

A Blended Approach to Teacher Professional Development

by

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ABSTRACT

Professional development (PD) for public school teachers evolved as a result of the COVID-19 pandemic. As California schools shut down for in-person learning, several online PD opportunities were provided out of necessity as districts explored new ways to support teachers. The purpose of the Blended Professional Development (BPD) action research study was to explore a structure for online PD that combined live, self-paced, and collaborative learning activities for K-8 public school teachers. Teachers participated in a live webinar with an instructor, followed by an online self-paced module with control over sub-topic, pace, and when they participated. These two experiences were followed by two collaboration sessions. The BPD design offered choice, flexibility, and a variety of opportunities to engage with content. The literature review included related studies on teacher PD and blended learning, in addition to self-efficacy, socio-culture, and social capital theories. This study was a mixed-method action research study using surveys and interviews. Twenty-six participants took a survey that included both qualitative and quantitative items about their experience in the BPD innovation. Surveys were followed by semi-structured interviews in which twelve participants described their experience in each component of the experience. Qualitative data were coded and analyzed, and quantitative data were used to triangulate findings. The results of this study indicated that collaboration, choice, flexibility, and trainer quality were important considerations in PD for participants. Implications for future research and changes to practice were explored.

DEDICATION

It is with genuine gratitude that I dedicate this work to my village.

To my husband Peter, for encouraging and supporting me through all my crazy endeavors personally and professionally.

To my five darling babies, thank you for giving me purpose.

To my mom and dad, who instilled in me the work ethic, passion, and social awareness that led me to my career.

To all the friends and family who are part of my kids' lives, thank you for picking up the slack over the past three years so I could do this.

And to all my fellow working moms, trying to achieve your professional goals while still being there for every softball game. This dissertation is proof it can be done.

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CHAPTER 1

CONTEXT OF THE STUDY

The COVID-19 pandemic necessitated months of online teaching and learning for California's K–12 schools, resulting in drastic shifts in how technology was used by teachers beginning in March 2020. For months, classroom instruction took place synchronously online through videoconferencing platforms such as Zoom and Google Meet. Professional development (PD) for teachers occurred the same way. Teachers attended webinars and watched instructional videos in place of attending in-person PD sessions. This requisite change may have opened new avenues to improving teacher PD, which historically has not met teachers' needs (Bill & Melinda Gates Foundation, 2014; The New Teacher Project, 2015).

The federal government appropriated \$211,525,000 to the state of California for the 2020–2021 school year to provide professional growth opportunities to teachers under the annual Title IIA federal categorical program (California Department of Education, 2020). However, teachers have openly and consistently reported dissatisfaction with PD, citing challenges such as lack of time and follow-through and being overwhelmed by too many new initiatives (Bill & Melinda Gates Foundation, 2014; The New Teacher Project, 2015). This action research study examined a blended learning approach to teacher PD as a way to improve teachers' self-efficacy for new instructional practices. Blended learning in this context involves teachers engaging in some aspects of PD online with control of time, place, and/or pace, and some aspects synchronously in a supervised setting (Tucker et al., 2017). The study took place during the spring of the second school year affected by COVID-19.

State and National Context

I conducted this study in a public school district in California, which is under the direction of both the California Department of Education (CDE) and the U.S. Department of Education. Funding for the district is tied to compliance with a number of policies and accountability measures. Public school districts in the United States are provided funding, such as Title IIA dollars, under the Every Student Succeeds Act (ESSA) of 2015. ESSA reauthorized the Elementary and Secondary Education Act (ESEA) of 1965. The U.S. Department of Education funds are allocated to districts in addition to money received through state allocations, such as California's Local Control Funding Formula. Both programs give additional funds to districts with high numbers of students categorized as English Learners or socioeconomically disadvantaged.

The U.S. Department of Education (ED) publishes recommendations to assist local districts in implementing ESSA and spending Title IIA funds. The guidelines provide a rich, inclusive definition of effective PD: "Professional development activities are sustained (not stand-alone, 1-day, or short-term workshops), intensive, collaborative, job-embedded, data-driven, and classroom-focused" (U.S. Department of Education, 2016, p. 11). ED acknowledges that, as a nation, we have not done enough to support teachers in preparing students from low-income families and minority students for college and career (U.S. Department of Education, 2016). ED recommends innovative and evidence-based PD programs; however, it gives local districts autonomy to write a plan that fits local needs.

PD is an expected part of any teacher's job because standards, curriculum, best practices, and students constantly change. In a study of teachers in the United States

(Rotermund et al., 2017), 99% reported participation in at least one PD activity each school year. Aside from content-specific PD, other common topics included technology, reading instruction, student discipline, classroom management, teaching students with disabilities, and strategies for teaching English Learners (Rotermund et al., 2017). When educators refer to PD, they are typically referring to an in-service session where teachers come together and receive instruction on a topic. PD may also include activities such as collaboration, coaching, peer observations, and other new and innovative approaches (Darling-Hammond et al., 2017; International Literacy Association, 2019; U.S. Department of Education, 2016).

Research, student data, and teacher feedback have indicated that teachers are not satisfied with their PD offerings (Allen & Green, 2015; Bill & Melinda Gates Foundation, 2014; California Department of Education, 2014; Darling-Hammond et al., 2017). In 2014, the Bill & Melinda Gates Foundation published a study on the PD experiences of public school teachers and administrators in the United States indicating that only 29% of teachers were highly satisfied with PD offerings. Allen and Green (2015) compared PD opportunities in low- and high-performing schools. PD in low-performing schools was less aligned with the National Standards Development Council's 12 standards for creating high-quality professional development; teachers in high-performing schools engaged in a variety of PD activities such as collaboration and attributed their success with students to those opportunities (Allen & Green, 2015).

In a study that asked teachers to describe PD in metaphors, several teachers characterized it as a negative or challenging task with phrases such as “bottomless pit” or “bumpy road” (Yurtseven, 2017, p. 126). Studies have shown that teachers want PD that

is more engaging, collaborative, and supportive than a simple, standalone in-service session (Allen & Green, 2015; Gonzalez & Martin, 2017; Wycoff et al., 2003). It is evident and urgent that educational leaders improve the design of PD experiences for teachers.

What researchers and practitioners have called “best practices” in teacher PD include collaboration, choice, follow-up support, and clear expectations from school and district leaders (Darling-Hammond et al., 2017; International Literacy Association, 2019). Nevertheless, recommendations have not always transferred to practice in public school districts (Allen & Green, 2015; Bill & Melinda Gates Foundation, 2014; California Department of Education, 2014; Darling-Hammond et al., 2017; International Literacy Association, 2019). School leaders encounter implementation barriers when trying to enact these best practices. Some barriers include a lack of contractual time allotted for PD, stressors in urban schools, inadequate funding, too many competing agendas, and limited capacity of coaches and school administrators (Darling-Hammond et al., 2017). Additionally, few districts have systems for assessing and evaluating the impact of PD (Darling-Hammond et al., 2017).

Educational leaders providing PD for teachers have an opportunity to evolve and capitalize on the historic context in which we currently exist. Statewide remote learning during the COVID-19 pandemic opened the door to new blended learning practices for students that will likely persist post-pandemic. Applying blended learning practices to teacher PD may help PD have a greater impact on teachers’ instructional practices.

Local Context

This study was situated in a public school district with 13 elementary schools and three middle schools in Southern California, approximately 1 year after the onset of the pandemic. At the time of the study, the Cedarwood School District (a pseudonym) employed approximately 450 teachers with multiple-subject, single-subject, and special education credentials. The district was funded primarily through California's Local Control Funding Formula (LCFF) and supplemented by federal funds under oversight from the county Department of Education and the California Department of Education (2021). As the executive director of teaching and learning for the district, my responsibilities encompassed the planning and execution of all PD activities and curriculum adoption in the district. I designed and implemented PD for teachers with stakeholder input and aligned with the district's goals and identified needs. I hired consultants to deliver PD sessions, and sometimes teacher leaders also took this role and provided PD to their colleagues. The district offered required and optional PD opportunities year-round.

In the year of the study, the district served more than 9,000 students from preschool to eighth grade, and more than 70% of students were from low-income families and/or learning English as a second language. The district served a high percentage of Hispanic and Vietnamese students, including many immigrants or children of immigrants. Most of the district's students live in poverty; consequently, the district receives funds aimed at serving specific underrepresented student groups. The academic achievement of both Hispanic students and students from low-income families was below

the achievement of other student groups, an achievement gap that presumably grew wider throughout the pandemic (California Department of Education School Dashboard, 2017).

The district commonly uses student achievement data to make decisions about which initiatives and instructional practices to teach in PD sessions. The California Department of Education's School Dashboard (2017), the reporting system for state testing, reports progress for districts and schools. On the 2019 statewide language arts assessment for students in grades 3 through 8, the School Dashboard showed that Hispanic students in the district scored 32.4 points below standard, while White students scored 28.7 points above standard. Throughout the years leading up to this study, student groups such as socioeconomically disadvantaged, foster youth, and Hispanic students scored below their Asian and White counterparts on state and local academic achievement measures.

The present study was the result of an identified need to improve teachers' attitudes about PD. In 2018, teachers anecdotally expressed to me and other administrators a sincere desire to make a positive impact on students but a dislike of the PD being offered by the district. Seventy teachers (17%) were absent from work on the district-wide PD day in 2018, which suggested a lack of perceived value in participating in the PD. Teachers also reported feeling overwhelmed with constant change, including community demographics, state and national policies, district expectations, new instructional materials, and academic standards. Teachers, unlike many other professionals, often do not have sufficient time for the PD needed to keep up with the constant change. All of these stressors could have been contributing to their negative perceptions of PD.

Starting in the 2019–2020 school year, the district added an additional paid PD day and a summer PD institute for teachers. This increased PD for teachers came with an obligation to make the learning meaningful, engaging, relevant, and transferable to classroom practice. Several sessions occurred during summer 2019, but the PD plans for the 2019–2020 school year were disrupted when schools in California shut down on March 13, 2020, due to the COVID-19 pandemic. The school closures affected instruction for students and teacher PD in several ways.

In response to the restriction of in-person events, a district-wide PD day scheduled for April 20 was converted to an online PD day, with more than 30 webinar options for teachers. Following this PD day, the district continued to offer webinar sessions from May to December 2020 to meet teachers' ongoing needs as they implemented emergency remote and hybrid learning models for students. Most Cedarwood School District teachers attended at least 20 live or prerecorded webinars from March to December 2020, some mandatory and others optional. Many teachers suggested online PD continue post-pandemic, which created an opportunity to find a blended learning model to meet their needs.

Drastic shifts also occurred in how teachers delivered content to students, starting in March 2020. Out of necessity, teachers made decisions about what students could learn on their own with technology and what needed to be prioritized for the limited synchronous time through video conferencing software such as Zoom. After being fully online for months, schools in Cedarwood School District partially reopened in October 2020 in a hybrid model, in which students attended school half the time with half their peers. Teachers had only 50% of the seat time to provide direct instruction and

collaboration opportunities, and students learned the rest of the time through independent online activities. Teachers continued to analyze instructional materials, activities, and standards to make the most of their limited face time with students and to create meaningful online independent learning opportunities. Components of the learning were completed asynchronously, a blended learning strategy that was later applied to teacher PD in this study to make more efficient use of limited in-seat PD time.

Problem of Practice

Traditional methods of teacher PD have not met most teachers' needs in Cedarwood School District and across the United States (Darling-Hammond et al., 2017; The New Teacher Project, 2015). Time for PD is limited and typically spent in direct instruction without time to collaborate with colleagues and reach mastery, even though teachers highly value collaboration as a means to improve instruction (Corpriady et al., 2018; Gonzalez & Martin, 2017; Graham, 2007). PD time must be used more efficiently and impactfully to make a difference. This study's innovation applied a blended learning design to teacher PD to address this problem of practice.

