best by playing singing a song. Both students are working toward the goal of increasing their reading ability, but each requires help in different ways. Whereas with scaffolding, the goal is for the teacher to slowly step back and allow students to complete tasks independently.

In managing and monitoring one contentious topic was the best way to group students. Participants had many views from homogenous to heterogeneous to allowing students to self-identify groups. The discussion of mixed groups was related to scaffolds for higher performing students, lower performing students, and English learners. Where the self-identifying groups was more an issue of the social emotional aspect of learning in groups.

Samuel: The highest student cannot be placed with the lowest if the range in skill level is too great. I definitely make sure that that highly-performing students are not paired so extremely.
Sabrina: I try to put struggling students with other students who can help them. However, I usually cannot place lower students with really high students.

Samantha: It is problematic to put these students in groups with students who do care and want to do well.

Angie: For the students who are ELLs, I group them with bilingual students to help assist with any conversational language barriers.

Grant: I place EL & SPED students in specific groups, such that they are sitting with someone who is comfortable enough to assist or work with his/her.

Allison: I like to let them choose their groups because then I know almost for certain that they will feel comfortable working in their groups.

Katrina: I don't usually mind the idea of letting students choose their groups and working with their friends.

Penny: I have tried to even let them pick who they want to work with for motivation, but then they usually get their friends to not do the assignment with them.

What was not specifically stated was grouping as a form of differentiation. The same was evident when discussing the implementation of roles and responsibilities. Some participants described how they did this in detail, others expressed wanting to try or be better at assigning roles and responsibility, and some claimed they had never done this when implementing group work. Carol was the only participant who expressed feeling comfortable with assigning roles and responsibilities specific to the task:
You can give students different roles and try to choose a role for each student that you think suits them best. Specific roles with titles & explicit duties can certainly foster interdependence & accountability within groups. You might also be able to allow them to choose their own roles so that they can have one they are comfortable with. I use roles or assign tasks to ensure everyone understands how they will be contributing to the group work.

Many of the other participants expressed less successful when it came to implementing roles and responsibilities.

Katrina: I currently do not assign roles to my students when they work in groups but will do so in the near future.

Samuel: The ways to ensure fair division of labor seem to be difficult with our population. Roles should ideally take into account students' abilities and hold them accountable.

Cameron: I also struggle with the fair division of labor. Sometimes, I rotate the labor so that each member has the opportunity to do each task.

Tim: I would like to be more consistent about using them during group work.

While some participants expressed they needed more support with differentiation, they often discussed topics like scaffolds, grouping, and assigning roles and responsibilities which are all forms of differentiation. Differentiation might look like students getting learning opportunities such as extra practice, increased time with materials, less difficult work, or more rigorous extension work (Fisher, Frey, & Everlove,
Determining when to differentiate and when to use scaffolds is a move made by the teacher. Often, formative assessments can help teachers identify students that need more practice on an objective or students that are ready to advance (Fisher, Frey, & Everlove, 2009)

According to Fisher, Frey, & Everlove (2009), the key to productive group work is an effective accountability system which includes a process for providing group feedback and reflecting on individual contributions to the process and product. While veteran participants’ Katrina and Maria expressed the process was more important, newer teachers Grant and Penny agreed the opposite that the product was more important than the process.

Katrina: I made a Google Form survey to assess their feelings regarding group work. Also, I have been having those complete reflections after their group work so they have a chance to tell me how they feel about it.

Maria: Sometimes, I give individual grades and group grades. I have students reflect on their personal work and their group members' participation.

Grant: The evaluation definitely hinges on the quality of the group product. Still, the reflection writing at the conclusion of the project does weigh on the individual scores my students earn.

Penny: The rubric evaluates the quality and accuracy of the product, as well as whether the group was prepared and organized.
Reflection and feedback on the process and product by the students is tied to the assessment and final grade. Participants discussed their struggles with student reflection; therefore, it was understandable they would also discuss the use of rubrics. Similar to the discussion of process over product veteran Katrina claimed, “The evaluation should include both the quality of the product and the effectiveness of the group. There could be two separate rubrics that they could use to evaluate these things.” While another veteran participant, Jane said her “goal this year has been to consistently use rubrics for projects.” Some like Sabrina also pointed out that rubrics “make everyone's life easier. It is helpful when the students and teachers know exactly what and how they will be assessed.”

Interestingly, many participants described the use of rubrics to help explain the task to students and allow them to use rubrics to assess sample work.

Penny: I will explain the project and then pass out samples from prior years along with the rubric and have students work in small groups to “grade” the Newspapers from last year. This way they can start to visualize what their finished product may look like and familiarizes them to the rubric. Larger projects always have a rubric provided in advance and explained so that students understand the expectations and can refer back to it as they complete the project.

Maria: I also give my students a rubric and a student exemplar; both help them understand how they will be graded. I explain that I will be observing their individual input as well as the group’s collaborative skills.
Assessing group work has added challenges, depending on the objectives of the assignment, mostly likely the teacher will want to assess the team’s final product and their group process (Fisher, Frey, & Everlove, 2009). On several occasions, participants brought up the fact that for them productive group work was more about the process and interpersonal skills gained by students.

Cameron: I could not agree more with "process over product" & emphasize this to my students.

Maria: Sometimes, this process becomes more important than the actual group product.

Tim: I support a participation component to the grade. This way, a teacher can emphasize the process over the product.

On top of the other components of student reflection and assessment was the concern that group performance must be translated into individual grades. It was appeared some participants worried about the effect group work grades had on various students. This moved the conversation toward issues of fairness and equity. Teachers struggled with students who prefer to work independently rather than in groups there was mixed feelings as to whether to let them work alone or make them work in groups. Many participants reflected that students’ prior experiences with group work impacted their desire to work in groups. However, there was mixed feelings in regards to letting students choose to work alone instead of in groups.

Samantha: Oftentimes, I let really motivated students work alone because there aren't enough of their peers who will do work to their level or caliber.
Maria: Sometimes I let them work alone. I give many opportunities for them to work collaboratively during the year. If they want to work alone on a major project because they have an IEP, 504, social anxiety, grading paranoia/fixation, I let them.

Allison: If I know that a particular student would rather work alone, it is generally a high achieving student that has taken on the bulk of the work in the past and hates it. If I can, I will pair them with other students of the same caliber so they feel less inclined to have to do all the work on their own.

Cameron: I reassure those who complain about the prospect of working in groups that even in groups, a certain amount of the work is individual in nature, and that in the end, due to the nature of the grade book, they will receive an individual score that takes into account their individual efforts. However, I also emphasize the value of teamwork.

Penny: I understand where these students are coming from, because in the past I also preferred to work alone. Now, I just empathize with those students and explain that they need to practice this skill now, because group work is often an expectation when they go to college, and almost all jobs.

Complicating both these issues is the fact that neither group processes nor individual contributions are easy to see in the final product. Along with this, teachers may need to find ways to determine how groups functioned and the extent to which
individuals contributed to the effort. This explains why many participants’ said
assessment to be the most difficult part of group work.

Chapter Summary

For this study, quantitative and qualitative data were collected. Quantitative data
included the TSES, CTBS surveys, and descriptive statistics from online and offline
artifacts. Pretest and posttest data was collected from the TSES (n = 15) and CTBS (n =
15). Descriptive statistics indicated a statistically significant increase from pretest to
posttest for in all three subscales of TSES: 1) student engagement, 2) instructional
strategies, and 3) classroom management. A positive increase was also found in the
paired t-test test of both subscales of CTBS: 1) instructional strategies, and 2) student
discipline. Descriptive statistics taken from the online discussion posts and face-to-face
teacher swap meetings suggests participants were actively involved in the blended
collaborative PD.

Qualitative data included semi-structured participant interviews, online discussion
posts and responses to peers, and participant pre and post reflection artifacts. Three
themes emerged from the data: (a) Participants perceived improved outcomes from the
blended collaborative PD over existing PD opportunities, (b) Participants expressed the
blended collaborative PD encouraged them to build a collaborative community, and (c)
Participants agreed that the blended collaborative PD helped develop their teacher
efficacy. The analysis of the data and creation of themes helped me understand the
outcomes of the study.
CHAPTER 5
DISCUSSION, IMPLICATIONS, & LIMITATIONS

Introduction

This chapter positions the findings within the existing literature on the impact of social learning on teacher professional development. It mainly examines how blended models for teacher PD can influence teacher efficacy. The purpose of this study was to explore the effects of a blended and collaborative form of PD on teacher’s personal efficacy, collective efficacy, and teacher collaboration at Pine Hill High School. Three primary themes emerged from the data analysis (see Table 4.7). Data from both quantitative (i.e., TSES, CTBS) and qualitative methods (i.e., participant interviews, participant artifacts) were collected and subsequently analyzed. This chapter will present the following information: (a) a discussion of the findings, (b) implications of the research, and (c) the limitations of this study.

Discussion

It is important to situate this study’s findings within the larger context of scholarly literature on social learning theories and teacher PD and collaboration. The data were combined and analyzed to better understand the effects of blended and collaborative teacher PD on teacher perceptions of agency and collaboration to answer the research questions (Arney, 2015; Duffey et al., 2006; Wells, 2007). The literature on teacher efficacy and collective efficacy also helped understand conditions that facilitate change in
instructional strategies (Pajares, 1996). The three research questions organize this discussion on effects and conditions.

**Research Question #1: How and to what extent does teacher efficacy change with participation in a blended collaborative form of professional development?**

This research question aimed to understand how teacher efficacy might change due to participation in the blended collaborative form of PD. Teacher efficacy is considered one of the most important beliefs in motivating and influencing student learning (Bruce & Ross, 2008; Chwalisz, Altmaier, & Russell 1992; Klassen et al., 2010; Schwarzer & Hallum, 2008). Therefore, continual teacher PD programs that encourage teachers to play an important role in their classroom and school can assist in increasing efficacy. Much of the following discussion was derived from the quantitative results of the TSES, and qualitative findings, particularly the third Theme, *Participants agreed that the blended collaborative PD helped develop their teacher efficacy.* The mixed-methods findings indicated that (a) increased teacher efficacy and (b) evidence of increased teacher efficacy.

**Increased teacher efficacy.** While it is evident teachers were interested in sharing their experiences and learning more about implementing productive group work, they began the PD with various efficacy levels on the topic. Because participants were purposively selected to represent various years of experience, content levels, and grade levels taught not all teachers began the blended collaborative PD with the same levels of efficacy. Quantitative data indicated a statistical significance in the overall mean score from the beginning to the end of the innovation. This can be seen in the statistical
differences in the TSES scores between the pretest \((M = 6.850, SD = 0.850)\) and posttest scores \((M = 7.59, SD = 0.948)\).

Along with the overall mean for the TSES, all three subscales, *student engagement*, *instructional strategies*, and *classroom management* showed a statistically significant increase in efficacy. The *student engagement* subscale is concerned with how a teacher believes they can create a learning environment where students are motivated to be physically and academically present for the content and skills involved in the learning process. The results of this subscale indicated a pretest score \((M = 6.283, SD = 0.773)\) and a posttest score \((M = 7.000, SD = 1.039)\). The *instructional strategies* subscale focused on teacher perceived impact on student learning. In this study, the instructional strategies subscale pretest \((M = 7.317, SD = 0.657)\) and posttest \((M = 8.067, SD = 1.039)\) were significantly different. The *classroom management* subscale is an essential component in working with students and can often undermine teacher effectiveness if not implemented properly (Lee et al., 2013). Results of this study indicated classroom management increased significantly from the pretest \((M = 6.950, SD = 0.845)\) to the posttest \((M = 7.700, SD = 0.819)\).

**Evidence of increased teacher efficacy.** The above quantitative data highlighted the increase in teacher efficacy based on scores from the TSES. The following section further expounds on the quantitative results with qualitative evidence of increased teacher efficacy. Evidence of increased scores is reflected in three areas (a) innovation design for active learning, (b) confidence from positive classroom experiences and, (c) beliefs on student engagement.
Innovation designed for active learning. I utilized Bandura’s sources of efficacy, mastery experiences, vicarious experiences, social persuasion, and emotional and physiological cues to develop the blended collaborative community for PD (Bandura, 1997). Active learning is an essential component in building up efficacy (Bandura, 1988; Dixon et al., 2014). Active learning occurs when teachers share critical, reflective conversations that connect new knowledge to their current context (Darling-Hammond, 2006). Therefore, I included strategies strategically to encourage active learning during the innovation.

The sources of efficacy most associated with online discussion boards are mastery experiences, social persuasion, and physiological cues. Participants were encouraged to share mastery experiences with each other, provide social persuasion in the form of response feedback, and openly share their struggles with the implementation of PGW. In this study, active learning was evidenced by participant’s contributions to the discussion boards. During the 6-week innovation, there were 74 initial posts. At 82%, more than half of the participants posted an initial response each week. There were 125 peer responses, which at 69% is over half of the participants responding to each other each week. This data shows participants freely shared and discussed their various levels of implementation in regards to productive group work.

Qualitative data from the participant discussion posts and responses further support the quantitative results. On multiple occasions, participants shared mastery experiences via online discussion posts. One example of mastery experience occurred when Allison shared her successful implementation of a jigsaw. She posted, “It was super successful, the students enjoyed becoming experts, and I was able to get through the
content quicker and in more depth. This wouldn’t have happened if I would have stuck to a more traditional lecture-style lesson.” Bandura (1997) said *mastery experiences* to be the most influential source of efficacy because it is authentic evidence of one’s success. When a teacher such as Allison feels successful about implanting a new strategy, it increases her belief in her personal efficacy.

*Social persuasion* is also an essential factor in building efficacy (Bandura, 1997). A feeling of success can occur when teachers have the opportunity to give and get emotional support, feedback, and encouragement (Goddard & Hoy, 2004). This study found that online discussion posts and particular responses are one way to encourage emotional support, feedback, and encouragement.

