

**An Exploratory Case Study on Professional Development, Self-Efficacy,
and Educational Change**

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Dissertation Submitted to the Doctoral Program
of the American College of Education
in partial fulfillment of the requirements for the degree of
Doctor of Education in Educational Leadership
November 2022

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Abstract

Teachers are one of the essential factors contributing to student learning and achievement. Professional development is widely used in K–12 schools to provide teachers with the skills to deliver relevant and effective instruction and should positively enhance teacher knowledge affecting external and internal teacher behaviors. While professional development has been researched, little is known about how it impacts a teacher’s sense of self-efficacy. The exploratory case study, grounded in Bandura’s theory of self-efficacy and Burns’s transformational leadership theory, supported the premise that effective professional development design should consider the principles of self-efficacy and transformational leadership. The problem is professional development inadequately addresses the knowledge–practice gap that exists between teacher participation in professional development, teacher self-efficacy, student learning, and educational change. Data were collected about how effective and ineffective professional development impacted teachers’ self-efficacy and instructional practice, and the perception of their ability to drive educational change. Nineteen K–12 teachers participated in a focus group and responded to a teacher self-efficacy questionnaire. Thematic analysis was used to identify themes to capture the data’s essence. The study results showed teachers had firm conclusions about their experiences with effective professional development and understand the role of professional development in enhancing instructional practice. Teachers also had explicit opinions about ineffective professional development, the barriers, and the impact on their self-efficacy. Lastly, the responses indicated teachers understood how effective professional development and teacher self-efficacy impact teachers’ perceptions about their ability to make educational changes in their classrooms.

Keywords: self-efficacy, effective and ineffective professional development

Dedication

I would like to dedicate my dissertation to my dad who has been on this journey with me from the beginning. He has endured countless questions, discussions, and shared articles. His encouragement and unconditional support have meant everything to me.

Acknowledgments

First, I would like to acknowledge my dissertation committee for providing guidance and feedback throughout the study. Dr. Gerben and Dr. Wiehe went above and beyond at each stage of the dissertation to help me reach my goal. I would also like to thank the excellent professors at American College of Education whose insight and knowledge steered me through the research process. I would be remiss if I did not thank the ACE librarians who answered every question and always guided me to the proper resource. I would also like to express my sincere gratitude to Linda Carter, my editor. Her hard work, commitment to excellence, invaluable feedback, patience and kindness kept me on track during the final push of completing my dissertation. To the teachers who so generously gave of their time to participate in the study, provided thoughtful and personal responses, and who are deeply committed to the students, I could not have done this without you. Thank you. Lastly, I would like to acknowledge my family for their endless encouragement and support.

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Chapter 1: Introduction

Teachers' changes or improvements because of professional development (PD) have been a topic of discussion and study over several decades (Heyd-Metzuyanim et al., 2018). Postholm (2018) wrote researchers have recognized teacher PD is vital to changing instructional practice, increasing students' achievement, and driving educational change. The global context of education has provided a new focus on policy and practice for K–16 educational systems and the role PD will have in preparing teachers for a new landscape (O'Flaherty & Liddy, 2018). The literature supports the understanding that the aim of PD workshops or courses has been to provide teachers with knowledge and complex skills. Future research related to the role of PD in preparing both the teacher and the student with the skills they will need to succeed and drive change in the 21st century may be conducted and supported by the findings of the present case study. Changes in classrooms and schools to support a digitized classroom and an ever more global pedagogy should be supported by effective PD (Darling-Hammond et al., 2017; Postholm, 2018; Thurlings & Brok, 2017).

Teachers are the cornerstone of teaching and learning and, through instruction, skills, and abilities, can bring about school improvement and educational change. To maintain a high quality of teaching and learning, teachers need to have access to continuous learning in the form of PD often provided by the schools (Gul et al., 2021). Gul et al. (2021) noted PD was not limited to acquiring content knowledge but included improving the teacher's attitude. Bates and Morgan (2018) stated PD should enhance teacher knowledge and practice and, as a result, student learning; yet too often, PD fails to achieve the goal and frequently leaves teachers feeling frustrated and unable to implement changes in their classrooms.

Teacher PD has proven to be more than a one-size-fits-all workshop and is a complex and

systematic process of external and internal circumstances (W. Liu et al., 2019). The internal processes include teachers' self-efficacy beliefs, or teachers' beliefs about their capabilities to provide effective instruction and to create change, and overall job satisfaction (Hajovsky et al., 2019). The literature established certain elements of PD had to be present to be effective in achieving the intended goals of the PD (Bates & Morgan, 2018; Palmer & Noltemeyer, 2019). Darling-Hammond et al. (2017) identified seven characteristics that make PD effective: (a) content focused; (b) active learning; (c) collaboration in job-embedded contexts; (d) models and modeling; (e) coaching and expert support; (f) feedback and reflection; and (g) sustained duration that demonstrates a positive link between PD, instruction, and student outcomes. Lastly, if PD is seen as the development of the professional teacher and the intended outcomes are often not achieved, how to make changes to improve the PD experience must be better understood (McChesney & Aldridge 2018).