Innovation

The purpose of this action research project was to increase teachers' application of new instructional strategies by providing a more complete, collaborative, and supportive online PD experience. The innovation, BPD, provided a structure for PD that combined synchronous, self-paced, and collaborative learning activities (a complete description follows in Chapter 3). Teachers participated in one of four live webinars with an instructor, followed by an online self-paced module with control over subtopic, pace, and when they participated. The webinar and self-paced courses were followed by two

face-to-face collaboration sessions with colleagues. Teachers also accessed a “playlist” of other complementary activities to support their learning.

Research Questions

The study was guided by the following research questions:

1. How do teachers perceive their self-efficacy to implement new instructional practices in their classrooms after participating in Blended Professional Development?
2. Which aspects of the Blended Professional Development model most influenced teachers’ learning and why?
3. What are teachers’ perceptions of Blended Professional Development as it compares with a traditional professional development model?

In what follows, I will provide theories and research to frame the study and its innovation.

CHAPTER 2

THEORETICAL FRAMEWORKS AND RELATED LITERATURE

This study's innovation, Blended Professional Development (BPD), used blended learning to restructure how professional development (PD) time was spent. This chapter describes three primary theoretical perspectives used to guide this study, followed by literature to support the BPD innovation design and findings from previous cycles of action research. With respect to this study, the first consideration was that self-efficacy, or how a teacher feels about his/her abilities, affects the teacher's ability to implement new instructional practices. A second consideration was that teachers learn through powerful interactions with each other, an idea supported by sociocultural theory (Schallert & Martin, 2003; Vygotsky & Cole, 1978). Lastly, social capital theory guided this study. Social capital theory provides a framework for how teachers can improve instruction through shared responsibility for student learning and feeling accountable to their peers in a safe, collaborative environment (Fullan & Hargreaves, 2013). These three theories formed the foundation of this study as it considered how BPD influenced teachers' perceptions of PD and their own abilities to implement new practices.

Self-Efficacy Theory

When a learner is taught a new skill, their own belief in their capacity to do what was taught is called *self-efficacy*. Self-efficacy, or self-belief, varies across activities and contexts and is not static (Bandura, 2011). Bandura's (2011) theory asserts that a person's self-efficacy will significantly influence their motivation to take action, ability to persevere through challenges, outcome expectations, and level of optimism. Self-efficacy for a certain context is developed through mastery experiences, social modeling, social

persuasion, and reduced anxiety (Bandura, 2011). In order for PD to lead to improved instructional practices, teachers must have self-efficacy at the conclusion of the learning experience.

Self-efficacy has been widely studied for its effects on teachers. For example, Holzberger et al.'s (2013) study of 155 math teachers confirmed the relationship between self-efficacy and instructional quality, showing that teachers with higher self-efficacy also had higher instructional quality. The study also concluded that teachers' positive experiences in the classroom increased self-efficacy and that implementing new instructional practices with success had a lasting effect 1 year later. Additionally, the study confirmed Bandura's (2011) theory that teachers develop self-efficacy through mastery experiences in the classroom.

Teachers' self-efficacy has also been studied for its relationship to factors such as student motivation and teacher job satisfaction. Zee and Koomen (2016) synthesized available research on teacher self-efficacy and found that self-efficacy had consistently positive effects on teachers' commitment, psychological well-being, classroom quality, and academic achievement. As it relates to my study, Zee and Koomen (2016) found that higher self-efficacy correlated to an increased willingness to try new instructional practices. Efficacious teachers are more likely to collaborate with other teachers to improve practice.

Sociocultural Theory

A second theory driving this study is sociocultural theory. Many currently popular collaborative learning strategies used in classrooms are rooted in sociocultural theory, which views learning as a social process. This theoretical perspective, applied to adult

learners, can provide insight into the importance of teacher collaboration as a professional learning activity. Vygotsky claimed that new learning of higher-level processes happens in social interactions, and negotiating meaning through dialogue in social settings helps learners grow (Schallert & Martin, 2003; Vygotsky et al., 2012).

A key component of sociocultural theory is the idea of the zone of proximal development (ZPD), which refers to the difference between the learner's individual independent level and the potential level that he/she could reach if supported (Swain et al., 2015; Vygotsky & Cole, 1978). Support and interaction can come in the form of another person within a learner's community of practice (Swain et al., 2015). Teachers can learn from other teachers who may be more skilled in certain areas through collaborative discussion and questioning. According to Vygotsky, language mediates the process of thinking, and when we use language with each other, it can help us internalize new ideas and achieve a deeper level of learning (Swain et al., 2015; Vygotsky et al., 2012).

Corpriady et al. (2018) conducted a study involving teacher collaboration. The study demonstrated how collaboration in the ZPD after PD improved novice chemistry teachers' confidence in teaching the content. Collaboration had the most positive effects on the teachers with less experience, who benefited from collaborating with more experienced peers (Corpriady et al., 2018). Teachers with less than 10 years of experience were able to address instructional problems and enhance their own knowledge through collaboration and asking questions of more experienced colleagues. Knowledge of both pedagogy and content increased with the additional collaboration time. These authors

concluded that “collaboration is a significant medium for mastering the subject” (Corpriady et al., 2018, p. 757).

In a study of PD for math teachers, collaboration was found to be a highly impactful way to improve practice (Gonzalez & Martin, 2017). Teachers reported that having time to discuss instruction with teaching peers strengthened their own ability to teach. Interestingly, the teachers also viewed the collaboration as a form of accountability that propelled them to improve their practice. Because they were required to participate and peers depended on them, they were challenged to implement new instructional strategies they might not have tried before (Gonzalez & Martin, 2017). Overall, teachers viewed peer collaboration as a way to strengthen their knowledge, which validates sociocultural learning theory.

In another study, middle school teachers in a public school district fully implemented a professional learning community (PLC) model. In this study, the PLC model was defined as teams of teachers meeting regularly to discuss student data, curriculum, and instruction (Graham, 2007). Results demonstrated that teachers perceived learning from each other to be a more powerful learning experience than traditional PD (Graham, 2007). Teachers reported professional improvement as a result of the collaboration time with colleagues, and many attributed the success to having a dedicated 90-minute block for collaboration within the work day (Graham, 2007).

Social Capital Theory

A third theoretical framework that guided this study is social capital theory. Social capital is the potential resources that exist within a relationship that positively affect performance (Leana & Pil, 2006). The structural, relational, and cognitive aspects

of social capital all have implications in PD (Leana & Pil, 2006). First, the structural aspects consider how often the group is together and who is included. This is a key factor in how much knowledge is acquired through the situated learning that happens when groups collaborate (Leana & Pil, 2006). Simply stated, if time is provided for teachers to collaborate with the right colleagues, it will result in positive learning outcomes. Second, the relational aspects refer to the level of trust, the history of the relationship, and the collaborative behaviors (Leana & Pil, 2006). Teaching teams that have developed trusting relationships will learn from each other at higher rates. Lastly, the cognitive aspects of social capital consider the development of shared responsibility and collective action through collaboration around shared goals (Leana & Pil, 2006). In a teaching team with strong social capital, the structural, relational, and cognitive dimensions work together to create a dynamic where members learn from each other and raise performance (Leana & Pil, 2006).

Fullan (2014) proposed that the “absence of social capital helps explain why professional development often does not have much effect” (p. 78). Groups that learn together, with a professional trust, will see accelerated growth (Fullan et al., 2015). Growth happens in a culture where teachers engage with each other about teaching and learning and hold each other to high standards through the process (Fullan et al., 2015). This approach can be cultivated only in a system that prioritizes teacher collaboration to strengthen their social capital.

Examples from other countries illustrate how social capital can lead to improved student outcomes when the structures and systems allow for it. Both Finland and Singapore have seen significant school improvement as a result of increased social capital

(Fullan & Hargreaves, 2013). In Finland, time is built into the work day for teachers to collaborate to create curriculum together at the school level (Fullan & Hargreaves, 2013). In Singapore, teachers are expected to innovate and share ideas with each other, which is the opposite of the U.S. system, where schools compete with each other (Fullan & Hargreaves, 2013). According to Fullan (2014), “social capital increases an individual’s knowledge because it gives him or her access to other people’s human capital” (p. 78).

This approach is supported by Linda Darling-Hammond’s ideas about improving educational systems. In “Teaching and the Change Wars: The Professionalism Hypothesis,” Darling-Hammond (2009) described the importance of using a professional approach with teachers to improve practices. With a focus on treating teachers as professionals, which involves strong systems for PD and ongoing support, this approach centers on the teacher having time to collaborate and make instructional decisions (Darling-Hammond, 2009). Giving teachers time to collaborate and make instructional decisions will pay off in the professionalism that it develops.

Strengthening teachers’ social capital has been shown to improve results for students, even when a teacher’s human capital is low (Leana & Pil, 2014). This means that even when an individual teacher has less knowledge or skill, collaborating with other teachers can improve results for that individual teacher’s students. In a study of 1,000 fourth- and fifth-grade teachers, Leana and Pil (2014) found that social capital was a bigger predictor of student success than years of experience, certifications, and PD experience. They also found that teachers sought advice from other teachers more often than they did administrators or instructional support staff. In a historically individualistic

profession such as teaching, it is important to shift value from human capital to the social capital of teacher teams.

Literature Guiding the Innovation

The BPD innovation implemented in this study consisted of several learning activities: a synchronous PD session, a self-paced module, a playlist of resources, and collaboration sessions. The BPD innovation design was influenced by self-efficacy theory, sociocultural theory, and social capital theory, as discussed above, and further guided by the literature on teacher PD and blended learning.

Professional Development

A significant amount of research has been dedicated to studying and making recommendations about PD for teachers. Well-designed PD can lead to better teaching and learning; however, many practices in school districts have not produced these outcomes (Darling-Hammond et al., 2017). School districts must shift away from one-day “drive-by” sessions and toward extensive PD that is active, collaborative, relevant, and ongoing (Darling-Hammond et al., 2017). “Active” refers to a shift away from a lecture-style environment to the incorporation of engagement strategies, collaboration, and reflection. Giving teachers a chance to learn with the same interaction strategies they are encouraged to use with students has become a popular strategy in PD sessions (Darling-Hammond et al., 2017). According to the California Department of Education (2014), “For teachers and school leaders to create classroom instruction that is motivating, engaging, integrated, respectful, and intellectually challenging for students, they too should participate in a learning culture that has these same qualities” (p. 970). The

Department also cited research recommendations that teachers need more than 50 hours of professional learning on one topic to see increases in student achievement.

Other recommendations include making PD collaborative and content specific, incorporating active learning, and providing follow-up support (International Literacy Association, 2019). The International Literacy Association recommended a balanced PD plan that incorporates professional learning communities, coaching, and collaborative cycles of inquiry. It also recommends ongoing and rigorous training in the most updated literacy instructional practices (International Literacy Association, 2019).

Collaboration should be considered an essential PD activity (Allen & Green, 2015; Graham, 2007; Yurtseven, 2017). A study conducted in a small rural school district in Georgia demonstrated the power of teacher collaboration to improve instructional practices (Chance et al., 2018). The researchers piloted and studied a systemwide professional learning initiative with the goal of increasing time given to teachers for collaboration in PLCs. The pilot was a response to Georgia's new requirements for teacher recertification, which moved away from requiring in-seat PD hours to individualized professional growth plans that could be met through the implementation of PLCs (Chance et al., 2018). Chance et al. (2018) cited several benefits to creating a system that values PLC time. Traditionally, school schedules lack time available for teachers to collaborate. In their study, two of three PD days were dedicated to teacher collaboration in PLCs. The PLC time led to increased teacher leadership, a positive culture, improved classroom practice, and collaboration between teachers. After the pilot, the teachers helped revise and formalize a "Purposeful Professional Learning Plan," which is now a formal plan that other districts can adopt (Chance et al., 2018).