One benefit of the blended approach to PD in this study was the online discussion boards that provided multiple opportunities for participants to share with each other. It is evident from the 125 peer responses that participants were on average (*M* = 1.44) actively discussing the content online. Online formats provide convenience for teachers who may have challenges attending traditional in-person PD. Qualitative data also supported social persuasion occurring online. Jane discussed an online conversation that led to a deeper face-to-face dialogue about a practice from the book. She stated, “She sent me a message about one of my comments, we discussed it more during our face-to-face meeting, and we are still having an ongoing conversation about that.” During week one, Justin expressed defeat when trying to implement group work. He indicated, “I quickly get a headache and then settle for pair shares.” His setback was followed by a supportive response from Grant, who shared, “Don’t worry about not getting good group work. They do take time to get right for the class.” This type of *social persuasion* occurred several
times throughout the 6-weeks. Active learning also led to instances of deeper collaboration among participants, which I further explored in the third research question.

Bandura (1977) stated, “Stressful and tasking situations generally elicit emotional arousal that, depending on the circumstances, might have informative value concerning personal competence” (p. 198). Bandura (1977) referred to this source of efficacy as emotional and physiological cues. Opportunities to acknowledge stressful situations and develop techniques to manage stress provide important information for developing teacher efficacy (Goddard & Hoy, 2004). During this PD, participants were challenged to learn new instructional strategies. They were asked to use their newly acquired skills to change their teaching practices. The online discussion board provided participants opportunities to rejoice or vent about their experiences. Several times participants expressed frustration with a particular instructional practice. When discussing interdependence in group work tasks, Carol stated:

This is the part I struggle with!! Doing matching tasks in which one person has one part and another has the other and they can't show or touch each other’s cards helps require interdependence, but these are hard and time-consuming to create and hard to find for my content.

Likewise, when sharing past experiences with group work, Allison wrote, “I also struggle with the fair division of labor besides actively monitoring and requiring that I see each member participating in the conversations and all four must write on the posters.” In another example, Sabrina described struggles with uncooperative groups. She claimed:
I am still currently trying to figure out the best way to encourage uncooperative group members, and the first method I try to check in with them when I see they are off task. I have had students that become extremely aggressive just based on this single interaction, but most will at least do the bare minimum while I am around.

Along with the discussion posts, participants were provided with weekly materials, including readings and videos that showcased vicarious experiences in various classrooms. The book that was provided to all participants included multiple examples of how the strategies discussed were successfully implemented in real teacher’s classrooms. Accompanied by the book were also video materials from platforms such as YouTube and the Teaching Channel. The chosen videos highlighted classroom recordings of teachers successfully implementing various aspects of PGW. Readings, videos, and in-person observations are all forms of active learning that can allow others to witness mastery experiences and, in turn, build their efficacy (Liberman & Mace, 2010).

While live opportunities for classroom observations among participants were not explicitly built into the innovation, they were highly suggested. On a few occasions, teachers learned about what other participants were doing in their classroom and reached out to observe. In one example, Jane read in a discussion post that Cameron was implementing a jigsaw activity. She reached out and asked if she could observe his class. In her exit interview, Jane recalled the experience by stating, “Being able to go and observe Cameron in his Japanese class, even though it is not French, was really helpful, and I gleaned a lot from that visit.”
The increase in teacher efficacy may be attributed to the types of experiences teachers had during the innovation. During the 6-week innovation, teachers experienced *social persuasion, vicarious experiences, and emotional and physiological cues*. Confidence from these experiences is evident from both qualitative and quantitative data. The quantitative data suggest a positive connection between active learning experiences and teacher efficacy.

**Confidence from positive classroom experiences.** Bandura (1994) claimed that efficacy is a belief in one’s capabilities to perform certain tasks and reflects their confidence in controlling assumptions about their motivation, behavior, and environment. For this study, efficacy was measured based on Bandura’s (1977) model of efficacy factors and the TSES. The TSES addresses three subscales *student engagement, classroom management, and student engagement*. The subscale *instructional strategies* focused on what teachers do to help their students learn content and skills. In this study, the instructional strategies subscale pretest \((M = 7.317, SD = 0.657)\) and posttest \((M = 8.067, SD = 1.039)\) were significantly different. The subscale *classroom management* is an essential component in working with students and asks teachers to what extent they can impact specific behavioral or attitudes of their students. Results of this study indicated classroom management increased significantly from the pretest \((M = 6.950, SD = 0.845)\) to the posttest \((M = 7.700, SD = 0.819)\). Overall, participant’s quantitative data suggests teachers increased their confidence by the end of the study.

When asked if participating in the professional development increased their abilities, Sam answered yes. He claimed, “It has made me more confident that I can use productive group work more in my classroom. I didn’t realize there were so many other
components, and my group work has improved by incorporating them more.” Sam’s confidence in his ability to implement productive group work in the classroom was also on display during the interview when he claimed, “I have gotten better. If this PD was longer, I could have been observed by others and maybe helped them implement better group work.” His willingness to be observed shows his newfound confidence in productive group work. Teacher confidence was primarily associated with positive experiences in the classroom.

The more positive experiences teachers have in the classroom, the more their confidence grows (Hattie, 2012). Teachers’ confidence in implementing instructional strategies can be increased by facilitating positive personal experiences (Dede et al., 2009). Collaborative professional development is one way to provide this help, as it gives teachers a way to increase their comfort level and reduce fears through reflective dialogue and observation of their peers (Darling-Hammond, & McLaughlin, 1995; Desimone et al., 2002; Fullan & Hargreaves, 2002; Garet et al., 2001; Killion, 2007; Killion & Williams, 2009).

Items 5, 9, 10, 12 in the TSES (Tschannen-Moran and Hoy, 2001) apply to teacher’s sense of efficacy in terms of instructional strategies. This subscale increased significantly with a pretest ($M = 6.950$, $SD = 0.651$), and posttest ($M = 7.700$, $SD = 0.716$). Within this subscale, the item that increased the most was related to teachers’ instruction in terms of assessment strategies. Question 9 asked, *to what extent can you use a variety of assessment strategies?* The participants’ self-reported score on question 9 grew from the pretest ($M = 7.200$) to the posttest ($M = 8.000$). For this item all but one participant increased their self-reported rating, which suggests that participants increased
their efficacy for using a variety of assessment strategies. The increase proposes participants had positive experiences in the classroom when implementing assessment strategies for productive group work.

On the other hand, Justin’s rating improved the greatest from \((n = 6.000)\) to \((n = 9.000)\). Justin’s increased rating was furthered in qualitative data. Justin expressed some hesitance with learning new strategies from the collaborative PD in his pre-reflection. He stated, “I know the purpose of group work and not sure what I can gain from participating.” However, in his post reflection, Justin expressed, “At the end of the PD, I realized I had been missing assessment tools for accountability during group work.” Conversely, Carol’s rating dropped from the pretest \((n = 8.000)\) to the posttest \((n = 7.000)\). Because Carol was not one of the participants selected for an exit interview and was not present for the final face-to-face meeting, where participants shared their post reflections, it is not evident why her rating dropped.

Throughout the blended collaborative PD, participants showed growth in their abilities to incorporate new instructional strategies, especially those related to assessing productive group work. Similarly, Item number 12 asked participants, how well can you implement alternative teaching strategies in your classroom? While this item (alternative teaching strategies) did not increase as much as item 9 (assessment strategies), a significant increase occurred from the pretest \((M = 6.800)\) to the posttest \((M = 7.400)\). All but one participant increased their rating for this item. Again, Justin’s score increased significantly from six \((n = 6.000)\) in the pretest to nine \((n = 9.000)\) in the posttest. Justin was not selected for an exit interview, but many of his discussion posts help understand
his increased score. Several times Justin discussed the successful implementation of a new strategy. For instance, during week two he wrote:

I usually let students choose their own group, but this week I tried the book suggestion of purposefully creating groups based on student’s skills levels and was amazed at how well students stayed on task and helped each other out. I can see why it is valuable to take extra time to create groups that are more successful than when students choose their own groups.

Allison had the second-highest score increase for item 12 (alternative teaching strategies) and her posttest score of nine ($n = 9.00$) increased from her pretest score of seven ($n = 7.000$). This learning or perceived efficacy was also supported by a post she made on the discussion board. She explained a positive experience that she had while implementing a new instructional practice from the book. Allison wrote:

I tend to stick with more comfortable PGW [productive group work], things I have done a lot in the classroom. But last week I tried the jigsaw activity from the book for the first time. Each student in the homegroup was responsible for research on a group of arthropods. Each individual was responsible for finding the same information but specific to their group (crustaceans, chelicerates, myriapods, and hexapods). It was super successful, the students enjoyed becoming experts and I was able to get through the content quicker and in more depth. This wouldn’t have happened with IF? I would have stuck to a more traditional lecture-style lesson.
Because the instructional practice was immediately useful, Allison implemented a strategy right away in her classroom, which allowed her to have a positive, yet reflective response about her experience. The research on implementing instructional strategies from PD suggests that effective PD offers immediate use for teachers (Borko, 2004). The immediate classroom use allows teachers to reproduce their learning in a familiar context. If teachers have mastery experiences with the instructional practice, they will strengthen their sense of efficacy (Bandura, 1977).

**Teacher beliefs on student engagement.** Increased teacher efficacy can be seen in participant’s beliefs surrounding student engagement. Student engagement is one of the three subscales in the TSES that focuses on how well teachers believe they can engage students during their lessons. The literature suggests efficacious teachers can better change their teaching approach to accommodate student needs (Lee, Cawthon, & Dawson, 2013). Early research in this area suggested that teacher efficacy was one of the teacher characteristics that significantly influenced student achievement (Armor et al.; Berman & McLaughlin, 1977; Rosenshine, 1979).

As more instruments were developed for testing teacher efficacy and student outcomes, results showed a direct link between teacher efficacy and the effects on teaching practices (Gibson & Dembo, 1984). The development of the TSES instrument and the work of Tschannen-Moran and Woolfolk-Hoy (2001) expounded on teacher efficacy and student outcomes. Their research repeatedly found that highly efficacious teachers produce stronger student outcomes (Tschannen-Moran and Woolfolk-Hoy, 2001). The subscales in TSES recognize multiple components of teaching and attempt to
measure teacher’s perceptions of effectiveness and how a teacher’s efficacy can differ between them.

While the final subscale, student engagement, increased significantly it did so at a reduced rate when compared to the other two subscales. The student engagement subscale related to how well a teacher can create a learning environment where students are motivated to be physically and academically present for the content and skills being taught. The results of this study indicated a pretest score ($M = 6.283, SD = 0.773$) and a posttest score ($M = 7.000, SD = 1.039$). Some of the literature suggests that teachers often perceive lower levels of student engagement (Van Uden, Ritzen, and Pieters, 2013). Items 2, 4, 7, and 11 are associated with efficacy in student engagement. The lack of growth compared to the other subscales shows that teachers begin PD opportunities with a variety of efficacy levels. Teacher’s efficacy can increase in one area while maintaining or even decreasing in other areas (Guskey, 2002). In this case, beliefs about student engagement demonstrated the lowest increase out of all three subscales scored on the TSES. This minor increase was extended by many of the participants’ qualitative post reflections.

All but two participants’ scores remained the same for the subscale student engagement, with Tim and Angelica decreasing by one point. Because Tim and Angelica were not selected for the semi-structured exit interview, it is harder to determine why their scores decreased. However, there is evidence to suggest that participants struggled when it came to motivating students. One of the student engagement subscale questions asked, how much can you do to motivate students who show low interest in school work? Participants expressed feelings of frustration related to unengaged students. They even
stated that lack of motivation is associated with socioeconomically disadvantaged students. Studies examining teacher efficacy when working with students from diverse backgrounds have found that teacher beliefs about a student’s socioeconomic status can affect student achievement (Tucker & Herman, 2002; Garcia, 2004). This topic came up frequently during interviews when participants were asked, \textit{what are the parts of teaching you find the most challenging?} In his interview, Samuel shared, “At this school, we have a particularly difficult population to teach, and I am not always able to reach those students who may have severe learning disabilities or huge socioeconomic differences that create learning gaps.” On a similar note, Katrina commented:

I would say another major challenge especially with our population is they're not all getting what I think they need and as a result, it can be frustrating to get some of them to care about school because there are bigger things happening in their lives that we don't have very much control over.

Teachers increased their understanding of productive group work in terms of classroom management and instructional strategies. But they continued to struggle with engaging students, particularly students from disadvantaged backgrounds and those with learning gaps.

Over time, more sustained collaborative PD may increase teachers’ efficacy, which may impact their perceptions of student engagement. Six participants expressed a need for PD that focuses on differentiation and scaffolding for students with disabilities, English learners, and students with other diverse needs. Jane voiced a need for “PD on differentiation…I think having a go-to list of ideas would enable me to more quickly and
easily do this for students who need it.” Penny said, “I try to provide differentiated scaffolds for students to use to support language and literacy, but I am not always able to provide several different levels of scaffolds.” These statements support the need for collaborative PD and more dialogue around best practices to support struggling students to boost teacher efficacy regarding student engagement during instruction.

A study by Van Uden et al., (2013) found that while student engagement is an important condition for student achievement, the relationship between actual student engagement and teachers' perceived beliefs about student engagement may not be aligned. Their findings suggest teachers base their perception of student engagement on their daily interactions with students, which may not be sound evidence. The Van Uden et al. (2013) study can further help underscore why the student engagement subscale had the smallest increase because participants may find it challenging to accurately gauge student engagement. Therefore they may have rated themselves lower on questions 2, 4, 7, and 11.

**Research Question #2: How and to what extent does collective teacher efficacy change with participation in a blended collaborative form of professional development?**

This second research question aimed to understand how collective teacher efficacy might change due to participation in the blended collaborative form of PD. Much of the discussion came from the quantitative results of the CTBS and qualitative data from two themes: participants perceived improved outcomes from the blended collaborative PD over existing PD opportunities and participants felt the blended collaborative PD encouraged them to build a collaborative community. The mixed-
methods findings indicated that collective teacher efficacy increased and 2) evidence of increased collective teacher efficacy.