Background of the Problem

The preparation of both preservice and in-service teachers to work in dynamic and complex school settings and the need to provide relevant and effective PD opportunities have been the focus of educational research (Flores, 2020). Teachers play a pivotal role in schools. Effective teachers help their students to achieve higher levels of performance and success in educational systems around the globe (K. Liu et al., 2016). For many years, teachers have been the recipients of PD as passive consumers of prepackaged approaches to learning (Meijs et al., 2016). Even though 99% of schoolteachers participate yearly in PD, they report little satisfaction with their PD experiences (R. Smith et al., 2020). Professional development is considered both an opportunity and obligation for teachers to enhance current practice and acquire new skills and instructional practices (Patton et al., 2015). Postholm (2018) described PD as an event that

occurs off-campus, in a formal setting, and as a one-time workshop with little feedback or continuous learning. Fullan (2007) posited any professional teacher learning in context and in schools or classrooms is the only method that translates to change in classroom practice.

The literature supports the notion effective PD consists of certain elements and, at the same time, should consider a teacher's beliefs about the ability to develop skills and change instructional practice to bring about increased student achievement (Barni et al., 2019; Bates & Morgan, 2018; Palmer & Noltemeyer, 2019). Teachers are under continual pressure to perform and to improve student achievement (Burner & Svendsen, 2020). Teachers around the globe are expected to demonstrate effectiveness, high student test scores, and manage the classroom environment (Burner & Svendsen, 2020). O. Smith and Robinson (2020) found district-selected, one-day workshops were the least effective method for offering teacher PD and infrequently resulted in any significant change in teaching practice. Lastly, like Fullan (2007), Postholm (2018) posited professional learning in context is the only PD that can change instructional practice.

In a study related to teacher self-efficacy and teacher burnout, Tutlys et al. (2021) found burnout rates are determined by both external and internal factors. In a quantitative study with a sample of 24,109 teachers, analysis of the data found 50% of the teachers experienced burnout in the first 10 years of teaching (Tutlys et al., 2021). The same empirical research found teacher professional learning is affected by the link between burnout and job satisfaction (Tutlys et al., 2021). To further establish the importance of the consideration of teachers' self-efficacy in the role of PD, a quantitative study with a sample size of 227 teachers showed about 73% of teachers' self-efficacy was higher when they were given the freedom to choose their PD and to establish learning goals (Barni et al., 2019).

McChesney and Aldridge (2018) wrote despite the poor results found in the regular evaluation of teacher PD, a substantial amount of the budget is spent annually on PD with the notion if the facilitators have taught the PD, then the teachers must have learned, and the desired outcomes will follow. Bowers (2018) stated, “The threat for today’s professional development is not passivity but pseudo-activity” (p. 286). The challenge is the structure of teacher PD inhibits the opportunity to drive educational change through teacher learning because the focus is primarily on activities rather than the effective components of PD and teacher self-efficacy (Bates & Morgan, 2018; Bowers, 2018; Darling-Hammond et al., 2017).

Statement of the Problem

The problem is PD inadequately addresses the knowledge–practice gap that exists between teacher participation in PD, teacher self-efficacy, student learning, and educational change. Mumhure et al. (2020) established teacher PD, for centuries, has mostly been done by external facilitators who present advice on how to improve classroom and student achievement. In addition, they found that, globally, PD has mainly been a top-down decision whereby teachers are told what and how to change and is largely presented in one-day workshops intended to give teachers the latest trend in instruction or assessment and lacks relevance to the realities of teachers’ daily experiences (Mumhure et al., 2020). Although teachers see value in learning and educational change, their perceptions about PD are influenced by time constraints, the organization of PD, and the need for compliance (O. Smith & Robinson, 2020).

The background of the problem is teachers are expected to lead educational change and improve student achievement based on the knowledge and skills acquired in PD, yet when students fail, teachers are often considered to be responsible (Piedrahita, 2018). The extent of the problem is the failure to increase student achievement or adopt innovative curriculum is never

considered the result of ineffective PD models that may intrinsically influence teacher self-efficacy (Bowers, 2018; Piedrahita, 2018). Mumhure et al.'s (2020) case study concluded expert-led PD is out of touch with what is happening in classrooms around the globe and found their research could be a bridge to future research and innovation for PD that addresses the gap between what is learned in teacher preparation programs and what teachers experience in their classrooms.