Blended Learning

Blended learning is an educational structure in which students learn part time online and part time in person in a classroom setting (Acree et al., 2017; Tucker et al., 2017). There are several ways to implement a blended learning experience, but they all meet the basic criterion of providing a hybrid of technology-based learning experiences and in-person learning experiences. Some examples of these variations include whole group rotations, playlist models, enriched virtual models, and rotation models, which include variations such as station rotations and flipped classrooms (Acree et al., 2017; Tucker et al., 2017).

One of the many benefits of blended learning is the ability for learners to work at their own pace and for the learning to be personalized based on each student's needs and interests (Graham et al., 2019; Tucker et al., 2017). Blended learning can also increase access and flexibility by extending learning experiences beyond the classroom or, in the case of this study, beyond the confines of the work day for teachers. Playlists are an example of a strategy used in blended learning to provide personalization and flexibility (Graham et al., 2019). Learning playlists, choice boards, and menu boards contain activities for learners that can provide choices of learning activities that support a given learning objective (Graham et al., 2019).

An effective blended learning strategy should provide choice and personalization while also providing structure that enables learners to collaborate around common content (Graham et al., 2019). The flexibility exists in the learning activities and not necessarily in the goals or standards learners must meet. Playlists or choice boards may be organized intentionally to set learners on a particular learning path, providing both

choice and intentional differentiation (Graham et al., 2019). Learners might choose their collaboration group by interest or be placed in a group by the teacher. Teachers can provide flexibility and choice in any part of the learning, using any blended learning model or combination of models.

In a *flipped* classroom model of blended learning, the transfer of new information occurs online rather than in a lecture or presentation in a classroom, freeing up in-person classroom time for creative practice and application (Tucker et al., 2017). Learners have the opportunity to pace their learning, which could mean rewinding or rewatching a video, taking breaks to process new information, looking up related information or unfamiliar terms, or reflecting individually (Tucker et al., 2017). Learners arrive at the in-person session with the knowledge gained through the independent online learning and ready to collaborate and apply, with the support of others and the instructor (Tucker et al., 2017). With regard to K–12 students, flipping the classroom is usually done through online texts and/or video resources such as TED-Ed, Khan Academy, or PBS LearningMedia (Tucker et al., 2017). If online resources to meet the instructor’s objectives do not exist, the instructor can also use technology to create and record video lectures, screencasts, and other resources for students.

With regard to using a flipped model for teacher PD, the COVID-19 pandemic resulted in a plethora of online resources for teacher PD. Companies that previously provided in-person PD shifted quickly to provide webinars, videos, and other virtual structures for teaching teachers. Regulations banning in-person gatherings resulted in teachers gaining familiarity with these new ways to learn as they navigated a completely new way to teach.

Although not common before the pandemic (Surrette & Johnson, 2015; Wycoff et al., 2003), there have been some examples of blended learning use in teacher PD. A study conducted in Texas changed the traditional 6-hour in-service model to a blended model that included a book study, video study, and personal growth plan (Wycoff et al., 2003). This new design was based on the idea that teachers found it inappropriate to instruct students with a “one-size-fits-all” approach, and therefore PD directors should not be approaching teacher PD this way (Wycoff et al., 2003). Their outcomes were encouraging. Teachers spent more than the required time completing learning activities and engaging with materials, teachers felt trusted, and every teacher who participated reported a change in classroom practice as a result of the experience (Wycoff et al., 2003).

Blended learning practices were also applied to a group of school administrators in another study in order to model for them how blended learning works in classrooms (Acree et al., 2017). School principals went through five sessions that followed a blended learning format, including online tasks, face-to-face activities, online follow-up work, and job-embedded activities. The Leadership in Blended Learning program was highly successful in transforming participants’ practices, and the findings indicated a promising potential for the use of blended learning in PD (Acree et al., 2017).

The current study’s innovation used blended learning practices to capitalize on teachers’ newfound comfort with online learning and the need to intentionally integrate more collaboration time. Prior to the study—from March to October 2020—teachers in the district participated virtually in a minimum of 20 hours of online PD, and many teachers also completed ancillary webinars and virtual opportunities over the summer in

addition to the required sessions. However, these were primarily “one and done” direct instruction webinars that did not include collaboration. The current study’s BPD innovation included best practices in blended learning to create a better model of online PD than what teachers experienced during the initial months of the pandemic.

Previous Cycle of Action Research

Before this study, I conducted a reconnaissance cycle of research consisting of semi-structured interviews (Brinkmann & Kvale, 2015). I conducted the interviews at one school site within the Cedarwood School District with the goal of understanding teachers’ feelings regarding PD and what makes it effective or ineffective in changing their instructional practices. I selected teachers by convenience sampling to participate in this cycle of interviews. The interviews used a set of introductory and follow-up questions to gather perceptions about PD and improving instructional practices (Brinkmann & Kvale, 2015). Interview questions asked about participants’ experiences in PD, both positive and negative.

The interviews also sought to identify barriers that hinder the application of new learning to PD and to understand what characteristics, support, and accountability structures enable a teacher to apply new instructional practices. I identified three key themes from the interviews:

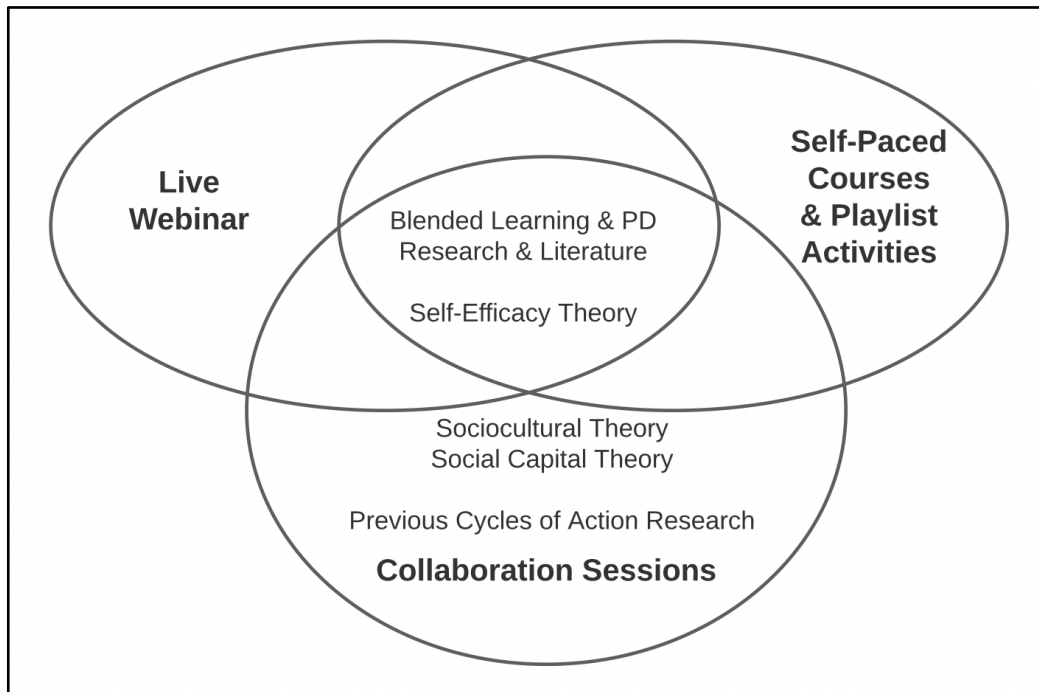
1. Teachers need time and a deep understanding of new learning before being expected to implement it.
2. Collaborating with others aids the implementation of new learning.
3. Teachers need to feel like they can immediately implement something and receive support when doing so.

The results of the interviews validated existing ideas within the problem of practice and proposed innovation. All teachers interviewed expressed a willingness to improve and change and frustration over a lack of implementation support and applicable learning. The need for first steps with new initiatives was also a common theme, as teachers expressed that they often leave PD sessions without enough knowledge or time to process the amount of material. One teacher said, “Do I truly have an understanding of what I’m supposed to do?” This suggests that collaborative planning time is beneficial after instruction.

The findings from the initial cycle, along with the theories and studies cited in this chapter, influenced the design of the study and its innovation. Figure 1 illustrates each component of the BPD innovation and its guiding theories and research.

Figure 1

Guiding Theories and Research Informing Each Component of BPD



CHAPTER 3

METHODS

I studied the Blended Professional Development (BPD) innovation using an action research process. Action research in this educational setting involved a dynamic process that tested new ideas, encouraged collaboration, and led to the application of new learning (Creswell & Guetterman, 2019). Through research and reflection, this study aimed to improve professional development (PD) for teachers in Cedarwood School District. This study included the implementation of an innovation, surveys, and interviews.

Setting

This study took place in Cedarwood School District, a PK–8 public school district in Southern California. The district includes 13 elementary schools and three middle schools, employing approximately 450 teachers. All teachers meet California credentialing requirements for the multiple-subject and single-subject classrooms in which they teach. Of the district’s 9,036 students, 44.8% are Hispanic and 37.1% are Asian (2019–2020 data; California Department of Education School Dashboard, 2017). Most of the district’s students meet the criteria to be considered socioeconomically disadvantaged, and a majority of the students classified as English Learners are from homes where Spanish or Vietnamese is the primary language (see Table 1 for additional demographic information).

Table 1

District Student Demographics (n = 9036)

Student group	Percentage of students
English Learners	39.8%
Socioeconomically disadvantaged	72.8%
Homeless	6.7%
Students with disabilities	10.6%

Note. Students may be counted in more than one group. Information is from the 2019–2020 school year as reported on the California Department of Education School Dashboard (2017).

Innovation

The BPD innovation that I designed for the study applied best practices in blended learning to improve PD for teachers (Acree et al., 2017; Graham et al., 2019; Moore et al., 2017; Tucker et al., 2017). The BPD innovation provided teachers with access to a variety of learning activities that included the following required components:

1. attendance at a synchronous webinar (choice of four subtopics),
2. participation in an online self-paced course, and
3. participation in two synchronous (i.e., via Zoom) collaboration sessions.

Additionally, the BPD innovation included an optional online “playlist” where teachers could interact with content including social media pages, blogs, a gallery of student examples, other self-paced courses, and print materials. The playlist was available to teachers who wanted to see or share classroom examples or engage in learning opportunities that supplemented the required activities. In the BPD model, teachers initially learned content through a webinar and self-paced course before coming together for collaboration and application, a blended learning design called a *flipped classroom* (Graham et al., 2019; Tucker et al., 2017). They had synchronous and asynchronous opportunities to learn and practice (see Figure 2). Because blended learning is typically a hybrid of online and in-person activities, the initial BPD design included in-person collaboration sessions. However, due to pandemic restrictions in 2021, I had to revise the plan, and the collaboration sessions were conducted via Zoom.

Figure 2

Blended Professional Development (BPD) Components

	Learner-Human Interaction	Learner-Content Interaction
Tech-Mediated	Live webinar Collaboration session with colleagues using Zoom	Online self-paced course(s) Social media & blogs Gallery (online lesson/idea sharing)
Non-Tech Mediated	<i>N/A due to pandemic restrictions</i>	Print materials Practicing new instructional strategies in the classroom

Note. Matrix identifying categories of interaction. Adapted from *K-12 Blended Teaching Readiness: Phase 1- Instrument Development*, by C. R. Graham, J. Borup, E. Pulham, and R. Larsen, 2017, Michigan Virtual Learning Research Institute, p. 5.
<https://michiganvirtual.org/wp-content/uploads/2017/11/k12-blended-teaching-readiness-phase-1-instrument-development.pdf>

In traditional PD models, time for PD is allotted to certain days and times and is insufficient for teachers to master new strategies and improve instructional practices (Darling-Hammond et al., 2017; Martin et al., 2018; Oddone et al., 2019). In the BPD model, a blended approach to PD allowed for some of the learning activities to take place with flexibility in schedule and pace. The BPD model included four experiences on one of four chosen subtopics (see Figure 3). Each teacher began with a scheduled initial webinar, facilitated by a learning coach who was extensively trained in the content. Teachers then engaged with self-paced courses at times that were convenient for them.