**Collective teacher efficacy increased.** Collective teacher efficacy is the shared belief of teachers within an organization that they can impact student learning together (Ross & Gray, 2006). Collective efficacy is a school-wide variable and has a lot to do with how much teachers trust the school systems to effectively implement instructional strategies and make positive outcomes on student learning (Ross & Gray, 2006). Similar to the findings related to efficacy, not all teachers or schools have the same levels of collective efficacy that encourage them to participate in active learning. Active learning requires collaboration among colleagues. According to the analysis of the quantitative data, the overall mean score of CTBS increased by the end of the innovation. This can be seen in the statistical differences in the CTBS scores between the pretest ($M = 6.37$, $SD = 1.144$) and posttest scores ($M = 7.31$, $SD = 0.921$).

Along with the overall mean score, the two subscales *instructional strategies* and *student discipline* also significantly increased. Questions 1-6 are associated with collective efficacy in instructional strategies and aim to understand to what extent teachers believe their colleagues can impact student learning. There was a statistically significant increase in this subscale between the pretest ($M = 6.51$, $SD = 1.15$) and posttest scores ($M = 7.50$, $SD = 0.92$). Questions 7-12 are associated with collective efficacy in classroom discipline and attempt to know to what extent teachers believe their colleagues can impact student behaviors. There was a statistically significant increase in this subscale between the pretest ($M = 6.24$, $SD = 0.95$) and posttest scores ($M = 7.13$, $SD = 1.144$).
Evidence of increased collective teacher efficacy. The quantitative data above showed an increase in collective teacher efficacy based on scores from the CTBS. The following section further illustrates an increase in collective teacher efficacy with qualitative evidence. Evidence of increased collective teacher efficacy was captured in two areas (a) value collaboration and (b) collaborative school cultures.

Value collaboration. Collaboration and collective participation are important elements in effective teacher PD (Lim & Yoon, 2008). Loucks-Horsely et al., (2009) found that combining a collaborative online component with a collaborative face-to-face model for teacher PD allowed for continuous, job-embedded effective PD. The innovation in this study aimed to create collaborative spaces online and offline. While the online component was discussed in detail in research question 1, in terms of building efficacy, the offline component was intended to build collaborative relationships with participants strategically to demonstrate the value that working together can provide to them. Participants were invited to three face-to-face teacher swap meetings.

During teacher swap meetings, participants practiced strategies from the weekly materials and were given structured opportunities to share how the implementation of PGW was going in their classrooms. Many participants expressed appreciation for the opportunity to collaborate not only online but face-to-face. For example, Katrina claimed, “This collaboration allowed me to go outside of my classroom and learn new things from my colleagues to try to make my teaching better.” At least four participants expressed having more face-to-face meetings would have increased the value of collaboration. Angie was very vocal, making multiple statements during the semi-structured interview, such as: “I liked when we all got together at the face-to-face meetings to interact;” “it
and “online you don’t get all the non-verbal communication and cues.” Data analysis indicated that a blended approach to PD combined the benefits of online learning and face-to-face interaction, encouraging personal connections while still providing opportunities for practice, peer feedback, and growth (Caulfield, 2011; Locke, 2006).

Another finding regarding the collective efficacy and the value of collaboration was between veteran teachers and newer teachers. Veteran teachers who have ten or more years of experience reported a lower mean on the CTBS ($M = 6.20$) than teachers with three or fewer years of experience ($M = 7.60$). These results suggest contrary beliefs regarding teacher collective teacher efficacy and collaboration regarding years of experience. This discussion proposes that due to experience, veteran teachers maintain higher levels of confidence in their efficacy and therefore place less value on collaboration. Their confidence in teaching discourages them from seeing a need to collaborate, which could account for their lower overall scores on the CTBS. The literature suggests that teacher PD can hold a different value depending on the teacher’s years of experience (Masuda, Ebosole, & Barrett, 2013). Masuda et al. (2013) found that new teachers prefer collaborating to find easy-to-implement classroom strategies while veteran teachers prefer to keep the status quo and rely on familiar strategies and classroom routines. Masuda et al. (2013) study had similar findings to this study regarding veteran and newer teachers.

Qualitative statements made by participants further explain the above quantitative data and supporting information from the literature. For example, Katrina, a veteran teacher, stated in her exit interview, “Some people like to collaborate a lot, but
personally, I spend most of my time working alone and am only interested in working with students.” Interestingly, newer teachers like Penny and Grant agreed during their interviews that veteran teachers don’t feel they need support and are less likely to collaborate. Whereas veteran teacher, Samuel, stated, “If a teacher wants to collaborate and is willing to, they can find people to work with, but nobody is going to ask them.” Samuel’s quote shows how veteran teachers are less likely to seek out collaboration. As a result, they value collaboration less than newer teachers like Penny and Grant. The notion that veteran teachers’ are less willing to collaborate was supported by their lower scores on the CTBS.

This relationship between teacher efficacy and collective teacher efficacy is consistent with other studies (Chan, 2008; Goddard & Goddard, 2001; Kurz & Knight, 2004; Skaalvik & Skaalvik; 2007). Along with these previous studies, this research confirmed that while collective teacher efficacy and teacher efficacy are relatively independent constructs, they also share some connections. As teacher’s efficacy increases, they may be less likely to believe in collaboration to improve their practice. For example, Penny shared:

There are a lot of new teachers, and a lot of them are willing to collaborate. The veteran teachers are less willing. I think they are just used to what they are doing and don’t think they need anything else.

Teachers with higher efficacy may not feel the need to work with others to grow in their instructional practice, which resonates with the qualitative data.

One possible explanation for the negative relationship between teacher efficacy and collective teacher efficacy in veteran teachers is the number of opportunities and
positive experiences they have encountered with collaboration. Collaborative active learning opportunities include classroom observations, learning walks, coaching cycles, and interactions within their departments and professional learning communities.

Veterans have confidence in their instructional abilities and have higher levels of efficacy, but the qualitative data indicates that they have rarely experienced PD that encourages teacher collaboration. Several veteran participants expressed negative feelings about PD they have attended in the past. The negative factors they identified included being pulled out of their classroom during the school day, jumping through hoops to attend PDs of interest to them, and the relevancy of mandatory PD to their practice. Veteran Katrina summed up many of these issues when she claimed:

    Our school often gives us opportunities for professional development. I think maybe that could happen more. It could be a little more streamlined with less red tape and hoops jump through…The thing that bugs me the most is when people are getting professional development, they often have to leave their classroom, and the school is not equipped to cover all those teachers being out.

Veteran teachers’ have been exposed to the bureaucracy of the educational system for longer and may have had more poor opportunities or experiences attending PD.

    The literature suggests teachers who collaborate daily by sharing strategies, materials and continually seek opportunities to engage in active learning have higher levels of collective efficacy (Ross et al., 2004). When collaboration occurs, teacher efficacy and collective teacher efficacy are closely related (Goddard & Goddard, 2001). Whereas in less collaborative school environments, teachers may not have many opportunities to work closely with their colleagues, and their collective efficacy can be
negatively impacted. It is evident high levels of efficacy do not automatically suggest positive results in collective teacher efficacy.

**Collaborative school cultures.** Collective teacher efficacy was found to have a significant relationship with collaborative school culture. The results from this study correspond to results of previous studies in which teachers’ collaborative culture predicted collective teacher efficacy (Ross & Gray, 2006; Zambo & Zambo, 2008). Bandura (1997) stated that collective teacher efficacy is greatly affected by the collaboration of the teachers as their professional practices grow within a school. Researchers have also found that collaboration among teachers can influence collective efficacy by creating a culture that encourages help-seeking, problem-solving, and sharing (Bigsby & Firestone, 2017; Ross & Bruce, 2008). In this study, a collaborative form of PD was created to increase opportunities for teachers to learn, grow, and provide feedback to one another. The self-reported scores on the CTBS indicated a statistically significant increase in teacher collective efficacy. Initial pretest scores ($M = 6.378$, $SD = 1.144$) increased in the posttest ($M = 7.315$, $SD = 0.921$).

The CTBS is made up of two subscales instructional strategies and classroom discipline. This research study focused on collaboration, teacher efficacy, and collective teacher efficacy in classroom practices and instruction. Questions 1-6 on the CTBS focus on collective efficacy and instructional strategies. While both collective efficacy and instructional strategies showed a statically significant increase, the instructional strategies subscale increased more after the innovation. The pretest began ($M = 6.51$, $SD = 1.154$) and the posttest ($M = 7.49$, $SD = 0.923$). During this study, participants learned about strategies to help them implement productive group work. This likely explains why
collective efficacy increased the most in *instructional strategies* rather than student discipline. Item 1 on the *instructional strategies* subscale asked *how much can teachers in your school do to produce meaningful student learning*. Item 1 also had the most significant increase with a pretest score ($M = 6.833$) and posttest score ($M = 7.466$).

During the innovation, teachers often shared their experiences online and offline, contributing to this increase in collective efficacy. Literature on this topic proposes that collective efficacy develops when there are opportunities for teachers to interact and share knowledge (Klassen & Chui, 2010; Zambo & Zambo, 2008). The structure of the blended collaborative PD in this intervention encouraged participants to review pedagogical content, share experiences, begin to implement and reflect on the process together. In their post reflections, participants shared their thoughts on participating, and some detailed the value of learning together. Jane stated, “I critically self-reflected more, and I was more intentional about learning from my colleagues.” Likewise, Maria said, “I need to keep learning from my peers and trying new things in my classroom.”

In contrast, most of the other PD opportunities available to teachers are provided by the district or school site. Each school has an instructional leadership team that creates more traditional PD opportunities that may not always include ways for teachers to collaborate. Although, PD created by the instructional leadership team is likely to be aligned to the goals of the school. Literature suggests goal-oriented PD can impact instructional strategies across campus and lead to increased student achievement (Sparks & Hirsh, 1997). The number of teachers actively collaborating, and strong leadership, is an essential factor in shaping school climate and culture (Ross et al., 2004). The impact of collaboration with strong leadership was evident in multiple statements made by
participants regarding the school site’s instructional coaching team. Some examples include Samuel who stated, “We have a lot of support with the different district initiatives from the instructional coaches” and Sabrina who claimed, “The coaches are really good, but I don’t think they are used as much as they could be.” It appears from this study teachers value the support of instructional coaches but feel they are underutilized on campus. Based on multiple studies instructional coaching and classroom observations are one of the most effective practices for cultivating change in education (Darling-Hammond, & McLaughlin, 1995; Desimone, Porter, Garet, Yoon, & Birman, 2002, Killion & Willimas, 2007).

Collective culture is affected by individual teacher successes and the relationships between teachers on campus (Zambo & Zambo, 2008). Zambo and Zambo (2008) found that if instructional leadership teams promote collaboration, groups of teachers are more likely to increase their collective efficacy by achieving common goals. Other researchers have shown that transformational leadership contributes to teacher’s efficacy, collective efficacy, and a collaborative culture on campus (Darling-Hammond, 2006; Klassen & Cui, 2010). This study strengthened the literature by finding a similar relationship between collective teacher efficacy and collaboration when instructional leadership develops collaborative professional development programs.

Research Question #3: How does participation in a blended collaborative form of professional development affect collaboration amongst participants?

Research question 3 aimed to understand how teacher's participation in the innovation impacts their professional sharing. Much of the discussion for this research question was informed by qualitative data relevant to the following Theme: participants
felt the blended collaborative PD encouraged them to build a collaborative community.

The discussion of the blended professional development’s impact on professional sharing was evident in teachers’ (a) desire to collaborate, and (b) collegiality.

**Desire to collaborate.** Participants communicated a strong desire to collaborate after participating in the blended collaborative professional development. In some cases, teachers stated that they appreciated that collaboration was offered, while others expressed a desire for more collaboration. This collaborative approach to PD has been successful in other studies (Borko, 2004; Bransford et al., 2000; Little, 2002; Meirink, 2007; Shipley, 2009; Slavit, et al., 2011).

A collaborative approach to learning is grounded in Vygotsky’s (1978) sociocultural theory of learning, where learning happens through social interaction, including learning that impacts cultural beliefs and attitudes towards collaboration. During the study, opportunities for professional sharing included participation in the three face-to-face teacher swap meetings and responding in the online discussion boards. On average most teachers attended all the in-person meetings ($M = 2.4$). The mid-meeting meeting was the most attended ($n = 15$). Participants were asked to respond to discussion questions in Google Classroom each week and were encouraged to reply to at least two peers. Participation started strong with initial posts the first week ($n = 15$) and averaged ($M = 13.26$) initial posts each week. Teachers responded to their peers the most during week two ($M = 26$). The average peer response each week ($M = 1.44$) was close to the expectation of two per week. The desire to collaborate is evident from the high levels of engagement in the quantitative data.
The qualitative data clearly shows that a genuine desire to collaborate existed. It was evident teachers expressed there was a lack of opportunities to collaborate on campus. Penny claimed, “I enjoy collaborating with my PLC, and I want to do more cross-curricular collaboration, but I don’t know if teachers across curriculums are ready to collaborate together.” Related sentiments came from Samantha, who indicated, “If there was more opportunities for cross-curricular collaboration, we could align lessons to benefit students even more.” Penny and Samantha, as well as three other participants, echoed a desire for more cross-curricular collaboration. Not only was there a desire for more cross-curricular collaboration, but teachers like Jane, who don’t have colleagues on campus who teach a similar course, expressed a need for district-wide collaboration. She shared, “I wish it were more district-wide because I don’t have other [department] teachers that I can collaborate with, and that is a bit unfortunate.” Not having an opportunity to collaborate with others was consistently mentioned in the research as a barrier in traditional PD and classroom implementation of new learning (Bransford et al., 2000; Bruce et al., 2010; Teemat et al., 2011).

Overall, the blended collaborative PD led to participants’ positive perceptions of professional sharing. In addition, participants shared some suggestion to improve the design to allow for more collaboration. All of the suggestions included a need for more time. Participants expressed wanted a longer PD, structured the same way, to have more opportunities to collaborate online, offline, and observe each other. For example, Samuel wished for “a longer period with more face-to-face meetings.” Similarly, Angie stated, “I appreciated the face-to-face so definitely do as many or more because they are
beneficial.” Penny enjoyed the blended format and indicated, “I really liked the format…it was a really good to mix a blend online and face-to-face.”