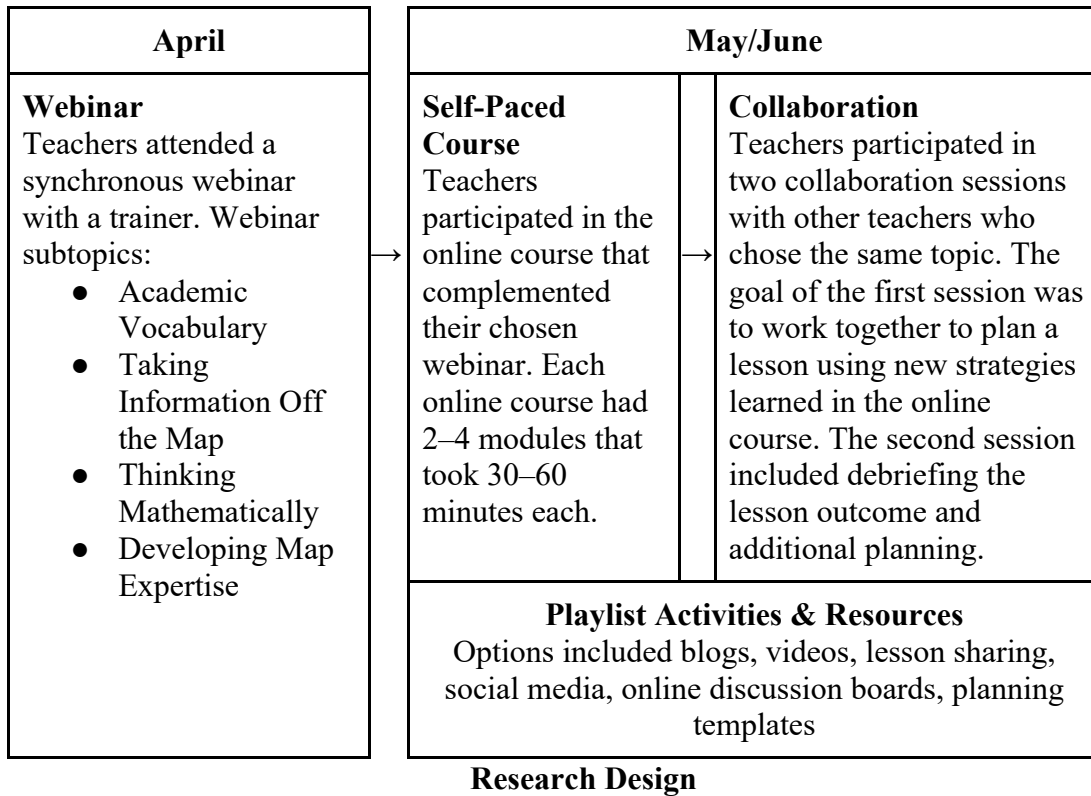
Finally, they participated in structured planning during collaboration sessions with the learning coach and peers engaged in the same learning topic. The learning coach was available to answer questions or guide the group, as needed.

I offered the BPD innovation to teachers following the normal district protocols and procedures. First, all teachers in the district ($n = 450$) from pre-kindergarten through eighth grade were invited to participate in early April 2021 via email and a Google form sign-up. I informed teachers that participation in this PD was voluntary. However, as a standard practice and required by our collective bargaining agreement, teachers were notified that they would be paid a \$35/hour PD rate for all activities. Seventy-two teachers chose to participate in the BPD innovation by selecting and attending one of the four initial webinars. All 72 teachers attended the initial webinar, which was the first component, but only 45 of those teachers went on to complete all components of the module (webinar, self-paced course, two collaboration sessions). Teachers who did not complete all components cited challenges such as scheduling conflicts, end-of-school-year responsibilities, and illness. Only those teachers who completed all components were eligible participants in the study (I describe study recruitment below).

The content of the training centered around “Thinking Maps,” which are visual patterns used across the curriculum for students to organize content (Thinking Maps, 2021). Thinking Maps is a district initiative in Cedarwood. All teachers had received initial training on Thinking Maps prior to the commencement of this study. The BPD innovation provided the 72 participants with the opportunity to further develop their expertise in one of four webinar subtopics related to Thinking Maps (see Figure 3).

Figure 3

Blended Professional Development Timeline of Activities



Study Participants

I emailed the 45 teachers who completed all components of the BPD experience an invitation to participate in the study using convenience sampling, which means they were invited based on their willingness and ability to participate and not for specific demographic characteristics (Creswell & Guetterman, 2019). Twenty-six teachers chose to take the survey, and 12 teachers chose to participate in an interview. Survey participation was anonymous; therefore, I do not know if the teachers I interviewed also took the survey.

I intended to have a second interview recruitment by grade-level span to achieve maximal variation sampling, a sampling strategy to recruit participants who differ on a

particular characteristic (Creswell & Guetterman, 2019). I did not need to use this strategy because the initial participants who signed up for interviews were evenly spread across the grade levels. According to Creswell and Guetterman (2019), qualitative educational research interviews are commonly conducted with a small number of participants due to the time commitment it takes to conduct and analyze in-depth interviews; therefore, I was hoping for a minimum of nine participants and exceeded that number with 12.

I acquired the demographics of the study participants through the first few survey and interview questions, which asked for information such as current teaching position and years of experience (see Appendices B and C). In Cedarwood School District, there are approximately 450 teachers with a variety of credential types. Most general education teachers have more than 15 years of teaching experience within the district, and female teachers outnumber male teachers four to one. There are approximately 30–50 general education classroom teachers per grade level in each elementary grade. The study participants represent a small sample of the teachers in the district. Table 2 displays the participant demographics for gender, grade level taught, and years of experience.

Table 2

Participant Demographics

Method	Survey	Interview
	<i>n</i>	<i>n</i>
Number of participants	26	12
Gender		

Male	1	1
Female	25	11
Grade level		
PK–1	5	4
Grades 2–3	7	2
Grades 4–5	8	3
Grade 6–8	6	2
Years of experience		
0–5 years	1	1
6–10 years	2	1
11–15 years	1	0
16–20 years	9	5
21+ years	13	5

Note. Interview participants may have also completed an anonymous survey.

Study Timeline

This was a mixed-method action research (MMAR) study in which two primary methods were used to answer each research question: surveys and interviews. Using the MMAR approach provided a more complete view of the problem of practice and the outcomes of the innovation (Creswell & Guetterman, 2019). More specifically, this was an explanatory sequential mixed-method design in which surveys were followed by qualitative interviews (Creswell & Guetterman, 2019). The qualitative data elaborated on the survey results and gave more depth and explanation to fully answer the research questions (Creswell & Guetterman, 2019).

Table 3 includes a timeline of the data collection and analysis activities, which were conducted between April and October 2021. I collected data prior to the end of the 2020–2021 school year in June.

Table 3

Timeline for Data Collection and Analysis

Timeframe	Actions	Procedures
April 2021	Recruited teachers for the innovation	Invited teachers to sign up for the BPD innovation
April–May 2021	Implemented BPD innovation	Teachers completed the BPD innovation
May–June 2021	Collected survey data and recruited for interviews	Emailed teachers who completed the BPD innovation and invited them to complete the survey Began survey data analysis Recruited for interviews
June 2021	Conducted interviews	Interviewed teachers
July 2021	Transcribed	Transcribed interviews
August–October 2021	Coding and statistical analysis	Coded interview transcripts and qualitative survey item responses Continued survey data analysis Interpreted data

Role of the Researcher

As the executive director of teaching and learning in Cedarwood School District at the time of the study, I oversaw all PD for this study, as well as all other PD offerings in the district. This means that although I was not a participant in the sessions, I coordinated all the logistics including scheduling, paying participants, hiring trainers to

deliver the PD, and completing required paperwork. Throughout the year, as part of my job, I regularly conducted surveys and held discussions with participants about PD. Principals and teachers routinely communicated their opinions about PD to me in conversations and emails, and all teachers and administrators participated in an annual survey through Google Forms to provide input on PD needs. As part of my job, I also surveyed teachers via email after each PD session they attended. My job-embedded research activities presumably caused my role in this dissertation research study to seem commonplace to participating teachers.

Data Collection and Instruments

Survey

I created the survey using Qualtrics (www.qualtrics.com). Survey items assessed self-efficacy, rated the components of the BPD experience, and asked a variety of questions about the experience (see Table 4 and Appendix B for the full survey). I initially designed the study to include a presurvey, but due to the low number of participants who took both the presurvey and postsurvey, I elected to include only data extrapolated from the postsurvey in this study.

I included multiple-choice demographic questions to gather data on each teacher's experience level, work assignment, and gender (Creswell & Guetterman, 2019). Following the demographic questions, several survey items measured self-efficacy to answer Research Question 1: How do teachers perceive their self-efficacy to implement new instructional practices in their classrooms after participating in Blended Professional Development? These survey items were informed by and adapted from the Ohio State Teacher Efficacy Scale (OSTES), a measure of teacher efficacy developed as an

improvement from prior work on efficacy such as the Rand measure, Gusky’s Responsibility for Student Achievement (RSA), the Teacher Locus of Control (TLC), and the Webb Efficacy Scale (Tschannen-Moran & Hoy, 2001). The construct validity of the OSTES was demonstrated through positive correlations with other measures for self-efficacy (Tschannen-Moran & Hoy, 2001). The survey also included questions about the BPD experience and open-ended response opportunities (see Table 4 and Appendix B).

Table 4

Sample Survey Items

Question/prompt	Response type	Research question addressed
How many years have you been teaching?	Multiple choice: 0–5, 6–10, 11–15, 16–20, 21+	Demographic
I am confident in my ability to try new strategies in my classroom after attending professional development.	6-point Likert scale: Strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree	RQ1
Which component of the Blended Professional Development most prepared you to implement something new right away in your classroom?	Multiple Choice: <input type="checkbox"/> Webinar with instructor <input type="checkbox"/> Self-paced online videos <input type="checkbox"/> Collaboration session(s) <input type="checkbox"/> None of the components prepared me to implement something right away	RQ1, 2

Note. See Appendix B for the complete survey.

Interviews

Semi-structured research interviews took place after participants took the survey (Brinkmann & Kvale, 2015). I used the interviews to gather details about teachers’

reactions to the BPD innovation and the rationale for those reactions, including which aspects were perceived to be most and least effective and how the BPD model compared with their past experiences in PD. I conducted the interviews via Zoom video conference software at times convenient for each participant. Interviews took 20–30 minutes and were recorded using Zoom. I enabled the Zoom auto-transcription feature to capture a computer-generated transcript. I checked the computer-generated transcripts for accuracy against the audio recordings and corrected as needed.

The interviews included several types of questions, including introductory questions that were scripted and served as conversation starters, followed by clarifying, specifying, or probing questions, which depended upon the answers to the introductory questions (Brinkmann & Kvale, 2015). Sample questions are included here (see Appendix C for the full script):

1. In which part of your Blended Professional Development experience did you learn the most? Why?

Possible probing question: Can you give more specifics about why?

Possible specifying question: How did you behave during or after that experience?