The feedback from participants is consistent with the research on the effective characteristics of PD. Teacher PD that consists of a one-time event is not adequate (Borko, Elliott, & Uchiyama, 2002; Darling-Hammond, 2005; Mizell, 2007). The literature suggests stronger teacher and student outcomes when PD is ongoing, utilizes active learning strategies, and happens within the context of teaching. (Hawley & Valli, 1999; Loucks-Horsley, 1995; Sykes, 1999).

Collaboration should be structured so that all the members are contributors to the group’s work (Blank & Alas, 2009), which places value on the collaborative group’s growing understanding, not just one or two individuals. This interdependence occurs when teachers are willing to share insecurities and trust others will do the same. Feelings of collegiality can lead to more professional sharing amongst teachers. Many participants expressed their appreciation for the honesty of other participants. Jane said that “honesty was encouraging to me which made it feel safe to say the truth and what I wanted to be better.” Penny furthered this notion by stating, “I appreciate how some people were like I don’t do that, I am really bad at that,” and Grant suggested, “People who were super honest helped create an atmosphere of honesty in the group.” A highly cited benefit of collaboration is shared intelligence; this concept posits that all participants share expertise, thus increasing knowledge and skill for the entire group (Poekert, 2012).

In this study, those who saw a benefit to collaboration seemed to appreciate sharing with others, like Grant, who said, “I feel like sharing ideas helps me recognizing
[sic] what I like in other teachers’ practices and then feeling confident when they recognized what they liked in mine. It was definitely very encouraging…”

Others who saw a benefit in collaborating reached out and asked others for resources or feedback. Allison said, “It was nice to log in every week and see what everyone else was saying and even spark conversations outside of the PD. I was interested in a strategy Angie discussed, so I emailed her, and she shared it with me. She even offered to help me implement it.” While this research aimed to increase collaboration, the limited duration made it hard to gauge the extent of their collaboration.

Conversely, some stated though they needed more discussion and referenced that need as a shortcoming of the collaborative PD. Although discussion boards were made available to participants, and it was suggested that participants post their ideas each week and respond to at least two of their peers, there was no extrinsic motivation or repercussions if they didn’t respond to others. In a candid response, Katrina reiterated this when she stated, “For me personally, I would answer the discussion questions and wouldn’t look at it again.” Angie also shared frustration with those who did not fully participate:

I was making note of their ideas to remember to go back and talk to different colleagues. As we talked online, I got a few coworkers sharing out materials, but only a few others consistently responded in the reply threads.

While it is harder to judge the effect of this form of professional sharing on classroom practice, it is evident that a deeper understanding of skills related to productive group work was being communicated amongst participants. The expansion of their
instructional repertoire was noted several times in participants’ post reflections during the final face-to-face meeting. One notable reflection came from Cameron:

> I learned so much from the materials and my peers about productive group work like the skills students need to achieve it and the strategies I can use as a teacher to make it happen. I guess the first step was having the knowledge to change my thinking around group work. As I make these changes, I am curious to see what kind of space my classroom will become.

It is evident from multiple responses that participation in this innovation supported teacher’s collaboration in deepening their understanding of productive group work, one of many district initiatives. By reading, watching, and discussing instructional strategies with colleagues, they built a sense of collegiality and opened up through dialogue about their experiences and practices.

**Collegiality.** Companionship and cooperation between colleagues is important to building collaborative relationships (Coke, 2005). The everyday work of teachers is the driving force behind teacher interactions. The findings of this study suggest, when teachers engage in face-to-face collaboration, they listen to their peers reflect on how closely the results of their lesson matched their intentions. Ultimately, before collaboration, there must be a process that facilitates collegial relationship building (Borko, 2004). The interactive, everyday dialogue between teachers helps expand on each other’s expertise by discussing classroom experiences. Collaboration can help teachers remain focused on the common goals within their context and fend off teacher burnout (Borko, 2004). Therefore, collegiality is a value of collaboration that teachers must hold
to be effective collaborators. The innovation in this study was designed with relationship building in mind. During each face-to-face teacher swap meetings, participants partook in an opening activity to get to know each other better.

Participants often cited the importance of building relationships and collegiality to have effective collaboration. One comment that reflects the importance of relationship building and collegiality in collaboration came from Samuel, who expressed that it “is hard to build relationships and be vulnerable about your classroom practices when the teams you are expected to collaborate with change every year.” Collaborating on campus helps build relationships and bring people together. Over time, common groups build trusting relationships, allowing them to open up with one another. While Samuel’s quote reflects feelings about contractual collaboration time within course-specific professional learning communities (PLC) on campus, it’s interesting to note his feelings of camaraderie with the participants in this 6-week study. Regarding the study participants, he said:

I really enjoyed gaining comradery with the group of teachers. I felt I was making new relationships across campus and expressed comfortable reaching out with to a variety of different teachers. Normally I am just connecting with the [department] staff, so it was a good way to meet more than just the [department] staff. I definitely gained a variety of different productive group work practices and different things that teachers are doing.

While the benefits of collaboration are not established quickly, several other participants confirmed the value of building relationships throughout their experience in
the PD. Like Grant said, “I liked continuing the online conversation in person. It helped me connect with others I don’t know on campus.” Katrina expressed similarly, “My interactions since have been more personal than they were before. I feel like it encouraged me to get more familiar and comfortable with some of my colleagues.” Most literature regarding collaboration and teacher PD suggests that embedded models with sustained interactions have the most success (Blank & Alas, 2009; Stronge, Ward, & Grant, 2011). Therefore, this study strategically provided opportunities for personal and academic collaboration.

Implications

This research has implications for myself, PD providers, and scholarly researchers. The three types of implications considered were: (a) personal implications, (b) implications for teacher professional development, and (c) implications for future research.

Personal Implications

I began this program as an educational technology coach for Pine Hill High School and ended as the educational technology coach for the entire Pine Valley High School District. Before, I assisted a handful of teachers at the site level and taught two sections of history social studies. Now, my role has broadened to hundreds of teachers, as well as other non-certificated district staff. Nevertheless, this study produced two implications for me as an instructional leader that I will continue to practice. These implications include (a) becoming a scholarly practitioner and (b) fitting the needs of adult learners.
**Becoming a scholarly practitioner.** When I started as a site educational technology coach, there was no true job description. Each school site in the district chose a teacher, who had been identified as a “Chromebook Champion” to fill the position. The position consisted of teaching two periods, prepping for one period, and working with the instructional leadership team for three periods. Immediately, I dove headfirst trying to improve the district’s educational technology goals by focusing on teacher PD. I had no formal training in designing or implementing teacher PD and relied heavily on other site instructional leaders to guide me in the right direction. Throughout this program, I realized I was relying heavily on anecdotal data and a more methodical approach to problem-solving would have greatly benefitted my efforts. I identified two interconnected problems at my site in regards to teacher motivation and PD. First, it seemed teachers were lacking the motivation to attend the PD sessions I was offering. Second, there appeared to be a disconnect between technology use and the instructional initiatives being pushed by the district.

During the action research process, I reviewed existing relevant research to guide my process of creating an effective innovation, collecting, and analyzing data. By merging theory with practice, I was able to implement a model for PD that included many factors identified as effective (Darling-Hammond, & McLaughlin, 1995; Desimone, et al., 2002; Fullan & Hargreaves, 2002; Garet, et al., 2001; Killion, 2007; Killion & Williams, 2009). This effective PD emphasized a design that would help encourage collaboration and help build a community of learners on campus. This community of learners would become more self-directed and less dependent on the instructional leadership teams to provide traditional sit and get PD. Moving forward, in my new
position, I plan to utilize a more scholarly approach to solving educational problems. I know more about how to identify root causes, locate supporting research, use the instructional design process to create PD, and collect different types of data to gauge effectiveness.

**Working with adult learners.** Before this program, most of my formal education was focused on classroom teaching and pedagogy. When I became a site-level coach and as a district-level specialist, my work shifted to working with adults. As I researched Andragogy (Knowles, 1973) for this action research, a second implication I realized was the importance of providing the necessary conditions for effective adult learning. When I think about planning meetings, professional development sessions, or working one-on-one with a teacher, I now know how to better focus on the learner. Part of this innovation’s success included the active and collaborative role participants played in their learning and the learning of their peer participants. Supporting previous research (Luft & Hewson, 2014; Reiser, 2013), I learned how to design PD opportunities that could impact classroom practices by being ongoing, sustained, and supported by classroom observations. By reviewing participant’s pre-reflections I was able to meet them at their level. This is a practice I will continue for future action research. In the end, I am walking away from this study with a better understanding of how to structure PD opportunities using the characteristics that meet the needs of adult learners.

This research contains implications for where interactions with adults should occur for effective learning. In the past, PD offerings have been held during the workday, meaning they needed to be pulled from their classroom to attend. Not only did participants have negative sentiments about missing out on instructional time with their
students, but many of the PDs they were attending did not seem transferable to their classrooms. Participants started to let barriers such as schedule, class size, and their lack of efficacy hinder the adoption of new practices to improve student outcomes. Multiple social learning theories including Sociocultural Theory (Vygotsky, 1987), Social Learning Theory (Bandura, 1977), and Andragogy (Knowles, 1980) informed my approach by offering a lens of understanding learning as constructivist in nature. Teachers, in their contexts, could better discuss and see how strategies might fit into their classroom routines. Many participants expressed discussing the strategies they were learning with others encouraged them to implement. As a result, when planning for future PD, I will prioritize social learning theories and honor teacher time, autonomy, and collaboration.

**Implications for Teacher Professional Development**

The findings of this study will be helpful to many professionals within my school district. Teachers and school administrators, district educational technology coaches, and district administrators can all benefit from the findings in this study as it relates to types of PD. As mentioned in the plan for sharing and communicating findings, I will share my results with stakeholders at both the school and district levels. The implications of this study on teacher PD include: (a) teacher collaboration and (b) needs-based PD.

**Teacher collaboration.** Other researchers have noted the importance of teacher collaboration in regards to PD (Chen, 2008; Fenton, 2017). Although multiple opportunities for collaboration existed within the blended collaborative PD, in the form of face-to-face meetings and discussion posts, participants ended the PD opportunity by wanting more time to collaborate on practices they are interested in. When developing
teacher PD, collaboration needs to be a key component; collaboration needs to be intentionally and explicitly included for teachers. These opportunities to collaborate should focus on allowing teachers to have an open dialogue around how they are implementing instructional strategies. Their discussions should focus on what strategies they are using and to what degree the strategies they have employed are proving successful in the classroom for their students. This time allows for self-reflection and problem-solving in a collaborative space (Chen, 2010; Fenton, 2017). If teachers are provided with the opportunity to collaborate before, during, and after PD opportunities, there is a better chance for increased self and collective efficacy.

**Needs-based PD.** Needs-based PD can be an effective approach to providing teachers with skills they need to meet their teacher ZPD. A study by Warford (2011), suggests that teacher ZPD started with self-scaffolding and moves toward other regulation to gain an understanding of a topic. This proposes that teachers spend time reflecting on their practice to identify areas they need scaffolding to improve. From this research, I learned that teachers felt it was important to be in control of their schedules and choose the times to participate in PD that benefited their practice. Needs-based PD is often in contrast to traditional models of PD, which most often occur during the school day. It also became evident that while newer teachers expressed veteran teachers were unwilling to collaborate because they believed they didn’t need to learn anything new; the most experienced teachers had something to gain from participating in the blended collaborative PD. Creating PD based on teacher needs helps designers to not just focus on those whom we might feel need the most support, and to not leave out those whom we consider experts on particular topics. Some of the strongest advocates of the blended
collaborative PD were veterans who had already attended other PDs on productive group work.

**Implications for Teacher Efficacy**

The findings of this study will be helpful for further understanding teacher-self efficacy and collective teacher efficacy. Teachers, school administrators, and leadership can benefit from this study’s findings. The implications of this study on teacher efficacy include: (a) teachers (b) administration and school leadership.

**Teachers.** The emphasis on measuring student outcomes continues to increase. As a result, the successes and failures of the education system have been placed on the backs of teachers and is reliant on teachers self and collective efficacies. Whether a teacher has high or low efficacy is determined by students’ test scores, grades, and even school graduation rates. Because of this the relationship between attitudes and behaviors of teachers is essential for increasing efficacy, expectations, and student achievement (Goddard & Hoy, 2004). Studies have looked at teacher efficacy in terms of working with diverse populations (Tucker & Herman, 2002; Garcia, 2004), particularly white teacher’s working with children of color. While not a focus of this study it did come up during conversations among teachers during the PD. Therefore, research that examines teaching culturally relevant pedagogy is needed. Teachers can also collaborate to develop school communities that encourage and motivate students to value achievement (Garcia, 2004). For this to happen, the climate and structure of schools may need to change in order to facilitate collaborative PD.

Goddard & Hoy (2004) believe that teacher efficacy is essential for successful teaching and learning. Two essential aspects in the development of efficacy, as discussed
in this study are mastery experiences and vicarious experiences (Bandura 1977). Teachers develop beliefs about their capabilities to succeed when they experience success, which includes observing successful lessons. Thus, teachers should actively seek and be encouraged to observe colleagues. An increase in efficacy from observations can be heightened through social persuasion in the form of collaborative dialogue (Hoy et al., 2002). Bandura (1997) stated that social persuasion can be a powerful influencer in increasing teacher efficacy. Further research is needed to understand how verbal persuasion related to teacher efficacy.

Masuda et al., (2013) noted that efficacy beliefs are higher in newer teachers whereas, veterans’ efficacy beliefs are more likely to resist change. This is a result of beliefs held by veteran teachers that solidify overtime with more experience (Masuda et al., 2013). If teachers receive long-term PD that requires them to think critically about their schools and classroom, they are more likely to actively engage in improving their instruction and in turn increase their sense of efficacy.

**Administration and school leadership.** The results of this study found that the role of administration and school leadership is vital because of their capacity to set expectations for teachers and students, whether positive or negative. The tone set by administration and leadership helps teachers gauge assumptions about student learning and achievement. Therefore, the state of the school influences how challenging are interpreted and handled (Hoy et al., 2002). The behavior of administration and school leadership nurtures collective efficacy and a positive school climate by supporting teacher efficacy and school-wide expectations. Administration can reform their schools by implementing and modeling methods that make school climate conducive for students.
and teachers. This can begin with leadership over principals promoting mastery experiences that show how teachers can succeed with students (Bandura, 1997).