2. How was this experience different from past professional development experiences?

Data Analysis

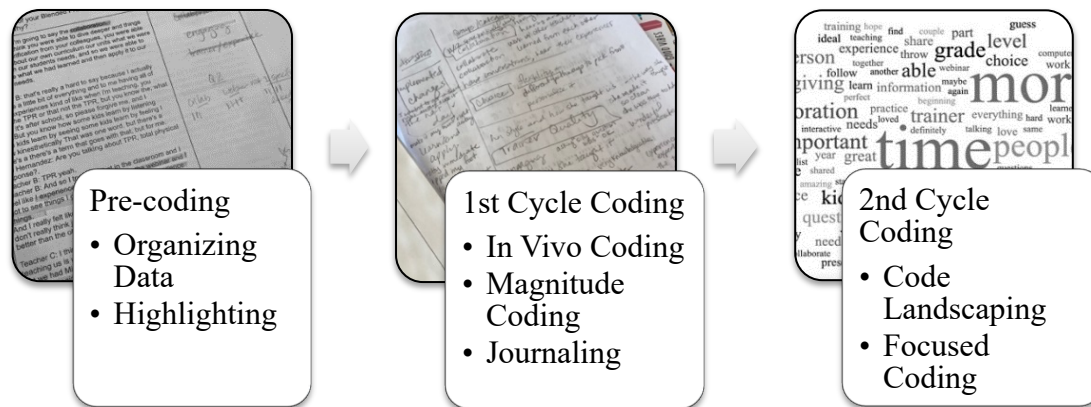
Qualitative Data

I analyzed two types of qualitative data: interview transcripts from 12 interviews and open-ended survey item responses from 26 participants. The survey included two

opportunities for written explanations of multiple-choice items and one open-ended question about how the BPD experience affected participants' ability to implement something new. I reorganized interview transcripts and qualitative survey items by question prior to coding.

I conducted inductive analysis to organize qualitative data from surveys and interviews into themes and categories so they could be described and interpreted (Brinkmann & Kvale, 2015; Mertler, 2017; Saldaña, 2021). Coding occurred in three stages influenced by Saldaña (2021)—each with multiple methods (see Figure 4).

Figure 4
Stages of Coding



Pre-coding and First Cycle Coding

During the pre-coding phase, I reviewed the data multiple times to identify emerging themes as they related to my research questions. After pre-coding, I transitioned to in vivo coding, where I highlighted actual phrases said by participants that connected to my research questions (Saldaña, 2021). Concurrently, I counted certain

types of phrases or responses, a process called magnitude coding (Saldaña, 2021). For example, 11 out of 12 interview participants made positive comments about collaboration. Throughout in vivo and magnitude coding, I wrote short journal entries in the margins of the transcripts and on scratch paper about thoughts and the trends emerging in the data (Saldaña, 2021).

Second Cycle Coding

During second cycle coding, I created a “word cloud” to represent the qualitative data. Word clouds are *code landscaping* activities that visually display the frequency of words in the data (Saldaña, 2021). In the word cloud, words with higher frequency appear larger (see Figure 5). I used a website to create the cloud (www.worditout.com).

I also used focused coding as a second cycle method. I grouped in vivo and magnitude codes into six categories, or codes: *collaboration*, *choice*, *trainer quality*, *ongoing*, *implemented something new*, *flexibility*. I created a top 10 list of the most representative phrases or sentences said by participants (Saldaña, 2021). Analyzing phrases that most represented the data helped me move toward forming key assertions to answer my research questions. Appendix D contains a table of codes used and the top 10 list of representative phrases.

Data Validity and Reliability

An important consideration in this study was the reliability, or trustworthiness, of the research findings and the validity, or correctness, of the data (Brinkmann & Kvale, 2015). Relating to quantitative methods, Mertler (2017) suggested that validity evidence is appropriate for large-scale research, and that a more important consideration for educational action research is validity based on instrument content. In this study, I ensured validity by directly aligning the survey questions to the research questions.

I established reliability in the survey instrument through internal consistency measures, such as examining participants' responses across the instrument for consistency and ensuring items were unambiguous. Following administration of the survey, I calculated Cronbach's alpha reliability coefficient (reported in Chapter 4) to ensure reliability (Ivankova, 2015). I also established reliability through standardized directions and administration procedures and through ensuring participants felt comfortable and that no items invited guessing (Creswell & Guetterman, 2019). I tested items and invited feedback from non-participants before administering the survey to participants to ensure items were clear.

I also considered reliability and validity in the qualitative methods of the study. Consistency in interviewing techniques is one way I ensured reliability. I used an interview script to prevent leading questions that may have inadvertently influenced respondents' answers (Brinkmann & Kvale, 2015). In order to create consistency between interviews, I used the same set of questions with minimal variation. Additionally, I double-checked the computer-generated transcription and made corrections, using a consistent transcription technique, as another measure of reliability.

I achieved validity in the qualitative methods by aligning data collection with the research questions and following recommended best practices throughout the interview process. Brinkmann and Kvale (2015) contended that validation is a process that includes considering ethics in the design of the study, carefully questioning and continually checking information during the interview process, and questioning whether you are reporting a valid account of the findings of the study. I followed these recommendations at each stage of the qualitative research. Finally, I used triangulation to enhance the credibility of my findings. Interview questions and survey items provided different approaches to data collection in order to validate the findings.

CHAPTER 4

RESULTS

In what follows, I present results from the study by research question and then by theme (see Table 5). Each theme is followed by an assertion that is supported through qualitative and quantitative data. As mentioned in Chapter 3, the qualitative data included interview transcripts from 12 semi-structured interviews and written responses to three survey items from 26 participants (see Appendix B for survey items and Appendix C for interview questions). The quantitative data included 26 responses to 11 items on the survey.

Table 5

Themes by Research Question

Research questions	Themes
RQ1: How do teachers perceive their self-efficacy to implement new instructional practices in their classrooms after participating in Blended Professional Development?	<ul style="list-style-type: none">• Readiness to change instructional practices
RQ2: Which aspects of the Blended Professional Development model most influenced teachers' learning and why?	<ul style="list-style-type: none">• Collaboration• Instructor quality
RQ3: What are teachers' perceptions of Blended Professional Development as it compares with a traditional professional development model?	<ul style="list-style-type: none">• Ongoing support• Choice and flexibility

As described in Chapter 3, I coded and analyzed the qualitative data using a multi-step process that included pre-coding methods such as highlighting and jotting, first cycle coding methods such as in vivo and magnitude coding, and second cycle coding

methods such as code landscaping and focused coding (Saldaña, 2021). I analyzed the quantitative data using descriptive statistics. I developed themes and assertions to address each research question.

RQ1: Perceptions of Self-Efficacy

Readiness to Change Instructional Practices

As discussed in Chapter 2, self-efficacy is the learners' own belief in their capacity to do what was taught (Bandura, 2011). Self-efficacy is an important consideration because the goal of PD is improved instructional practices. I found that teachers perceived themselves to have high self-efficacy to implement what they learned in the BPD innovation. Evidence to support this assertion presented itself in the qualitative and quantitative data through responses that indicated confidence and/or a change in practice.

Qualitative Support

During interviews and on open-ended survey items, several teachers demonstrated self-efficacy by discussing their readiness to change instructional practices. Terms participants used during interviews and on the survey such as “right away,” “make it my own,” “try it,” “pretty immediate,” “the next day,” and “dipped my foot in” all provided evidence that teachers felt confident enough to attempt something they learned in the training shortly after the training. Teachers also spoke about individual components of the BPD such as the self-paced courses and how those components supported their ability to implement something. For instance, one teacher said:

I did [implement something new] pretty early, I mean once I watched a couple of, well, the first webinar was concluded with instructions to watch one of the videos

and learn more that way, and so I went ahead and did that, and then the next day implemented some Thinking Maps, and so I would say it was pretty immediate.

Additionally, teachers indicated their perceived self-efficacy by commenting about confidence. One survey respondent wrote, “I feel so much more confident in implementing [Thinking Maps].” Similarly, an interview participant said, “It helped my confidence in using Thinking Maps for more topics.” These teachers expressed confidence in their abilities after the BPD innovation, meaning they perceived a high level of self-efficacy. Substantial quantitative evidence follows to affirm these outcomes.

Quantitative Support

Six Likert survey items assessed teachers’ perceptions of self-efficacy: Items 1, 2, 3, 7, 11, and 18 (see Appendix B for the full survey). These items asked questions about teachers’ readiness to change practice, perceived ability to meet students’ needs, and perceived ability to implement something new after their BPD experience. Likert responses were converted to numbers for the purpose of calculating descriptive statistics (1 = *strongly disagree* to 6 = *strongly agree*). The exception to this numbering was Item 7, which was numbered in reverse due to the negative wording of the questions: *I still need more support before being able to implement new strategies I learned in the Blended Professional Development series*.

The mean of the responses to the six self-efficacy items (152 responses) was 5, which correlates to *agree* on the Likert scale. This evidence validates the qualitative results that teachers perceived high self-efficacy to implement what they learned in the BPD innovation. Descriptive statistics by item also confirmed this assertion. Table 6 provides the mean, median, mode, and standard deviation for the six self-efficacy items. Each of the six items individually has a mean of 3.5 or greater, indicating that, on

average, participants agreed with each item asking about their perceived self-efficacy. Five of the six items had a mean of 5 or higher.

Table 6

Descriptive Statistics for Survey Items About Self-Efficacy

Measure	Item 1	Item 2	Item 3	Item 7 ^a	Item 11	Item 18
<i>n</i>	26	26	26	24	24	26
<i>M</i>	5.50	5.08	5.00	3.50	5.50	5.35
<i>Mdn</i>	5.50	5.00	5.00	3.00	6.00	6.00
Mode		6	5	3	6	6
<i>SD</i>	0.510	1.055	0.980	1.615	0.590	0.797

^a Numbers used to calculate descriptive statistics for Item 7 were opposite other items due to the negative wording of the item (6 = *strongly disagree* to 1 = *strongly agree*).

Although all items assessed teacher self-efficacy, three items (1, 7, and 18) asked participants directly about their confidence and perceived ability to implement and continue to use new strategies. Table 7 provides another view of the data for these three items. When asked specifically about confidence, 100% of participants reported confidence in trying new strategies and 95.8% reported confidence in continuing to use new strategies. No participants disagreed or strongly disagreed with these items, demonstrating that everyone felt some level of self-efficacy after the BPD innovation.

Table 7*Item Analysis for Self-Efficacy Survey Items 1, 7, and 18 (N = 26)*

Item	Participants who strongly agree or agree	
	<i>n</i>	%
1. I am confident in my ability to try new strategies in my classroom after attending professional development.	26	100
7. I could implement new strategies right away after attending professional development.	21	80.8
18. I feel confident in my ability to continue using the strategies learned in this training series.	23	95.8

I analyzed the six Likert survey items about self-efficacy for reliability using Cronbach's alpha reliability coefficient. The reliability of these self-efficacy items was .74, demonstrating reliability (Ivankova, 2015). Item 7 is worded opposite from the other items and has a lower mean when compared with the other five items. Responses of *Strongly Agree* on the other five items indicate higher perceived self-efficacy, but on Item 7, *Strongly Agree* indicates low self-efficacy. There was slight inconsistency for participants on this item when compared with the others. This could have been due to the different wording; nevertheless, the alpha reliability coefficient still exceeded .70, demonstrating reliability.

Summary of RQ1 Findings

The qualitative and quantitative data consistently demonstrated that teachers perceived high self-efficacy to improve instructional practices after participating in the innovation. Participants reported that the innovation led to confidence, and all participants reported trying something new with Thinking Maps because of the BPD

training—in some cases, right after the initial webinar. As one teacher proudly stated, “I just kind of went for it.” Others implemented an improvement after the self-paced courses or collaboration. Even though learners reached mastery at different points in the BPD innovation, the findings indicated that the innovation did provide participants with the perceived self-efficacy needed to implement new instructional practices.

RQ2: Blended Professional Development Components

Collaboration

To answer RQ2, participants perceived time for collaboration to be a component of BPD that positively contributed to their learning. The data overwhelmingly supported the idea that teachers value collaboration in relation to their own learning. One participant commented during an interview, “We’re social creatures, if the pandemic has taught us anything.”

Qualitative Support

The interviews revealed the positive impact of the collaboration teachers experienced as they participated in the BPD innovation. During interviews, 11 of the 12 participants (91.7%) spoke positively about collaboration in some way. In particular, participants discussed the benefits of three aspects of collaboration: learning from others’ ideas, receiving feedback from others, and getting their questions answered. In response to the interview prompt “Describe your experience in the collaboration sessions,” 11 interview participants made comments about one or more of these three aspects of collaboration. Seven participants made comments about getting ideas from others or sharing ideas, four spoke about receiving feedback using phrases such as “bouncing ideas off each other,” and four mentioned getting questions answered or clarifying information.

The ability to learn through collaboration was evident in remarks such as the following from one teacher: “I had very knowledgeable, very experienced teachers that were willing to share things. After the session we still continued to email each other. We were able to clarify things for each other.” Collaboration and its impact were embedded throughout the interview transcripts. The following are other examples of teachers’ statements about collaboration from interview participants:

- “We had a lot of rich conversation.”
- “I really like getting ideas from my peers, that was great. I loved that, because then you get to see all different kinds of other ways of thinking about things, how people use the techniques differently. That’s probably one of my favorite parts is collaborating.”
- “We were just honest and just helped each other grow, and gave each other feedback so it was positive.”
- “When you have a chance to bounce ideas off of a peer, that’s always good.”

Open-ended survey items provided additional insight into teachers’ ideas about collaboration. These survey items asked participants to explain their answers to multiple choice questions, for example, in which they were asked to choose which component of the BPD innovation most prepared them to implement new practices. One teacher wrote, “I made connections and collaborated with teachers that are not at my site. We continued to share materials and support each other.” Another teacher wrote, “The instructor session was invaluable, but the collaboration gave me an opportunity to talk the learning through and hear ideas from others.” These written explanations give insight into the reasons why teachers like to collaborate.

Teachers also spoke about the impact collaboration has on learning. A teacher wrote, “I tend to process information when I discuss/work through material with another person. Additionally, I am able to get new ideas or a different perspective from others.” Teachers valued collaboration as they learned from peers’ ideas, received feedback from peers, and received clarification and answers to their questions.

Quantitative Support

The quantitative data complemented the extensive qualitative evidence. Multiple choice survey items elicited specific information about the BPD components. One question asked, “Which component of the Blended Professional Development was most engaging?” In response to this item, 35% of survey participants chose *collaboration session(s)*.

Additionally, eight survey participants (31%) chose *collaboration session(s)* when asked after which component they were ready to implement something new. This means that almost a third of survey respondents were not ready to implement something new until they had collaborated with colleagues. Collaboration was an important learning activity for these teachers.

Instructor Quality

A second theme that emerged from the data to address RQ2 was instructor quality. Two instructors provided the live webinars on Zoom and facilitated collaboration sessions in the BPD innovation. Each participant was exposed to one instructor for the duration of the innovation. Participants perceived both instructors to be high quality. The data showed that the live webinars with these instructors were an impactful component of the innovation. Analysis of surveys and interview transcripts led to the following

assertion: Teachers perceive the instructor quality, including the instructor’s expertise on the topic, ability to use engagement strategies, and personality, to be a significant factor in their learning. One teacher represented this assertion when she said, “The trainer really matters.”

Qualitative Support

Several interview participants commented about the quality of the instructors who delivered the live webinars. Positive comments about the instructors generally fell into three categories: the instructor’s willingness to help or provide examples, approachability and/or personality, and the instructional strategies used during the sessions. One teacher said the instructor “was very positive and was there to help.” Many teachers elaborated on reasons why they liked the instructor. For example:

She kept my attention the entire time and she was constantly asking us questions. We had to be on our toes, and she was constantly asking us to think about what we’re teaching and relating it to something that we were doing right then and there. So it was easy to pay attention and to learn.

Nine interview participants (75%) said they felt ready to implement a change right away after the webinar with one of the two instructors. Additional phrases about the instructors included the following:

- “took an interest in our thoughts”
- “knowledgeable”
- “really personable”
- “the way she taught it”
- “was there to help”
- “wonderful presenter”
- “gave great examples”

These phrases demonstrate the influence that the instructors had on participants' experiences in the BPD innovation. There were no negative comments about the instructors.

Additional qualitative data to support instructor quality appeared in responses to the open-ended survey items. These items asked participants to elaborate on answers to multiple choice questions. One of the participants who selected *webinar with the instructor* as the component that most helped her implement new practices wrote, "The instructor's knowledge in Thinking Maps was exceptional. She shared her own ideas but also facilitated in others to share out their knowledge." Other written responses about instructor quality included the following:

- "The instructor did a great job of explaining and answering all of the questions that were asked."
- "The instructor was very supportive and gave 100% to making sure we were all understanding the concepts being taught."
- "Kelly [pseudonym] is always so engaging."
- "The instructor gave us great ideas and opportunities to use our new learning."
- "Kelly provided a variety of ways to implement the Thinking Maps into instruction right away."

These survey responses were consistent with the interview data indicating that the webinars were high quality due to the engagement strategies, embedded collaboration, and support offered by the instructors. Based on these data, the instructor does play a role in teachers' attitudes about the training and the learning that takes place.

Quantitative Support

Multiple choice survey items triangulated findings about instructor quality. When participants were asked to choose which component had the highest engagement and learning (items 14 and 15), the majority of participants on both items chose *Webinar with instructor*. The *Webinar with instructor* was the initial session in which participants learned in real time from one of the two instructors. Fourteen teachers (53.8%) chose the webinar as the most engaging part of the experience, and 15 teachers (57.7%) chose the webinar as the component in which they learned the most. These responses validate the qualitative data about instructor quality.

Summary of RQ2 Findings

Results for Research Question 2 indicated that two aspects of the BPD model most influenced teachers' learning: collaboration and instructor quality. Participants' responses revealed that collaboration helped them learn due to the opportunities it afforded them to get ideas from others, ask questions, and receive feedback. Results of the study also indicated that the quality of the instructor matters. Teachers in this study valued the instructors' knowledge level, engagement strategies, and ongoing support. Both collaboration and instructor quality contributed to teachers' overall satisfaction with the BPD experience.

RQ3: Comparisons With a Traditional PD Model

Ongoing Support

Improving teacher PD was the motivation for the study; therefore, RQ3 is essential to understanding how the innovation compares with teachers' prior PD experiences. The qualitative and quantitative data support the conclusion that BPD was

perceived to be better than traditional PD because it was ongoing and had multiple components.

Qualitative Support

The data overwhelmingly supported the idea that teachers were satisfied with their experience. Ten of the 12 interview participants (83%) said they prefer a blended model of PD to a full in-person model. Eight (67%) spoke positively about the training being ongoing, unlike traditional PD, which is often a one-time event. No participants spoke negatively about the design of the modules.

Open-ended survey items provided an explanation of the impact of the multiple components. One teacher wrote, “I found that all 3 components gave me what I needed equally. I could not separate them.” Interview participants provided similar explanations. Four participants (33%) explained that it was the combination of the components that made the difference and that they were equally important. One participant commented, “The ideal professional development would be ongoing support, so it’s not just one and done and it’s chunked into bite sized pieces.”

These additional quotations from the interviews also demonstrate the impact of the entire experience:

- “It just felt more whole.”
- “I think that it was a great model for us to do. I think it had all the components that I would want. . . . I liked that it had the technology piece, I liked that it had the convenience of it fit my time. I liked my voice and choice, that I got to choose what PD was going to meet my needs and my students’ needs. As I said, I like to process with the grade level team members.”

- “All of that was a real mixture that was, I think, very valuable. So I think all components of it again were essential.”

As part of my analysis, I created a word cloud as a qualitative method to interpret interview transcripts during second cycle coding (see Chapter 3, Figure 5). The word cloud visually demonstrates the frequency of words as they appear in the data by enlarging words with higher frequency. After I removed transition words and other words without meaning, I found 88 words that had three or more occurrences. Participants used the word “time” 28 times, more than any other word. Participants used phrases such as “more time,” “collaboration time,” and “time to,” demonstrating their desire to have time with the content. This finding is consistent with the assertion that this experience was better than others because it gave teachers time with content in multiple ways.

Quantitative Support

Strong quantitative evidence supports the assertion that the BPD was an effective model for teachers. Five survey items asked questions about the satisfaction, quality, and effectiveness of the BPD experience. Descriptive statistics were used to analyze responses, and findings demonstrated a high level of satisfaction. For these five items together (128 responses), the mean of all responses for items in this group was 5.20. This demonstrates that on average, participants agreed or strongly agreed with the positive statements about their BPD experience. In response to the statement “I learned more in the BPD model than in other PD experiences,” 73% of teachers agreed to some degree (*strongly agree/agree/slightly agree*). Individual item analysis showed that a majority of teachers chose *strongly agree* on these items, and there was low standard deviation (see Table 8). Teachers consistently reported a positive experience in the innovation. I

analyzed these five Likert items for reliability using Cronbach’s alpha reliability coefficient. The reliability of these self-efficacy items was .861, demonstrating strong reliability in this group of items.

Table 8

Descriptive Statistics for Survey Items About Teachers’ Satisfaction With the BPD

Experience

Measure	Item 4	Item 5	Item 6	Item 8	Item 10
<i>n</i>	26	26	26	26	24
<i>M</i>	5.35	5.46	5.08	5.50	4.58
<i>Mdn</i>	6.00	6.00	5.00	6.00	5.00
Mode	6	6	6	6	5
<i>SD</i>	0.797	0.647	1.055	0.860	1.176

Choice and Flexibility

The qualitative data indicated that choice and flexibility in what, when, and how teachers learn had a positive impact on their perceptions of PD. I found that teachers valued choice for a variety of reasons, such as ensuring training is at their level and feeling respected as professionals. When teachers signed up for the innovation, they were given a choice of four subtopics. Teachers also saw benefits in the flexibility of the BPD innovation design, with components that could be completed any time and in any place, namely, the self-paced courses and the playlist of resources.

Qualitative Support

During interviews, five teachers mentioned choice when asked for their opinions on the characteristics of the ideal PD experience. Teachers said that having options made them feel like professionals and enabled them to receive the training they needed. One teacher shared, “I think that teachers want to be recognized for their experience and their professional voice and choice on what they get to focus on.” For another teacher, choice was important to get the right level of training on the topic: “Your choice, you know picking your choice, kind of like your level or where you are in it.”

Flexibility was also important to several teachers. As an example, the following phrases were said in the context of discussing the design of the blended training and its flexibility:

- “at my own pace”
- “any time you want”
- “pick and choose times”
- “go at your own pace”
- “privacy of my own home”
- “just about me”
- “go on to learn more”
- “level of comfort”

A benefit of blended learning is that some components can be done at each learner’s pace and at a convenient time. These asynchronous opportunities allow for flexibility. One teacher made a statement that demonstrates the value of this flexibility: “I liked the blended because it opened up free time for working moms so that you could

kind of pick and choose times that work best for you.” Another teacher commented, “I just felt more present in the virtual environment, and flexibility, comfort being at home, you know after working all day you’re tired.” Blended learning offers the ability for learning to be flexible, at least in part, due to the asynchronous components.

Summary of RQ3 Findings

Teachers preferred the BPD experience to the types of PD they had previously experienced, such as stand-alone webinars and fully in-person sessions. A teacher summed it up by saying, “It was one of the better PDs that I’ve been to, so I really did enjoy it. It didn’t feel like a chore.” In comparison with other PD sessions, another teacher shared, “I would say blended, this was the best one . . . it was the best one I’ve had, like for a very long time.” Teachers perceived this experience to be a positive one that contributed to their professional growth.