Research implied that teacher efficacy is flexible (Goddard & Hoy, 2004). A school faculty that is driven by group orientated goals is more likely to change as a group (Klassen & Chui, 2010). Administration and school leadership can facilitate this by engaging in discussions, workshops, and PD that values faculty input (Hoy et al., 2002). These activities should involve teachers’ critical consideration of their classroom practices, curriculum, instruction, and the implementation of interventions (Klassen & Chui, 2010).

Implications for Future Research

Researchers who are interested in carrying out their research regarding the effects of blended collaborative PD on teacher efficacy, collective efficacy, and collaboration may be interested in this action research. Recommendations for future research include: (a) expanding this research to teachers across the district, and (b) increased duration.

Expand this study to teachers district-wide. This will provide support to teachers at other high schools and middle schools within the district who wish to collaborate to expand their understanding of district initiatives. This would help gauge implementation levels of teachers and trends in student achievement across the district (Coburn & Woulfin, 2012). If the study is expanded, keep in mind that changes may need to be made to specific areas of the PD to tailor content to different grade-levels and stages of implementation across the various school sites.

Increase the duration of the study. A longer innovation would better monitor the long-term effects of collaboration on teacher efficacy and teacher’s collective
efficacy. Research suggests that the most successful PD is sustained over longer periods of time to give participants the time to implement skills learned (Garet et al., 2001). A longer duration was also suggested by several participants throughout the study.

**Limitations**

This study was not without limitations that could be improved upon in future research. These limitations are organized into those related to (a) action research (b) study design, (c) study population, and (d) the researcher.

**Action Research**

One limitation of this study is its roots in action research. Action research is a systematic process of inquiry that employs cycles, action, and reflection (Mertler, 2017). Because action research looks at a highly contextualized problem, the solutions are highly contextualized. For that reason, the particularity of the results are limiting. Mertler (2017) described, “Action research is not conclusive; the results of action research are neither right nor wrong but rather tentative solutions that are based on observations and data collection” (p. 18). The innate characteristics of action research limit this study’s implications.

**Study Design**

The design of this study limits the usefulness of the results beyond a local context. A small sample size of only 15 participants may have affected any variation in collected data (Creswell, 2014). Also, the short duration of this study potentially limited evidence of change in participant beliefs or practices (Creswell, 2014, Mertler, 2017). This study was conducted in ten weeks, including the six-week intervention and participant's semi-structured exit interviews. A longer study, taking place over one or more years, may
better capture the implementation of new practices into participant's classrooms (Yoo, 2016). This study used exit interviews to gain rich qualitative data of participant experiences and thoughts on their involvement in the innovation, but the presence of the researcher in the interviews may have limited and influenced participants’ responses (Saldana, 2016).

Creswell (2014) also noted the limitations of using interviews. One limitation of interviews is the information reported by participants is collected in a designed setting, where their responses may lack quality due to the participants’ ability to quickly articulate their thoughts. This study was designed to determine the impact of teacher efficacy and collaboration when learning in a blended form of professional development. The emphasis may have limited the amount of insight gathered on participants’ thought processes about their implementation of productive group work before their participation (Stronge, Ward & Grant, 2011). Fully capturing classroom practice through quantitative observation was also limited to participants opening their classroom doors to each other (McKnight et al., 2016). Longer more structured opportunities for participant observations would increase the reliability and better help understand how participation may have impacted classroom practice.

Another limitation is the collection and reliance on self-reported qualitative data. While one primary advantage to self-reported data is that it is easy to gather; there are also several disadvantages (Mertler, 2017). In this study, Likert-type scales were used to collect quantitative data on participant’s beliefs regarding their self and collective efficacy. One disadvantage of scales to collect participant responses is that they can be too restrictive this can lead to participants giving themselves moderate to higher than
usual scores (Creswell, 2014, Mertler, 2017). The unreliability can sometimes be explained by considering participants’ interpretation of the questions and their introspective ability to not assess themselves accurately (Creswell, 2014, Mertler, 2017). Triangulation of data in research can help to check the limitations of using self-reported data.

Population

The population for this study also had a set of limitations. First, the selection of participants included purposive sampling (Mertler, 2017) to ensure equal representation of the three criteria years of experience, discipline taught, and grade level taught. It is possible that working with higher numbers of veteran teachers or new teachers may have yielded different results. A second limitation is that the population of this study was heavily female with only five males (Ottenbreit-Leftwich et al., 2010). Had there been more male participants, gender dynamics between participants may have led to different outcomes. Thirdly, all participants in this study were volunteers who were eager to learn and grow their classroom practices (Borko, 2004; Meirink, 2007; Shipley, 2009; Slavit, Kennedy, Lean, Nelson, & Deuel, 2011). Working with reluctant teachers may lead to different perceptions of efficacy and collaboration which could influence their willingness and ability to learn from each other in the blended collaborative PD. Fourth, the existing relationship between myself and the participants (Mertler, 2017). Prior to this study, I was the Educational Technology Coach at the high school where the research took place. It takes time to build trust and rapport with teachers before their comfortable sharing their vulnerabilities and challenges.
Finally, I may have contributed additional limitations as the researcher. When collecting and analyzing data, my own biases and assumptions may have influenced the interpretation of the data sources. However, triangulation through the use of multiple survey scales, participant exit interviews, and researcher journals helped make sure any researcher biases can be controlled (Creswell, 2017). Member checking of transcripts and findings was also used to ensure accuracy in representing participant’s thoughts and experiences (Creswell, 2017). Furthermore, while confidentiality measures (e.g., pseudonyms, numerical IDs, aggregating data, and member checking) were used to encourage participants to respond openly and honestly, there is the potential that to some degree my presence and role as an Educational Technology Coach could have influenced both quantitative and qualitative responses.
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APPENDIX A
LOCAL APPROVAL

Approval to Conduct Action Research
5 messages

Briana Ghan <briana.ghan@salinaPVUSD.org>    Thu, Oct 3, 2019 at 1:06 PM
To: Dan Burns <dan.burns@salinaPVUSD.org>, Joseph Macdonald
    <joseph.macdonald@salinaPVUSD.org>

Good Afternoon Mr. Burns and Mr. McDonald,

In order to begin my research, the University of South Carolina requires district administrator and school principal approval. Once I receive permission, I will be gathering data between January and April of 2020 Pine Hill High School. I am hopeful that the study will consist of at least 15 but no more than 30 purposively selected volunteers from PHHS. If you could respond to this email with your approval, that would be the best way to show that the research is district and school approved. If you need more information before you give your approval, please let me know and we can set up a time to meet, so I can answer questions and concerns.

Research title: The Effect of Blended, Collaborative Professional Development on High School Teachers and Efficacy

Purpose statement: The purpose of this mixed method action research is to explore the effects of blended, collaborative professional development on teacher efficacy, collective efficacy, collaboration, and the implementation of best practices at Pine Hill High School in the Pine Valley High School District.

Research questions:

1. To what extent does teacher professional efficacy change with participation in a blended, collaborative form of professional development?
2. To what extent does teacher professional collective efficacy change with participation in a blended, collaborative form of professional development?

3. How does participation in a blended, collaborative form of professional development affect collaboration amongst participants?

**Methods:** The study will use a mixed-methods approach. Quantitative data will consist of the Teacher Sense of Efficacy Scale and the Collective Teacher Belief Scale, responses from these Likert-type scales will be analyzed using a paired t-test of pre and post results. Descriptive statistics will also be collected from teacher responses in the on and offline portions of the professional development innovation. Qualitative data will come from participant responses on and offline from the professional development, as well as post semi-structured interviews from five purposively selected participants. The qualitative data will be used to explain the quantitative data.

**Ethical considerations:**

All information that teachers provide will be confidential and they will have the final say in what they have shared. Names will not be provided in the research documentation, only transcriptions and a coded participant name, such as Teacher 1 and Teacher 2.

Data will be stored in an out of district Google Account. I will use audio-recording and word processing software to gather data that will be stored in the out of district Google Drive database and local server.

The findings will be reported in my dissertation and shared with the staff at Pine Hill High School, and with other stakeholders at district meetings. If the results would be helpful to a wider audience, I would share in other ways, with district permission, for example, at conferences, on Twitter or a blog, or in education journals.

If I can answer questions about this information, please let me know. If the information I have provided is adequate and you approve, please reply to this email and let me know.
Thank you for your support. I am looking forward to working with teachers at Pine Hill High School during this process.

Kindly,

Dan Burns <dan.burns@salinaPVUSD.org> Fri, Oct 4, 2019 at 8:40 AM
To: Briana Ghan <briana.ghan@salinaPVUSD.org>
Cc: Joseph Macdonald <joseph.macdonald@salinaPVUSD.org>

Good morning,

The research you are doing sounds very appropriate for the work that we do. Keep in mind, this can only be approved through your solicitation of volunteers since we do not provide access to employees for these types of surveys as part of their work function. I am sure that you probably have a waiver or authorization form for each volunteer to sign stating how you will use their information and privacy conditions. This should also include a statement that this research is not associated with the Pine Valley High School District of PHHS.

Again, as long as this is voluntary and on an employee’s own time then it can be approved.

Thank you and I wish you well with your research and would love to see your dissertation when you

Joseph Macdonald <joseph.macdonald@salinaPVUSD.org> Sun, Oct 6, 2019 at 11:22 AM
To: Dan Burns <dan.burns@salinaPVUSD.org>
Cc: Briana Ghan <briana.ghan@salinaPVUSD.org>

Hi Briana,

I approve of your research, please be sure to follow district guidelines.
APPENDIX B
IRB APPROVAL

UNIVERSITY OF SOUTH CAROLINA

OFFICE OF RESEARCH COMPLIANCE

INSTITUTIONAL REVIEW BOARD FOR HUMAN RESEARCH
APPROVAL LETTER for EXEMPT REVIEW

Briana Ghan
1900 Independence Blvd
Salinas, CA 93906 USA

Ref: Pro00004638

Dear Ms. Briana Ghan:

This is to certify that the research study Blended Collaborative Professional Development to improve High School Teacher Efficacy was reviewed in accordance with 45 CFR 46.104(d)(1), the study received an exemption from Human Research Subject Regulations on 11/8/2019. No further action or Institutional Review Board (IRB) oversight is required, as long as the study remains the same. However, the Principal Investigator must inform the Office of Research Compliance of any changes or procedures involving human subjects. Changes to the current research study could result in a reclassification of the study and further review by the IRB.

Because this study was determined to be exempt from further IRB oversight, consent document(s), if applicable, are not stamped with an expiration data.

All research related records are to be retained for at least three (3) years after termination of the study.

The Office of Research Compliance is an administrative office that supports the University of South Carolina Institutional Review Board (USC IRB). If you have questions, contact Lisa Johnson at lisa@mailbox.sc.edu or (803) 777-6870.

Sincerely,

Lisa M. Johnson
ORC Assistant Director and IRB Manager
APPENDIX C

PARTICIPANT INVITATION

Dear Pine Hill Colleagues,

My name is Briana Ghan. Along with being your former EdTech Coach, I am a doctoral candidate in the Education Department at the University of South Carolina. I am conducting a research study as part of the requirements of my degree in Curriculum and Instruction with a focus in Educational Technology, and I would like to invite you to participate.

I am studying the effects of collaborative, blended professional development on teacher self and collective efficacy. If you decide to participate, you will be asked to participate in a blended 6-week long professional development on the topic of Productive Group Work. Participants will be asked to attend three face-to-face meetings, complete weekly readings from the book Productive Group Work: How to Engage Students, Build Teamwork, and Promote Understanding by Doug Fisher and Nancy Frey, respond to discussion posts in Google Classroom, and share classroom experiences. Participants will also be asked to create one slide in a collaborative Google Slide Deck for each face-to-face meeting and at the end of the 6-weeks five participants will be selected to participate in semi-structured interview.

If you are selected to participate in the exit interview, you will be asked questions about collaboration, efficacy, and your implementation of strategies discussed throughout the 6-week professional development. You do not have to answer any questions that you do not wish to answer. The meeting will take place during a mutually agreed upon time and place, and should last about 45 minutes. The interview will be audiotaped so that I can accurately transcribe what is discussed. The tapes will only be reviewed by members of the research team and destroyed upon completion of the study. The three face-to-face meetings will be videotaped, reviewed, and destroyed upon completion of the study.

Participation is confidential. Study information will be kept in a secure location at the University of South Carolina. The results of the study may be published or presented at professional meetings, but your identity will not be revealed.

You will receive a copy of the book Productive Group Work: How to Engage Students, Build Teamwork, and Promote Understanding by Doug Fisher and Nancy Frey and entered into a chance to win one of two $50 Visa gift cards for participating in the study.
I will be happy to answer any questions you have about the study. You may contact me at 831-236-5508 or briana.ghan@salinaPVUSD.org. If you would like to participate, please respond to this invitation via email, then you will receive Google Invites for the three face-to-face meetings and receive an email to join the Google Classroom.
APPENDIX D

CONSENT FORM

UNIVERSITY OF SOUTH CAROLINA
CONSENT TO BE A RESEARCH SUBJECT

The Effect of Blended, Collaborative Professional Development on High School Teachers and Efficacy

KEY INFORMATION ABOUT THIS RESEARCH STUDY:

You are invited to volunteer for a research study conducted by Briana Ghan. I am a doctoral candidate in the Department of Education, at the University of South Carolina. The purpose of this study is to explore the effects of blended, collaborative professional development on teacher efficacy, collective efficacy, collaboration, and the implementation of best practices at Pine Hill High School in the Pine Valley High School District.

You are being asked to participate in this study because you are a teacher at Pine Hill High School who has shown interest in the initial research invitation. This study is being done at Pine Hill High School and will involve approximately 30 volunteers.

The following is a short summary of this study to help you decide whether to be a part of this study. More detailed information is listed later in this form.