CHAPTER 5

DISCUSSION

The purpose of this action research study was to examine the PD experience for practicing teachers participating in the BPD innovation, a PD design based on best practices in blended learning (e.g., flipped classroom, choice, personalization), learning theories (e.g., sociocultural theory, self-efficacy theory), and relevant literature (e.g., best practices in PD). The BPD innovation led to teachers feeling confident enough to try new instructional practices. Participants in the study perceived collaboration, the quality of the instructor, and choice to be aspects that contributed to their learning and positive perspectives about the innovation. One survey question—asked after the innovation—had participants respond to the statement “I enjoyed attending professional development.” Twenty-five teachers (96%) agreed to some degree. The results of this study provide evidence that the BPD experience was a success for the teachers who participated.

Despite some limitations, the findings from this study are useful in my current practice and can also lead to other studies of online formats for teacher PD. The findings validated theories and existing literature, while also considering the effects of the pandemic on teacher PD. This chapter connects this study’s findings to theory and literature, discusses limitations, and proposes implications for practice and research.

Discussion of Theoretical Frameworks

Self-Efficacy Theory

The innovation supported self-efficacy, or the belief teachers had in their ability to implement a new practice learned in the BPD, in several ways. Specifically, the findings were consistent with Bandura’s (2011) concept that self-efficacy is developed

through sources such as social modeling and reduced anxiety. One participant provided an example that illustrated how social modeling led to self-efficacy: “They showed me how to do it, and I feel 100% confident, I can just use that and go from and teach from there.” Several participants reported the value of being able to see examples from peers and the instructor, an aspect that supported them in applying what they learned in the training series. Reflecting Bandura’s (2011) idea that reduced anxiety is a condition that supports self-efficacy, one participant described the training as a “warm, supportive atmosphere” where “it’s okay to ask questions.” Self-efficacy matters for teachers and should be considered a vital outcome in PD. This study found that self-efficacy led to a willingness to try new instructional practices, a finding consistent with studies of self-efficacy in PD (e.g., Holzberger et al., 2013; Zee & Koomen, 2016).

Social Capital Theory

Social capital theory provides a framework for improving instruction through collaboration with peers. This theory asserts that the group’s collective knowledge and performance, or social capital, are increased by each person’s human capital (Fullan, 2014; Fullan & Hargreaves, 2013). This theory was evident in participants’ experiences collaborating with others to implement new practices in their classrooms. As discussed in Chapter 4, participants highly valued collaboration, describing the value of learning from others’ examples, being able to ask questions, and receiving feedback from peers.

Social capital theory includes the idea that teachers are held accountable to others through collaboration (Fullan et al., 2015). Teachers in the study participated in two collaboration sessions. After meeting with their group in the first session, teachers wanted to bring examples and ideas to share with colleagues. One teacher said, “We were

actually held more accountable [than other PDs].” Another teacher said, “So I came back right away, and I did a map lesson sequence . . . so I had something to share with my collaborative group . . . that gave me the practice to really learn it and apply.” Without that opportunity to come back together with their colleagues, participants might not have felt as inclined to follow through with implementing what they learned in the PD. This reaffirms the importance of collaboration sessions being structured around a specific goal or initiative as they were in the BPD innovation.

Studies on social capital theory, such as those mentioned in Chapter 2, have discussed school or system changes that result through increased social capital. Although teachers did collaborate with other teachers in this study, I am challenged to think about potential improvements to my innovation. I thought about this when one teacher said, “The one thing I wish is my whole entire team from my school had gone together.” Next time I implement this PD design, I will consider asking entire teaching teams or schools to participate in order to increase social capital and the likelihood of a systemwide change in practice.

Sociocultural Theory

One specific aspect of sociocultural theory, the zone of proximal development (ZPD), helped me understand participants’ perspectives about collaboration. The ZPD refers to the difference between a learner’s independent ability and the ability he/she could reach if supported by a more capable peer (Swain et al., 2015; Vygotsky & Cole, 1978). Participants validated the idea of learning from a more capable peer: “I had very knowledgeable, very experienced teachers that were willing to share things.” For some participants, the more capable peer was a webinar instructor. Both instructors offered

support during collaboration sessions and after the initial webinar. For others, the peer support came from colleagues who teach the same grade level. Examples of this included sharing lesson plan ideas, answering questions, and discussing classroom experiences. Teachers in the study valued each other and their instructor as sources of information and support. Sociocultural theory and its connection to this study's findings reaffirmed the importance of including collaboration in all PD opportunities.

Discussion of Related Literature

Professional Development

The BPD innovation was designed based on literature on teacher PD; therefore, it is not surprising that the findings from this study were consistent with findings from related studies on PD. As discussed above, the findings from this study revealed the value of collaboration as a professional learning activity, also consistent with the literature on teacher PD (Darling-Hammond et al., 2017). Several studies have confirmed the idea that collaboration with colleagues has positive results for teachers' learning (Allen & Green, 2015; Graham, 2007; Yurtseven, 2017). In this study, collaboration was noted as a valuable component of the complete BPD learning experience. It complemented other learning opportunities to provide clarification, support, and extended learning for participants. Providing time for teachers to collaborate is a consistent challenge in elementary education, but the BPD design addressed this challenge by moving the direct instruction to other asynchronous formats.

Research has suggested that PD organizers should consider motivation to learn and learning theory, and should recognize the many ways in which teachers learn and the complexities of their teaching contexts (see Van Hover & Hicks, 2018). Participants in

the BPD series engaged in a combination of activities that appealed to each participant in a different way. For example, some participants reported high levels of engagement and learning using the self-paced courses and playlist activities. Others did not report those as being high impact but instead named collaboration as the most impactful. Incorporating many types of experiences into the PD series enabled more learners to engage and learn at high levels.

A consistent recommendation in the literature and policy documents is that PD for teachers needs to be ongoing and not jump from one initiative to the next too quickly (California Department of Education, 2014; Darling-Hammond et al., 2017). BPD has the potential to assist school districts in meeting this recommendation. The BPD design provided teachers with ongoing support and opportunities to learn about one topic over the course of a month, with 10–12 hours of learning activities. The flexibility in the BPD innovation removed the common barrier of not enough PD time in the work day and provided opportunities to overcome various scheduling challenges (Darling-Hammond et al., 2017). A next step in practice would be to expand on this experience by offering similar experiences on the same topic over the course of the school year.

Blended Learning

Best practices in blended learning applied to this study were choice, flexibility in time and place, a combination of learning activities that complemented one another, and collaboration following independent online activities (Acree et al., 2017; Tucker et al., 2017). Teachers in the study valued these characteristics and, as mentioned in Chapter 4, commented that they would prefer to see this type of design in the future in lieu of the traditional PD designs they experienced pre-pandemic. Teachers were able to engage in

PD outside the traditional school day, at their own pace, and with options to supplement the PD that took place in real time. The BPD innovation offered independent self-paced videos and other resources that teachers could use in a variety of ways. Findings indicated that teachers saw this flexibility as a benefit. The BPD design allowed for multiple chances for support, in a variety of ways, on the topic.

Research on blended learning (e.g., Graham et al., 2019) names choice and personalization as key benefits. Choice and personalization should also provide a structure for learners to collaborate around common content at various points in their learning, which is something the BPD innovation offered participants using a flipped classroom model. In a flipped classroom model of blended learning, time together can be spent on collaborating and applying new learning because learners have already received new content on their own using online tools such as videos or web-based learning software (Tucker et al., 2017). This is exactly what the BPD offered participants. They had a choice of subtopic and completed learning on their subtopic. Then they were grouped based on their subtopic choice to collaborate with others who studied the same content. Several participants made specific comments about the benefits of choice and personalization and how they felt valued as learners because their voice was heard.

One of the key characteristics of blended learning is that the design is a combination of in-person and online activities. Due to the pandemic, the in-person collaboration sessions were held virtually using Zoom. Moving forward, I would attempt the same BPD innovation but with in-person collaboration sessions. This modification would be a potential improvement to the innovation.

Limitations of the Study

The purpose of an action research study is to improve an educator's local context through systematic inquiry (Mertler, 2017). Action research studies are intended to focus on a specific context personal to the researcher (Mertler, 2017). For this reason, the most significant limitation of this study was the specific context of Cedarwood School District and the inability to generalize findings.

Another limitation was that the study took place during the COVID-19 pandemic, which had effects on teaching and learning in the district. The study was situated in a unique and unprecedented time. Teachers faced challenges, constant change, uncertainty, and trauma. At the time of the study, teachers had recently returned to full-time, in-person schooling after almost a year online. It is unclear how these events affected teachers' attitudes, beliefs, and participation. Additionally, it makes the findings difficult to generalize to PD in future years.

A third limitation of the study was that participation in the innovation was voluntary. Convenience sampling was used to recruit participants, but the only teachers available for convenience sampling were those who chose to complete the innovation (10% of district teachers). The BPD was not a required experience; consequently, the innovation may have inadvertently attracted teachers who already had positive opinions about PD and/or blended learning. A future study could implement the BPD innovation as a required PD experience to ensure the entire population of the district's teachers is included.

Lastly, it is possible that participants may have not been forthcoming with negative feedback due to my positional authority in the school district. As a district-level

administrator, I was not their direct supervisor but served in a leadership role that could have been perceived to be supervisory. This limitation applied only to the interviews, and triangulation with anonymous survey data increased the validity of the findings.

Discussion of Implications for Practice

This study's outcomes will influence my practice moving forward in four ways: (a) designing PD experiences that include built-in collaboration, (b) ensuring high-quality instructors, (c) valuing teachers' choices in what and how they learn, and (d) continuing to offer online PD experiences post-pandemic that apply blended learning strategies. I currently work as director of teaching and learning in a district other than the one in which this study took place; however, the lessons learned transfer to my new context.

Collaboration is essential for teachers. In my practice, I will continue to prioritize sustaining collaboration, in what limited time exists for teacher PD. In the BPD innovation, collaboration was purposefully integrated after the direct instruction to help the learners process and gain confidence with the material. I have found that buy-in for teacher collaboration is easy; however, in my experience, dedicating paid teacher PD time to collaborate is often not as easy. Creating a system-wide change that prioritizes collaboration as a PD activity will be more successful if the collaboration is purposefully designed, if there is built-in accountability, and if teachers report positive outcomes after they engage in collaboration sessions. These will all be important considerations moving forward.

A second implication for practice is selecting high-quality instructors to lead teacher PD. As one participant said, "The trainer really matters." It is important that instructors of PD are engaging, supportive, and knowledgeable. PD leaders should

carefully select and evaluate instructors and should not continue to contract with instructors who are not well received by teachers. This is especially true in the online environment. I plan to ask instructors what kind of engagement strategies will be used in the session, how they will check for understanding, and how they will field questions. I think a key to the success of the BPD was that the instructors made themselves available for support for the duration of all experiences. The instructors were available during collaboration sessions and by email as participants engaged in online courses. This was an ideal way to foster positive relationships between the instructors and participants.

Next, teachers in the study provided positive comments in relation to having choice in PD; consequently, I have already begun taking this into consideration as I plan PD. While it is not always possible to allow for complete choice due to required district and state initiatives, it is possible to find ways to allow choice within those requirements and to offer a wide variety of offerings that includes both required and choice PD. In the BPD innovation, the training topic was Thinking Maps, a required district initiative. Within this topic, teachers had a choice on the subtopics. One session was geared more toward beginners who are learning the basics of using Thinking Maps, while other choices went deeper into the topic by focusing on using Thinking Maps in mathematics or to develop academic vocabulary. This choice satisfied the need for training on the common district initiative but also allowed for some choice by teachers. Moving forward, I plan to find ways to incorporate teacher choice within options for PD. I will also continue to use surveys to elicit training topic needs before setting the district PD calendar for the year.