PROCEDURES:

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

1. Be added to a Google Classroom where the online portion on the professional development will take place and receive Google Invites to three mandatory face-to-face meetings.
2. Complete a survey before and after the 6-weeks about your self and collective efficacy.
3. Participate in online discussions based on weekly material.
4. Complete one slide for each face-to-face meeting to share.
5. You may be selected to complete a 45-60 minute exit interview about your experience and participation in the professional development.
6. Have your discussion during the face-to-face meetings and exit interview recorded in order to ensure the details that you provide are accurately captured.

**DURATION:**
Participation in the study involves weekly responses and three face-to-face visits over a period of 6-weeks. Each face-to-face meeting will last an hour and weekly online materials will take anywhere from 2-4 hours depending on the time each participant commits.

**RISKS/DISCOMFORTS:**
Loss of Confidentiality:
There is the risk of a breach of confidentiality, despite the steps that will be taken to protect your identity. Specific safeguards to protect confidentiality are to code and create pseudonyms before sharing occurs. All data will also be kept on a server outside of the district.

**BENEFITS:**
You may benefit from participating in this study by gaining a deeper understanding of Productive Group Work and its implementation in the classroom. You may also learn from the experiences of your colleagues and build trust/rapport to improve collaboration.

**COSTS:**
There will be no costs to you for participating in this study.

**PAYMENT TO PARTICIPANTS:**
You will not be paid for participating in this study but you will receive a copy of the book Productive Group Work: How to Engage Students, Build Teamwork, and Promote Understanding by Doug Fisher and Nancy Frey. You will also be entered into win a $50 dollar Visa gift card at the end of the study.

**VOLUNTARY PARTICIPATION:**
Participation in this research study is voluntary. You are free not to participate, or to stop participating at any time, for any reason without negative consequences. In the event that you do withdraw from this study, the information you have already provided will be kept in a confidential manner. If you wish to withdraw from the study, please call or email the principal investigator listed on this form.

I have been given a chance to ask questions about this research study. These questions have been answered to my satisfaction. If I have any more questions about my participation in this study, I am to contact Briana Ghan at 831-236-5508 or email briana.gan@salinaPVUSD.org
Questions about your rights as a research subject are to be directed to, Lisa Johnson, Assistant Director, Office of Research Compliance, University of South Carolina, 1600 Hampton Street, Suite 414D, Columbia, SC 29208, phone: (803) 777-6670 or email: LisaJ@mailbox.sc.edu.

I agree to participate in this study. I have been given a copy of this form for my own records.

If you wish to participate, you should sign below.

Signature of Subject / Participant: __________________________
Date:___________
### APPENDIX E

**TEACHER SENSE OF EFFICACY SCALE**

**Teacher Beliefs**

*Directions:* Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns on the right side, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum. Please respond to each of the questions by considering the combination of your current ability, resources, and opportunity to do each of the following in your present position.

<table>
<thead>
<tr>
<th>Question</th>
<th>None at all</th>
<th>Very Little</th>
<th>Some Degree</th>
<th>Quite a Bit</th>
<th>A Great Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How much can you do to control disruptive behavior in the classroom?</td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
</tr>
<tr>
<td>2. How much can you do to motivate students who show low interest in school work?</td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
</tr>
<tr>
<td>3. How much can you do to calm a student who is disruptive or noisy?</td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
</tr>
<tr>
<td>4. How much can you do to help your students value learning?</td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
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<tr>
<td>5. To what extent can you craft good questions for your students?</td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
</tr>
<tr>
<td>6. How much can you do to get children to follow classroom rules?</td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
</tr>
<tr>
<td>7. How much can you do to get students to believe they can do well in school work?</td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
</tr>
<tr>
<td>8. How well can you establish a classroom management system with each group of students?</td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
</tr>
<tr>
<td>9. To what extent can you use a variety of assessment strategies?</td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
</tr>
<tr>
<td>10. To what extent can you provide an alternative explanation or example when students are confused?</td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
</tr>
<tr>
<td>11. How much can you assist families in helping their children do well in school?</td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
</tr>
<tr>
<td>12. How well can you implement alternative teaching strategies in your classroom?</td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
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</tbody>
</table>
APPENDIX F

COLLECTIVE TEACHER BELIEF SCALE

<table>
<thead>
<tr>
<th>Collective Teacher Beliefs</th>
<th>None at all</th>
<th>Very Little</th>
<th>Some Degree</th>
<th>Quite a Bit</th>
<th>A Great Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How much can teachers in your school do to produce meaningful student learning?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2. How much can your school do to get students to believe they can do well in schoolwork?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3. To what extent can teachers in your school make expectations clear about appropriate student behavior?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4. To what extent can school personnel in your school establish rules and procedures that facilitate learning?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5. How much can teachers in your school do to help students master complex content?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6. How much can teachers in your school do to promote deep understanding of academic concepts?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7. How well can teachers in your school respond to defiant students?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8. How much can school personnel in your school do to control disruptive behavior?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9. How much can teachers in your school do to help students think critically?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10. How well can adults in your school get students to follow school rules?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11. How much can your school do to foster student creativity?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>12. How much can your school do to help students feel safe while they are at school?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
APPENDIX G

SEMI-STRUCTURED INTERVIEW PROTOCOL

Semi-Structured Interview Protocol and Sample Questions

Hello, and thank you for participating in our survey. Before I begin, let’s review the purpose of this study. The purpose of this mixed method action research is to explore the effects of blended communities of practice when used for professional development on teacher efficacy, collective teacher efficacy, teacher collaboration, and the implementation of best practices at PHHS. To facilitate my note-taking, I would like to audio record our conversation. Is that ok? Only researchers on this project will be privy to the recordings created in this interview, which will ultimately be destroyed after they are transcribed. In addition, you must sign a form devised to meet our human subject requirements. Essentially, this document states that: (1) all information will be held confidential, (2) your participation is voluntary and you may stop at any time if you feel uncomfortable, and (3) we do not intend to inflict any harm. Thank you for your agreeing to participate. I have planned this interview to last no longer than an hour. During this time, I have several questions that I would like to cover. If time begins to run short, it may be necessary to interrupt you in order to push ahead and complete this line of questioning. Before we begin do you have any questions for me? (Clarify anything necessary) Great! Let’s get started.

First, I will ask some demographic questions in order to better describe the sample in our study.

Name:

Gender:

Highest education level achieved:

What is your current teaching job within the district?

What level and subjects do you teach?

How long have you been a teacher? In the district?

Please describe your familiarity with the educational initiatives in the Pine Valley High School District.
What is your background with using technology in education?

Thank you, now I will begin the questions aligned to the research questions and methods of this study.

1. How would you describe your teaching philosophy? Tell me about how you feel you are making a difference in your students’ achievement?
2. How do you think your teaching skills match your job expectations? What are the parts of teaching you find most challenging? How did your teacher training prepare you? What areas of teaching weren’t you prepared for in your training?
3. How do you know when you are being a successful teacher? When you think about your teaching, whom do you feel most responsible to in your job?
4. What leads to change in one's own professional practice to enhance student learning?
5. Engagement is often inferred by the level and depth of the knowledge and skills shared in online environments. It requires that you put forth continual effort and contribute and connect to the professional development, including both taking and giving knowledge, at deep and profound levels that go beyond the surface. Based on this definition, how would you rate your engagement level in the online environment?
6. What, if anything, did you gain by participating in the professional development community?
7. Are there drawbacks from participating in the professional development community?
8. Teacher efficacy is defined as the extent to which teachers believe they can affect student learning. How, if at all, has your sense of teacher efficacy changed as a result or your involvement in the professional development community? Please explain.
9. How, if at all, has your involvement in the professional development community enhanced student learning?
10. What role, if any, does motivation play in changing a teacher’s sense of teacher efficacy, implementation of curricular change, and involvement in professional development community activities?
11. What is it about your school that gives you the most pride? What types of support do you think your school affords teachers? What types of support do you think a school district should afford teachers?
12. How would you characterize the teachers’ ability and desire to collaborate with each other? Why is this important (or not)?
13. How would you describe the participation of others in the professional development community?
14. How comfortable were you with sharing dilemmas and/or contributing your opinions with the group?
15. Did you feel that you were engaged with your fellow professional development community members? In what ways? If not, why?
16. Did you feel like you were forming a community throughout your participation in this form of professional development? Please explain. Would you characterize yourself as a —team player!? If so (or not) tell me more… As a teacher, what activities occur that require you to collaborate with colleagues? How do they impact your teaching?
17. For you, is there a difference in the way you interacted in the online professional development community versus the face-to-face interactions with the other participants?
18. Would you continue working and collaborating in different professional development communities using this format?
19. How has participating in the professional development community affected your:
   a. Lesson planning/development?
   b. Teaching practice in your classroom?
   c. Do you have any teacher artifacts that would help illustrate your answers?
20. What, if anything can be done to improve the following:
   a. Communication in the professional development community?
   b. Collaboration in the professional development community?

Thank you for your participation in this interview.
Goal: The goal of the GRR & CM Instructional Rubric is to provide teachers, coaches, and administrators with a tool that will improve the uniform implementation of these research-based instructional initiatives.

Purpose: The purpose of this rubric is to provide a means of self-reflection to be used by the teacher throughout the year and during the coaching cycle. This will provide a common framework for teachers across the district to empower them to improve instruction and refine their practice. In turn, this framework will allow teachers to provide equitable access to curriculum for every student, providing students with quality instruction as the first line of intervention. In addition, using this tool at regular intervals will provide valuable information for monitoring the implementation of the district-wide instructional model and provide direction for staff development. This rubric is not intended to be used as a formal evaluation tool.

Structure: The rubric is organized around the domains covering all aspects of GRR & CM. There are sixteen key GRR elements with clarification of expectations. The CM components include backward design, language as part of content teaching, structured student talk, interactive reading and note-making, academic writing, and use of assessment to refine instruction.
The rubric uses the following four-level rating scale:

<table>
<thead>
<tr>
<th>Experimenting</th>
<th>Emerging</th>
<th>Effective</th>
<th>Exemplary</th>
</tr>
</thead>
<tbody>
<tr>
<td>The <em>experimenting</em> level is clearly at the beginning stages of implementation; an attempt is evident but is missing critical elements.</td>
<td>The <em>emerging</em> level describes developing instruction and shows a clear attempt to implement the instructional model but is incongruent or missing elements.</td>
<td>The <em>effective</em> level describes solid, expected instruction that satisfies all aspects of the element.</td>
<td>The <em>exemplary</em> level is reserved for evidence-based, outstanding teaching that meets very demanding criteria.</td>
</tr>
</tbody>
</table>

**Process:** When self-assessing, take each element, read across the four levels (Experimenting, Emerging, Effective, and Exemplary), find the level that best describes your performance, and circle or highlight that cell. This creates a graphic illustration showing areas of strength and areas for growth.

**FOCUS LESSON: I DO (Whole-group, teacher-directed delivery of new learning with evidence of backward design)**

<table>
<thead>
<tr>
<th>Elements</th>
<th>Experimenting</th>
<th>Emerging</th>
<th>Effective</th>
<th>Exemplary</th>
</tr>
</thead>
</table>
| **Establishing purpose** | Learning goal addresses either content, language function, or product. Learning goal is misaligned to the tasks. It may be posted or stated. | Learning goal addresses content, language function, and product. Learning goal is misaligned to some tasks. It is posted but not communicated. | Learning goal addresses standards-driven content, language function, and product. Learning goal is aligned to the tasks. It is posted, accessible, and communicated to students. | Learning goal clearly addresses standards-driven content, language function, and product. Learning goal is aligned to the tasks. It is posted, accessible, and effectively communicated to
<table>
<thead>
<tr>
<th>Establishing student connections</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher provides irrelevant connections between students’ prior knowledge and the learning goal.</td>
<td>Teacher provides a relevant connection between students’ prior knowledge and the learning goal.</td>
<td>Teacher provides multiple relevant connections between students’ prior knowledge and the learning goal.</td>
<td>Teacher facilitates students in connecting their prior knowledge to the learning goal.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Providing explicit language instruction</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Teacher provides content (bricks) and functional language (mortar), but functional language is misaligned or no example is provided during teacher modeling/demonstration.</td>
<td>Teacher models correct use of the content (bricks) and functional language (mortar) based on the learning goal. Teacher provides some form of language support.</td>
<td>Teacher models correct use of the content (bricks) and functional language (mortar) based on the learning goal. Teacher differentiates language supports. Teacher explains the purpose or portability of the functional language aligned to the learning goal.</td>
<td>Teacher models multiple correct uses of the content (bricks) and functional language (mortar) based on the learning goal. Teacher differentiates level-appropriate language supports. Teacher explains purpose and portability of the functional language aligned to the learning goal.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Modeling and metacognition</th>
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<tbody>
<tr>
<td>Teacher’s modeling contains few, if any, metacognitive (expert thinking) indicators. Teacher uses “you” or “we” statements that focus on the process of</td>
<td>Teacher’s metacognitive (expert thinking) modeling includes the use of “I” statements when naming the task/skill/strategy.</td>
<td>Teacher’s metacognitive (expert thinking) modeling includes “I” statements when explaining the task/skill/strategy. Teacher explains the</td>
<td>Teacher’s metacognitive (expert thinking) modeling includes “I” statements when explaining the task/skill/strategy. Teacher explains the cross-curricular/real world</td>
</tr>
</tbody>
</table>
the task, not on modeling expert thinking.

Teacher demonstrates task/skill/strategy.

cross-curricular/real world portability of the task/skill/strategy. Teacher demonstrates task/skill/strategy and alerts students of errors to avoid.

portability of the task/skill/strategy. Teacher demonstrates task/skill/strategy, alerts students of errors to avoid, and shows students how to check for the application of the task/skill/strategy.