Using blended learning in PD is the final implication for practice. Blended learning gave teachers in this study the opportunity to learn in a variety of ways, making it a more accessible learning experience. All 24 survey participants reported trying something new with Thinking Maps in their classroom because of the BPD training, but these 24 tried something new at different points during the innovation. For example, some participants reported they felt ready after the initial webinar, while others did not attempt to try anything new until after a collaboration session. The value of offering a variety of learning experiences is that it met more teachers' needs than a traditional PD experience might have. The BPD design provided a high level of support and led to changes in classroom practice. I will continue to use this format as much as possible post-pandemic to appeal to a higher number of teachers and to provide a variety of support options for instructional initiatives.

Discussion of Implications for Research

Researchers should consider replicating studies on blended learning and teacher PD in the post-pandemic environment. A number of studies have examined blended learning and PD, but they were conducted before the pandemic (e.g., Acree et al., 2017; Surrette & Johnson, 2015; Wycoff et al., 2003). The pandemic presumably increased teachers' comfort with and knowledge of technology, thus opening doors to a better experience with online PD. Studies should consider how the pandemic changed teachers' feelings about online PD, in addition to studying other blended learning designs and their effects on teacher learning.

I am interested in conducting action research in my new district to study the BPD innovation at a different point in the school year and with a different group of teachers.

As a routine part of my job, I survey teachers for their evaluations of each training. Using what I learned as part of this action research study, I am equipped to design questions that provide information about teachers' perceptions of the experience and whether it is meeting their needs.

Conclusion

The BPD design is a starting point for a new way of supporting and developing in-service teachers post-pandemic. This study validated the ideas that collaboration is essential, not all teachers learn the same way or at the same rate, and ongoing support from a qualified trainer is necessary. Prior to the pandemic, online teacher PD was not used in the district. When schools shut down for in-person instruction in March 2020, teachers were thrown into a system of fully online teaching and learning, including in teacher PD. It is imperative we learn from our experiences with online learning to move forward and do better. We can take the best parts of in-person PD and combine those elements with the best parts of online PD to create a more supportive and accessible teacher PD system.

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APPENDIX A

RECRUITMENT EMAIL TO POTENTIAL PARTICIPANTS

Post-innovation Survey and Interview Recruitment

Hello Teachers,

Thank you for participating in the __ (Title of the training they chose) __ professional development series. As you may know, I'm earning my doctorate from Arizona State University and the topic of my action research dissertation is teacher professional development. I am seeking teachers who are willing to take a short survey about their experiences in the blended professional development series you just completed. The survey should take no more than 10-20 minutes. The surveys are anonymous, there is no compensation, and there is no requirement for you to participate. I am also seeking willing participants to participate in 20-30 minute interviews over Zoom to discuss your experience in the professional development series. Research interviews will be recorded via Zoom and erased upon completion of the study. I truly appreciate your consideration. Should you choose to participate in the survey and/or interviews, please use the links below.

([Link to Survey](#)) ([Link to sign up for interview](#))

APPENDIX B
SURVEY ITEMS

Instructions: Thank you for participating in my study. Your responses to this survey will be anonymous. The results of this study may be used in reports, presentations, or publications, but your name will not be used.

<i>Question/Prompt</i>	<i>Response Type</i>	<i>Item Type/RQ</i>
Consent Statement		
Enter the last 2 digits of your cell phone number and the first two letters in your home address street name. <i>Example</i> 62BA	Text entry (used to match pre and post survey responses)	Identifier
What best describes your gender?	Multiple choice: Female, Male, Prefer Not to Say, Prefer to Self-Describe: _____	Demographic
What grade(s) do you currently teach?	Multiple choice: PK-1, 2-3, 4-5, 6-8	Demographic
How many years have you been teaching?	Multiple choice: 0-5, 6-10, 11-15, 16-20, 21+	Demographic
For the following questions, think only about your experience in the Thinking Maps Blended Professional Development series (Webinar, self-paced course, collaboration session(s)). Rate the degree to which you agree with each statement, from Strongly Agree” to “Strongly Disagree”		
1. I am confident in my ability to try new strategies in my classroom after attending professional development.	6-point Likert scale: Strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree	RQ1
2. This professional development gave me what I need to meet my students’ diverse needs.	6-point Likert scale: Strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree	RQ1
3. After completing professional development, I have what I need to improve my instruction.	6-point Likert scale: Strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree	RQ1
4. Professional Development is a worthwhile way to spend work hours.	6-point Likert scale: Strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree	RQ3

5. Professional Development improves my instructional practices.	6-point Likert scale: Strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree	RQ3
6. I enjoyed attending professional development.	6-point Likert scale: Strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree	RQ3
7. I could implement new strategies right away after attending professional development.	6-point Likert scale: Strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree	RQ1
8. Professional development was delivered using effective instructional practices.	6-point Likert scale: Strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree	RQ3
9. Which webinar did you attend?	Academic Vocabulary, Thinking Mathematically, Taking Information Off the Map, Developing Map Expertise	
10. I learned more in the Blended Professional Development Model than in other professional development experiences.	6-point Likert scale: Strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree	RQ3
11. I still need more support before being able to implement new strategies I learned in the Blended Professional Development series.	6-point Likert scale: Strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree	RQ1
12. Which component of the Blended Professional Development most prepared you to implement something new right away in your classroom?	Multiple Choice: <input type="checkbox"/> Webinar with instructor <input type="checkbox"/> Self-paced online videos <input type="checkbox"/> Collaboration session(s) <input type="checkbox"/> None of the components prepared me to implement something right away	RQ2
13. Please provide an explanation for your answer to the previous question.	Open-ended Response	RQ2

14. Which component of the Blended Professional Development was the most engaging?	Multiple Choice: <input type="checkbox"/> Webinar with instructor <input type="checkbox"/> Self-paced online videos <input type="checkbox"/> Collaboration session(s) <input type="checkbox"/> None of the components were engaging	RQ2
15. In which component of the Blended Professional Development did you learn the most?	Multiple Choice: <input type="checkbox"/> Webinar with instructor <input type="checkbox"/> Self-paced online videos <input type="checkbox"/> Collaboration session(s) <input type="checkbox"/> I did not learn anything new	RQ2
16. Please provide an explanation for your answer to the previous question.	Open-ended Response	RQ2
17. At which point in the process did you implement something you learned in your classroom?	Multiple Choice: <input type="checkbox"/> Webinar with instructor <input type="checkbox"/> Self-paced online videos <input type="checkbox"/> Collaboration session(s) <input type="checkbox"/> None	RQ2
18. I feel confident in my ability to continue using the strategies learned in this training series.	6-point Likert scale: Strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree	RQ1
19. How did this blended professional development experience affect your ability to implement something new in your classroom?	Open-ended Response	RQ 1, 2

APPENDIX C
INTERVIEW SCRIPT

Introduction

Thank you for agreeing to participate in an interview. Your participation is voluntary and you can withdraw participation at any time. Your responses in this interview may be used in reports, presentations, or publications but your name will not be used. I would like to record this interview using the Zoom record function for the purpose of making sure my transcriptions are accurate. The interview will not be recorded without your permission. Do you agree to being recorded through Zoom? If so, please click on the link in the chat to complete a consent form.

Interview Questions

Demographic Questions

1. How many years have you been teaching?
2. What grade level(s) do you currently teach?

Questions about Professional Development

1. In which part of your Blended Professional Development experience did you learn the most? Why?

Possible probing question: Can you give more specifics about why?

Possible specifying question: How did you behave during or after that experience?

2. How was this experience different from past professional development experiences?

Possible follow-up: Can you elaborate?

3. In your recent Blended Professional Development experience, did you leave feeling ready to implement a change to your current teaching practice?

Follow-up: Why or why not?

4. Would you rather participate in Blended Professional Development or fully in-person professional development?

Follow-up: What are some of your reasons?

5. Describe your experience in the webinar.

Follow-up: What aspects did you like or not like about the experience?

6. Describe your experience in the self-paced online course.

Follow-up: What aspects did you like or not like about the experience?

7. Describe your experience in the collaboration sessions.

Follow-up: What aspects did you like or not like about the experience?

8. Did you use any playlist activities such as the gallery or blogs? If so, what are your thoughts on those activities?

9. What are some characteristics, in your opinion, of the ideal professional development experience?

APPENDIX D
CODES AND TOP 10 LIST

Codes

In Vivo Codes	Magnitude Coding	Categories
Bouncing ideas off each other Gave each other feedback Shared, Helped each other grow Throw things back and forth Talk quite easily, Hearing and listening Collaborate, Collaboration Have conversations, Hear their experiences Learned from each other Discussing, Willing to share Having time with our colleagues	11/12 (interview participants) spoke positively about collaboration	Collaboration
I could go and choose, Personalize it Different pathways to pick from I didn't have to learn things I already know		Choice
Really took an interest in our thoughts Her style and how she taught us She's really personable, Engaging The way she taught it, Knowledgeable Great webinar presenter Checking for understanding She was fantastic, She was amazing Learned the most from her She was there to help, Wonderful presenter	5/12 (interview participants) mentioned learning the most from the webinar with the instructor 9/12 (interview participants) said they felt ready to implement a change right away after the webinar with instructor	Trainer quality
More bang for your buck, Multiple dates Not one and done, Ongoing Felt more whole, A nice blend All components were essential Bring it all together with the collaboration	8/12 (interview participants) spoke positively about the training being ongoing	Ongoing
The next day, Right away and use it Make it my own right away Learn it and apply it, Pretty immediate Dipped my foot in I just kinda went for it, Try it right away	Prepared postsurvey participants to implement something new right away: Webinar-14, Collaboration-8 Self-paced videos-3	Implementing something new
At my own pace, Any time you want		Flexibility

<p>Pick and choose times, Go at your own pace Privacy of my own home, Just about me Go on to learn more, Level of comfort When I want, Where I want, My own time Easier to concentrate, Stop and listen again Over and over, Comfort, It was 9 o'clock Without having the distractions</p>		
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Top 10 List

<p>“It was one of the better PDs that I’ve been to, so I really did enjoy it. It didn’t feel like a chore.”</p>
<p>“The trainer really matters.”</p>
<p>“I think also having time to collaborate with teachers in your grade level is always good.”</p>
<p>“I think that it needs to be sustained by the district, because teachers don’t want to feel like it’s a one and done, or you know this is going to come today and it’s going to be gone tomorrow.”</p>
<p>“We had a lot of rich conversation.”</p>
<p>“We’re social creatures, if the pandemic taught us anything.”</p>
<p>“When you have a chance to bounce ideas off a peer that’s always good.”</p>
<p>“I think that teachers want to be recognized for their experience and their professional voice and choice on what they get to focus on.”</p>
<p>“We never have enough time to practice when we’re at a session.”</p>
<p>“Your choice, you know picking your choice, kind of like your level or where you are in it.”</p>

APPENDIX E
IRB EXEMPTION



EXEMPTION GRANTED

Lauren Harris
Division of Teacher Preparation - West Campus
 480/965-6692
 Lauren.Harris.1@asu.edu

Dear Lauren Harris:

On 3/26/2021 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	A Blended Approach to Teacher Professional Development
Investigator:	<u>Lauren Harris</u>
IRB ID:	STUDY00013723
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none"> • Interview consent.pdf, Category: Consent Form; • Interview Protocol.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • IRB Social Behavioral_LHernandez_final.docx, Category: IRB Protocol; • Letter of permission wsd.pdf, Category: Off-site authorizations (school permission, other IRB approvals, Tribal permission etc); • recruitment_methods_email_03-26-2021.pdf, Category: Recruitment Materials; • Survey consent.pdf, Category: Consent Form; • Survey Items.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 3/26/2021.