GUIDED PRACTICE: WE ALL DO (Whole-group, teacher-facilitated practice of new learning to transition out of the focus lesson)

<table>
<thead>
<tr>
<th>Elements</th>
<th>Experimenting</th>
<th>Emerging</th>
<th>Effective</th>
<th>Exemplary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guiding students through a task</td>
<td>Teacher directs students in completing the task aligned to the learning goal and requires minimal participation.</td>
<td>Teacher leads students in completing the task aligned to the learning goal and requires minimal participation. Based on student responses, teacher provides general feedback to the class.</td>
<td>Teacher refers to the learning goal. Teacher leads students in completing the task aligned to the learning goal and solicits their participation. Based on student responses, teacher provides specific feedback and modifies instruction.</td>
<td>Teacher explicitly refers to the learning goal and makes connections to the task. Teacher leads all students in completing the task aligned to the learning goal and requires their participation. Based on student responses, teacher provides specific feedback and modifies instruction.</td>
</tr>
<tr>
<td>Checking for understanding</td>
<td>Teacher calls on volunteers to demonstrate their understanding. Teacher asks questions</td>
<td>Teacher calls on various students to demonstrate their understanding.</td>
<td>Teacher provides opportunities for all students to demonstrate their understanding.</td>
<td>Teacher requires all students to demonstrate their understanding. Teacher purposefully selects various</td>
</tr>
</tbody>
</table>
only poses closed-ended questions and does not address student misconceptions or misunderstandings.

and provides correct answers to incomplete or incorrect student responses.

Teacher purposefully selects various students (volunteer and non-volunteer) using different methods to elicit student responses. Teacher asks open-ended questions. Teacher prompts or cues for deeper understanding. Teacher uses both written and oral student responses to measure progress toward the learning goal and uses their responses to inform instruction.

students (volunteer and non-volunteer) at varying proficiency levels using different methods to elicit student responses. Teacher asks open-ended questions. Teacher prompts and cues for deeper understanding. Teacher uses both written and oral student responses to measure progress toward the learning goal and uses their responses to inform instruction.

<table>
<thead>
<tr>
<th>ELEMENTS</th>
<th>EXPERIMENTING</th>
<th>EMERGING</th>
<th>EFFECTIVE</th>
<th>EXEMPLARY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providing a task that reflects the learning goal</td>
<td>Teacher misaligns the task to the learning goal and does not require students to apply the content and language of the learning goal.</td>
<td>Teacher misaligns the task to the learning goal or does not require students to apply the content or language of the learning goal.</td>
<td>Teacher refers to the learning goal and provides a task aligned to the learning goal. The task requires students to apply the content and</td>
<td>Teacher explicitly refers to the learning goal and makes connections to the task. Teacher provides a task aligned to the learning goal and the task requires students to apply the content and</td>
</tr>
<tr>
<td>Providing a complex task</td>
<td>Task allows students a limited opportunity to apply concepts modeled. The task encourages collaboration, but no structures are in place for interdependence and face-to-face interaction.</td>
<td>Task allows students a limited opportunity to apply concepts modeled. The task encourages collaboration, but no structures are in place for interdependence or face-to-face interaction.</td>
<td>Task allows students an opportunity to use a variety of resources to creatively apply their knowledge of concepts modeled. The task requires collaboration, interdependence, and language supports for structured face-to-face interaction.</td>
<td>Task allows students opportunities to use a variety of resources to creatively apply their knowledge of concepts modeled. The task requires collaboration, interdependence, and language supports for structured face-to-face interaction. Task provides the opportunity for to make connections beyond the learning goal.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Grouping students purposefully</td>
<td>Teacher rarely groups students to address their needs (proficiency levels, content understanding, personality, or behavior).</td>
<td>Teacher sometimes groups students to address their needs (proficiency levels, content understanding, personality, or behavior).</td>
<td>Teacher often groups students to address their needs (proficiency levels, content understanding, personality, or behavior).</td>
<td>Teacher always groups students to address their needs (proficiency levels, content understanding, personality, and behavior).</td>
</tr>
<tr>
<td>Monitoring for content.</td>
<td>Teacher monitors for language, content, or strategies/skills but</td>
<td>Teacher monitors and has an accountability system</td>
<td>Teacher monitors most groups and has an accountability system for</td>
<td>Teacher monitors all groups and has an accountability</td>
</tr>
<tr>
<td><strong>Designing opportunities for students to reflect on their learning</strong></td>
<td><strong>Teacher provides an unstructured opportunity for students to reflect on their content learning or group processing.</strong></td>
<td><strong>Teacher leads students in reflecting on their individual content learning or group processing, as an individual and as a group.</strong></td>
<td><strong>Teacher facilitates use of reflection tool(s) to reflect on individual content learning. Teacher facilitates use of reflection tool(s) to reflect on group processing as an individual and as a group.</strong></td>
<td><strong>Teacher provides access to reflection tool(s) to reflect on and discuss individual content learning. Teacher provides access to reflection tool(s) to reflect on and discuss group processing as an individual and as a group.</strong></td>
</tr>
</tbody>
</table>

### (Subset of PGW) GUIDED INSTRUCTION (Teacher driven instruction/feedback that occurs during PGW)

<table>
<thead>
<tr>
<th><strong>Elements</strong></th>
<th><strong>Experimenting</strong></th>
<th><strong>Emerging</strong></th>
<th><strong>Effective</strong></th>
<th><strong>Exemplary</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Targeting instruction for identified student needs</strong></td>
<td>Teacher attempts to address targeted students’ needs from formative assessment(s).</td>
<td>Teacher inconsistently addresses some targeted students’ needs from formative assessment(s).</td>
<td>Teacher addresses most targeted students’ needs from formative assessment(s).</td>
<td>Teacher addresses all targeted students’ needs from formative assessment(s).</td>
</tr>
<tr>
<td><strong>Using purposeful questions, cues, and prompts</strong></td>
<td>Teacher generally uses closed-ended questions to lead targeted students to meet the learning.</td>
<td>Teacher generally uses open-ended questions to lead targeted students to meet the learning goal. Teacher prompts and/or</td>
<td>Teacher generally uses open-ended questions to lead targeted students to meet the learning goal. Teacher prompts and/or</td>
<td>Teacher consistently uses open-ended questions to lead targeted students to meet the learning goal. Teacher prompts and/or</td>
</tr>
<tr>
<td>Elements</td>
<td>Experimenting</td>
<td>Emerging</td>
<td>Effective</td>
<td>Exemplary</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>---------------</td>
<td>----------</td>
<td>-----------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Providing practice that is meaningful, relevant, &amp; an extension of learning</td>
<td>Teacher misaligns the learning goal to the task. The task provides minimal opportunities for students to demonstrate learning of the content or language goal.</td>
<td>Teacher connects the learning goal to the task. The task provides opportunities for students to demonstrate learning of the content and/or language goal.</td>
<td>Teacher refers to the learning goal and makes connections to the task. The task provides opportunities for students of varying proficiency levels to demonstrate learning of the content and language goal in a new context.</td>
<td>Teacher explicitly refers to the learning goal and makes connections to the task. The task provides several opportunities for students of varying proficiency levels to demonstrate learning of the content and language goal in a new context.</td>
</tr>
<tr>
<td>Designing opportunities for students to take responsibility for their learning</td>
<td>Teacher provides an opportunity for students to reflect on or evaluate their learning.</td>
<td>Based on the learning goal, teacher provides an opportunity for students to reflect on and evaluate their learning.</td>
<td>Based on the learning goal, teacher provides opportunities for students to reflect on or evaluate their own learning in order to set their future learning goals.</td>
<td>Based on the learning goal, teacher provides opportunities for students to reflect on and evaluate their own learning in order to set their future learning goals.</td>
</tr>
</tbody>
</table>

**INDEPENDENT PRACTICE: YOU DO ALONE (Student-centered, application of learning goal)**
<table>
<thead>
<tr>
<th>Learning Goal and Task</th>
<th>Experimenting</th>
<th>Emerging</th>
<th>Effective</th>
<th>Exemplary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology use is misaligned to the learning goal and task.</td>
<td>Technology use is misaligned to the learning goal or task.</td>
<td>Technology use is aligned to the learning goal and task.</td>
<td>Technology use is aligned to the learning goal and task and helps make connections beyond the learning goal.</td>
<td></td>
</tr>
</tbody>
</table>

| 4Cs 21st Century Skills = Creativity Collaboration Communication Critical Thinking | Technology acts as a direct substitute with no functional improvement to the 4Cs. | Technology enhances opportunities to use the 4Cs by increasing functionality. | Technology enhances opportunities to use the 4Cs for significant task redesign. | Technology transforms opportunities to use the 4Cs for creation of new tasks previously inconceivable. |

| Informing Instruction | Technology is used to inform instruction as a direct tool or substitute and does not enhance information gathered. | Technology is used to inform instruction and enhances the ability to gather information. | Technology is used to inform instruction and transforms the type of information gathered and/or the way students demonstrate their understanding. | Technology is used to inform instruction and transforms the type of information gathered and the way students demonstrate their understanding beyond the learning goal. |
APPENDIX I

ONLINE COLLABORATIVE BLENDED AGENDAS

Blended Collaborative 6-Week PD: Productive Group Work
Google Classroom Weekly Agendas

Week 1: Defining Productive Group Work
Dates:

Overview
We know that group work can be instructionally effective, but only if it is productive. We don't just want busywork when students work in groups -- we want learning! Work doesn't always create learning, an idea that many teachers still struggle with. These teachers make the assumption that even with a clear task, group work will be productive. Conversely, many teachers assume that when building classroom culture, group work will be productive as well. Actually, multiple factors lead to effective and productive group work, but all must be in place to make it happen. So how do we create that structure for productive group work?

Learning Objectives
- Participants will be able to define productive group work.
- Participants will be able to identify complex tasks.

Learning Activities

Activity 1: Readings and Other Materials
- Fisher & Frey - Productive Group Work
  - Introduction and Ch. 1 Defining Productive Group Work Pgs. 1-22
- Willona Sloan - Planning for Great Group Work
- Kit Norris - Meaningful Tasks: Three Critical Questions
- Teaching Channel - 1/3/6 Protocol Strategy

Activity 2: Discussion Post

✓ Do the appropriate preparation. Complete readings before you join the discussion
✓ Take time to organize your thoughts before posting. Read your post one more time before you submit it.
✓ Provide only essential information in your post.
✓ Respect others' ideas and opinions. Feel free to disagree, but express your disagreement in a respectful manner.
✓ Do not wait until the last minute to post your opinion. Being active and prompt in discussion is required for this class.

Create a new thread for yourself and enter your name for the subject. You should make 1 post to present your own discussion and at least 2 posts to reply to the other students’ discussions. Be sure to check the calendar as initial posts and response due dates vary.

Respond to the following discussion questions:

1. When you are planning your syllabus for the semester or year, how do you decide which topics, themes, or projects will lend themselves to group work in your content?
2. How do you communicate or explain the objectives for the group task and define any relevant concepts to students (orally, in writing, by providing examples)?
3. How do you identify prerequisite skills students will need to successfully accomplish a specific project or task?
4. When and how you teach students these skills?

Activity 3: Pineapple Chart

A Pineapple Chart is a system that allows teachers to invite one another into their classrooms for informal observation. On the chart, teachers “advertise” the interesting things they are doing in their classrooms, activities they think others might want to observe. The activities could be as complex as a science lab, a history simulation, or a Skype session with a school in another country. Or they could be as simple as a read-aloud or a lesson on badminton.

Our Pineapple Chart can be located in this Google Doc. The chart represents one week of school. Along the top, five columns are labeled Monday through Friday. Along the side, rows assigned to various chunks of each school day. In a middle or high school, these would be class periods. Each week a new chart will be added to the top of our Google Doc. If you informally observe a teacher's classroom from the chair please complete this Google Form, which is also located on the Pineapple Chart and in the resources section of our PGW PD Google Classroom.

Week 2: Using Positive Interdependence

Dates:

Overview

You’ll know when you've succeeded in structuring positive interdependence when students perceive that they "sink or swim together.” This can be achieved through mutual goals, division of labor, dividing materials, roles, and by making part of each student’s grade dependent on the performance of the rest of the group. Group members must believe that each person's efforts benefit not only him- or herself, but all group members as well.

Learning Objectives

- Participants will be able to explain and describe positive interdependence.
Learning Activities

Activity 1: Readings and Other Materials
- Fisher & Frey *Productive Group Work*
  - Ch. 2 Using Positive Interdependence *Pgs. 23-36*
- Lauren Reavis - *Positive Interdependence*
- Marjan Laal - *Positive Interdependence in Collaborative Learning*

Activity 2: Discussion Post

- Do the appropriate preparation. Complete readings before you join the discussion.
- Take time to organize your thoughts before posting. Read your post one more time before you submit it.
- Provide only essential information in your post.
- Respect others’ ideas and opinions. Feel free to disagree, but express your disagreement in a respectful manner.
- Do not wait until the last minute to post your opinion. Being active and prompt in discussion is required for this class.

Create a new thread for yourself and enter your name for the subject. You should make **1 post to present your own discussion and at least 2 posts to reply** to the other students' discussions. Be sure to check the calendar as initial posts and response due dates vary.

Respond to the following questions:

1. Are there general skills students need to learn and practice in order to work productively in groups, regardless of the task or product (ex. active listening, helping one another master content)?
2. Are there team-building activities you do to help students when they are getting started with group work?
3. How do you create tasks that require interdependence in which students are responsible to and dependent on others in the group?
4. How do you ensure that there is a fair division of labor for each member?

Activity 3: Pineapple Chart

A Pineapple Chart is a system that allows teachers to invite one another into their classrooms for informal observation. On the chart, teachers “advertise” the interesting things they are doing in their classrooms, activities they think others might want to observe. The activities could be as complex as a science lab, a history simulation, or a Skype session with a school in another country. Or they could be as simple as a read-aloud or a lesson on badminton.

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Week 3: Promoting Face-to-Face Interaction

Overview

Important cognitive activities and interpersonal dynamics only occur when students promote each other's learning. This includes oral explanations of how to solve problems, discussing the nature of the concepts being learned, and connecting present learning with past knowledge. It is through face-to-face, promotive interaction that members become personally committed to each other as well as to their mutual goals.

Learning Objectives

- Participants will be able to identify face-to-face interaction.
- Participants will be able to explain different ways to purposefully group students.
- Participants will be able to explain ways to monitor for language, content, and skills during productive group work.

Learning Activities

Activity 1: Readings and Other Materials

- Fisher & Frey Productive Group Work
  - Ch. 3 Promoting Face-to-Face Interaction Pgs. 37-50
- Center for Teaching and Learning- Using Technology Outside the Classroom to Improve Face-to-Face Classroom Interaction
- Teaching Channel- Purposeful Grouping
- Jordan Catapano- 30 Ways to Organize Students for Group Work
- La Paz Middle School Productive Group Work Rubric
- Using a Roster to Check For Understanding

Activity 2: Discussion Post

✓ Do the appropriate preparation. Complete readings before you join the discussion
✓ Take time to organize your thoughts before posting. Read your post one more time before you submit it.
✓ Provide only essential information in your post.
✓ Respect others' ideas and opinions. Feel free to disagree, but express your disagreement in a respectful manner.
✓ Do not wait until the last minute to post your opinion. Being active and prompt in discussion is required for this class.

Create a new thread for yourself and enter your name for the subject. You should make 1 post to present your own discussion and at least 2 posts to reply to the other students' discussions. Be sure to check the calendar as initial posts and response due dates vary. Respond to the following questions:

1. How do you organize students into groups? What do teachers with large numbers of English learners need to think about when organizing groups?
2. How do you help groups devise a plan of action (who will be doing what and when)?
3. What kinds of rewards or encouragement do you use to support or motivate students working in groups?
4. Do students have opportunities to work together face-to-face as well as online?

**Activity 3: Pineapple Chart**

A Pineapple Chart is a system that allows teachers to invite one another into their classrooms for informal observation. On the chart, teachers “advertise” the interesting things they are doing in their classrooms, activities they think others might want to observe. The activities could be as complex as a science lab, a history simulation, or a Skype session with a school in another country. Or they could be as simple as a read-aloud or a lesson on badminton.

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**Week 4: Ensuring Individual and Group Accountability**

**Dates:**

**Overview**

The essence of individual accountability in cooperative learning is "students learn together, but perform alone." This ensures that no one can "hitch-hike" on the work of others. A lesson's goals must be clear enough that students are able to measure whether (a) the group is successful in achieving them, and (b) individual members are successful in achieving them as well.

**Learning Objectives**

- Participants will be able to identify ways to check for individual and group accountability.
- Participants will be able to describe different types of questions, cues, and prompts for furthering groups.

**Learning Activities**

**Activity 1: Readings and Other Materials**

- Fisher & Frey Productive Group Work
  - Ch. 4 Ensuring Individual and Group Accountability *Pgs. 51-67*
- Fisher & Frey- Identifying Instructional Moves During Guided Instruction

**Activity 2: Discussion Post**

✓ Do the appropriate preparation. Complete readings before you join the discussion
✓ Take time to organize your thoughts before posting. Read your post one more time before you submit it.
✓ Provide only essential information in your post.
✓ Respect others’ ideas and opinions. Feel free to disagree, but express your disagreement in a respectful manner.
✓ Do not wait until the last minute to post your opinion. Being active and prompt in discussion is required for this class.

Create a new thread for yourself and enter your name for the subject. You should make **1 post to present your own discussion and at least 2 posts to reply** to the other students' discussions. Be sure to check the calendar as initial posts and response due dates vary.

Respond to the following questions:

1. How do you ensure there is a fair division of labor for each member?
2. How do you differentiate group tasks to ensure students are working at standards while accounting for differences in language and literacy skills?
3. For tasks that projects that span a number of days or weeks, what process do you use to check progress?

**Activity 3: Pineapple Chart**

A Pineapple Chart is a system that allows teachers to invite one another into their classrooms for informal observation. On the chart, teachers “advertise” the interesting things they are doing in their classrooms, activities they think others might want to observe. The activities could be as complex as a science lab, a history simulation, or a Skype session with a school in another country. Or they could be as simple as a read-aloud or a lesson on badminton.

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**Week 5: Building Interpersonal and Small-Group Skills**

**Dates:**

**Overview**

In cooperative learning groups, students learn academic subject matter (taskwork) and also interpersonal and small group skills (teamwork). Thus, a group must know how to provide effective leadership, decision-making, trust-building, communication, and conflict management. Given the complexity of these skills, teachers can encourage much higher performance by teaching cooperative skill components within cooperative lessons. As students develop these skills, later group projects will probably run more smoothly and efficiently than early ones.
Learning Objectives

- Participants will be able to explain ways to develop students interpersonal and small group skills.

Learning Activities

**Activity 1: Readings and Other Materials**
- Fisher & Frey Productive Group Work
  - Ch. 5 Building Interpersonal and Small-Group Skills *Pgs. 68-83*
- Starting Point - Reinforcing Cooperative Skills
- Teaching Channel - Teaching Collaboration Skills
- Centre for Teaching Excellence - When Things Go Wrong

**Activity 2: Discussion Post**

- ✓ Do the appropriate preparation. Complete readings before you join the discussion
- ✓ Take time to organize your thoughts before posting. Read your post one more time before you submit it.
- ✓ Provide only essential information in your post.
- ✓ Respect others’ ideas and opinions. Feel free to disagree, but express your disagreement in a respectful manner.
- ✓ Do not wait until the last minute to post your opinion. Being active and prompt in discussion is required for this class.

Create a new thread for yourself and enter your name for the subject. You should make **1 post to present your own discussion and at least 2 posts to reply** to the other students' discussions. Be sure to check the calendar as initial posts and response due dates vary.

Respond to the following questions:

1. How do students deal with uncooperative members and manage conflict?
2. How do you assess students’ feelings about working in groups- particularly their prior experiences with group work and whether those experiences were positive or negative?
3. How do you deal with students who would rather work alone?
4. What happens when a group is not working out?

**Activity 3: Pineapple Chart**

A Pineapple Chart is a system that allows teachers to invite one another into their classrooms for informal observation. On the chart, teachers “advertise” the interesting things they are doing in their classrooms, activities they think others might want to observe. The activities could be as complex as a science lab, a history simulation, or a Skype session with a school in another country. Or they could be as simple as a read-aloud or a lesson on badminton.

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complete this Google Form, which is also located on the Pineapple Chart and in the resources section of our PGW PD Google Classroom.

Week 6: Incorporating Group Processing
Dates:

Overview

After completing their task, students must be given time and procedures for analyzing how well their learning groups are functioning and how well social skills are being employed. Group processing involves both taskwork and teamwork, with an eye to improving it on the next project.

Learning Objectives

- Participants will be able to describe multiple ways students can be assessed, assess themselves, and their group mates.
- Participants will be able to explain strategies for student reflection on the task.

Learning Activities

Activity 1: Readings and Other Materials
- Fisher & Frey Productive Group Work
  - Ch. 6 Incorporating Group Processing Pgs. 84-96
- Eberly Center- How Can I assess Group Work?
- UNSW Sydney- Supporting Students to Reflect on their Group Work

Activity 2: Discussion Post

✓ Do the appropriate preparation. Complete readings before you join the discussion
✓ Take time to organize your thoughts before posting. Read your post one more time before you submit it.
✓ Provide only essential information in your post.
✓ Respect others’ ideas and opinions. Feel free to disagree, but express your disagreement in a respectful manner.
✓ Do not wait until the last minute to post your opinion. Being active and prompt in discussion is required for this class.

Create a new thread for yourself and enter your name for the subject. You should make 1 post to present your own discussion and at least 2 posts to reply to the other students' discussions. Be sure to check the calendar as initial posts and response due dates vary. Respond to the following questions:

1. How is group work evaluated (by the teacher, the group, and individuals)?
2. Does the evaluation include both the quality of the product and the effectiveness of the group?
3. How do you communicate the grading system to students?
4. Is there group work that is not formally evaluated? If yes, what feedback or assessments are used for this type of group work?

**Activity 3: Pineapple Chart**

A Pineapple Chart is a system that allows teachers to invite one another into their classrooms for informal observation. On the chart, teachers “advertise” the interesting things they are doing in their classrooms, activities they think others might want to observe. The activities could be as complex as a science lab, a history simulation, or a Skype session with a school in another country. Or they could be as simple as a read-aloud or a lesson on badminton.

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**APPENDIX J**

**TEACHER SWAP MEETING AGENDAS**

**Blended Collaborative 6-Week PD: Productive Group Work**

**Teacher Swap Meeting Agendas**

<table>
<thead>
<tr>
<th>Welcome</th>
<th>Please sign-in</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introductions</strong></td>
<td><strong>Sentence Starters</strong></td>
</tr>
<tr>
<td>○ Write sentence starters on slips of paper</td>
<td></td>
</tr>
<tr>
<td>■ Although most people don’t find…</td>
<td></td>
</tr>
<tr>
<td>■ I am…</td>
<td></td>
</tr>
<tr>
<td>■ I have never…</td>
<td></td>
</tr>
<tr>
<td>■ I love it when…</td>
<td></td>
</tr>
<tr>
<td>■ I love to…</td>
<td></td>
</tr>
<tr>
<td>■ I think I have the best…</td>
<td></td>
</tr>
<tr>
<td>■ I would never…</td>
<td></td>
</tr>
<tr>
<td>■ My idea of beauty is…</td>
<td></td>
</tr>
<tr>
<td>■ The best thing I ever did for my child or pet is…</td>
<td></td>
</tr>
<tr>
<td>■ The best way for me to relax is…</td>
<td></td>
</tr>
<tr>
<td>■ The best way to save…</td>
<td></td>
</tr>
<tr>
<td>■ The biggest and best…</td>
<td></td>
</tr>
<tr>
<td>■ The funniest thing that ever happened to me was…</td>
<td></td>
</tr>
<tr>
<td>■ The greatest thing my child or pet ever did was…</td>
<td></td>
</tr>
<tr>
<td>■ The lowest…</td>
<td></td>
</tr>
<tr>
<td>■ The most important decision I ever made in was…</td>
<td></td>
</tr>
<tr>
<td>■ The most unbelievable thing…</td>
<td></td>
</tr>
<tr>
<td>■ The thing that makes me laugh is…</td>
<td></td>
</tr>
<tr>
<td>■ There is nothing I enjoy more than…</td>
<td></td>
</tr>
<tr>
<td>○ Have each person pull a slip from and write their name, and complete the sentence starter</td>
<td></td>
</tr>
<tr>
<td>○ Also provide 2 or more additional sentences of</td>
<td></td>
</tr>
</tbody>
</table>
| Structure and Organization | - Research Purpose  
- Consent Forms  
- Overview of 6-week Blended Collaborative Professional Development  
- What is a slam? |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Test</td>
<td>Complete</td>
</tr>
</tbody>
</table>
| Structured Student Talk Activity | Think, Write, Pair, Share  
- What is productive group work? |

**Mid Teacher Swap Meeting:**

<table>
<thead>
<tr>
<th>Welcome</th>
<th>Please sign-in</th>
</tr>
</thead>
</table>
| Grounding | **I’m In**  
  - Members go around the circle briefly naming anything on their mind. (Examples: “I’m concerned about my eighth grader. She says she doesn’t have any friends. I know she is just down and does have friends. I’m figuring out how to handle this. OK. I’m in.”) or “I’ve never had a third grade class so excited about creative writing. Their enthusiasm lifts me up every day. OK. I’m in.”)  
  - Stress that there is no side talk.  
  - At the end, make a summary paraphrase. |

<p>| | |
| | |</p>
<table>
<thead>
<tr>
<th>Teacher Swap Slam</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teacher Swap Meeting Slam</strong></td>
</tr>
<tr>
<td>★ <strong>The Teacher Swap Slam</strong> is a quick way to teach others about the <strong>strategy tips, tricks, or reflect</strong>, on something that was discovered over the past few weeks <strong>participating in the Online Productive Group Work Professional Development</strong>.</td>
</tr>
<tr>
<td>★ In order to allow everyone to SLAM!, you will only have a <strong>maximum of 3 minutes to present</strong> your strategies, tip, trick, or reflection.</td>
</tr>
<tr>
<td>★ Please <strong>create one slide</strong> in this presentation, an example has been provided on the next slide.</td>
</tr>
<tr>
<td>★ Please <strong>add any talking points to the speaker notes</strong> section of your slide.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Structured Student Talk Activity</th>
<th>Give One, Get One</th>
</tr>
</thead>
</table>

## Post Teacher Swap Meeting:

<table>
<thead>
<tr>
<th>Welcome</th>
<th>Please sign-in</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Grounding</th>
<th><strong>Group Groan</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Groups list what are the best and worst things that can happen in this session.</td>
<td></td>
</tr>
<tr>
<td>○ Hear a few and record them on a flip chart.</td>
<td></td>
</tr>
<tr>
<td>○ Make an agreement that should any of the worst things occur, all will participate in a group groan.</td>
<td></td>
</tr>
<tr>
<td>○ Practice the groan once.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher Swap Reflection</th>
<th>1. Reflection Round Robin</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Use one post-it to answer each question:</td>
<td></td>
</tr>
<tr>
<td>i. Remember: What did I accomplish?</td>
<td></td>
</tr>
<tr>
<td>ii. Understand: What is important about what I did?</td>
<td></td>
</tr>
<tr>
<td>iii. Apply: Where could I use this again?</td>
<td></td>
</tr>
<tr>
<td>iv. Analyze: Are there patterns in what I did? In my behavior?</td>
<td></td>
</tr>
<tr>
<td>v. Evaluate: How well did I do? What could I do differently?</td>
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<td>----------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------</td>
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<tr>
<td>vi.</td>
<td>Extend: What have I discovered about myself as a learner?</td>
</tr>
<tr>
<td></td>
<td>b. Place the post-it on the correct poster around the room</td>
</tr>
<tr>
<td></td>
<td>c. As you rotate through the posters, use a marker to respond to others reflections.</td>
</tr>
<tr>
<td></td>
<td>d. Groups will then be assigned to summarize and share the findings from a particular reflection poster.</td>
</tr>
<tr>
<td>Raffle</td>
<td>Attendees received a raffle ticket for each Teacher Swap Meeting they attended. At the end of the last meeting two $50.00 Visa Cards are raffled.</td>
</tr>
</tbody>
</table>