Purpose of the Study

The purpose of the qualitative exploratory case study was to explore how professional development impacted teacher self-efficacy and teachers' perceptions of their ability to drive educational change. The qualitative exploratory case study supported the examination of a contemporary event or experience, PD, through focus groups with teachers and questionnaires using how and why questions (Yin, 2009). A sample size of 19 teachers was used for the study. The study sought explanations about teachers' experiences and perspectives with PD and their self-efficacy. Understanding how PD impacted teachers' self-efficacy and perceptions of their ability to drive educational change is relevant to the field of educational research because the study aimed to discover the relationship between the three elements and to explore how that knowledge could be used to improve PD in a dynamic and complex educational system. The propositions of the theory of self-efficacy as a study of human agency (Bandura, 1982) and transformational leadership theory (Burns, 1978) as a proposition of transformative and organizational change were fundamental to the original goals and design of the study, the development of the research questions, and the review of the literature.

Significance of the Study

The exploratory case study on how effective PD impacts teacher self-efficacy and

teachers' perceptions of their ability to drive educational change is significant to the field of teacher preparation, teacher development, student achievement, and educational change. The literature written by experts about PD supports the notion PD holds the promise as an intervention to improve teacher knowledge, instructional practice, and, more importantly, drive educational change (S. Liu & Phelps, 2020). Villegas-Torres and Lengeling (2021) wrote about the assumption that teachers evolve from novice to expert through teaching and time spent in the classroom. However, research conducted by Villegas-Torres and Lengeling questioned the belief teachers achieve expertise through the number of years in the classroom and posited effective teaching consists of emotions, identity, socialization, self-efficacy, and agency.

The literature provided evidence to support PD impacts teacher self-efficacy and teachers' perceptions of their ability to drive educational change. The study has the potential to contribute to an existing body of literature about the importance of understanding how teacher PD experiences can impact teachers' desire or ability to implement the knowledge gained in PD (Marshall & Rossman, 2016). The exploratory case study has conceivable significance for practice and policy and ongoing discussions about the role of teacher self-efficacy in the design and implementation of PD and how self-efficacy and PD influence teachers' perceptions of their ability to make educational changes. Therefore, the exploratory case study identified the important theoretical frameworks that guided the study as it related to the understandings of teacher self-efficacy and transformational leadership theory (Marshall & Rossman, 2016). Lastly, the case study identified the gaps in what is known about PD, teacher self-efficacy, and educational change and pointed to policies and practices that are not working and the need to address the knowledge–practice gap that is present despite teachers participating in PD (King, 2016).

The implications for the qualitative exploratory case study on how PD impacted teacher self-efficacy and educational change are important. First, the contribution to existing research on teacher PD indicates PD facilitators, designers, teachers, principals, or school districts should be able to draw on reliable, positive constructs, concepts, and theories to construct frameworks that can guide the design of future PD endeavors (Loughland & Nguyen, 2020). Second, the data obtained and analyzed from the study can be applied to other educational research; for example, how teacher self-efficacy can affect teachers' willingness to integrate technology in classrooms as education moves toward a more globalized and connected model of education (Xie et al., 2021). Lastly, the case study established the possibility of using teacher self-efficacy as a predictor of burnout and dissatisfaction as they relate to PD or educational change in a global world (Zimmermann et al., 2018).

Research Questions

The purpose of the qualitative exploratory case study was to explore how professional development impacted teacher self-efficacy and teachers' perceptions of their ability to drive educational change. The research utilized two focus groups and two questionnaires. The study was guided by the following research questions.

Research Question 1: How does a teacher's experience with effective professional development impact teachers' instructional practice in K–12 schools?

Research Question 2: How does ineffective professional development impact teacher self-efficacy in K–12 schools?

Research Question 3: How do effective professional development and teacher self-efficacy impact teachers' perceptions of their ability to drive educational change in K–12 schools?

Theoretical Framework

The 21st century has seen significant changes in schools and society with the design of new technological, sociocultural, and educational trends. The focus for a changing society has embraced the idea of lifelong learning and PD to thrive and compete in the new landscape of the global village (Canaran & Mirici, 2019). Possessing up-to-date information, learning with colleagues, and finding ways to collaborate to adapt to the new skills needed for both teachers and students take place through teacher PD (Canaran & Mirici, 2019). According to M. Khan and Afridi (2020), teachers in the United States spend about 270 hours per year in professional learning activities. If this PD did not achieve the intended goal of applying the new knowledge and increasing student achievement, this could be considered a loss of time and money.

Even though a wide body of research on PD exists, few studies have been able to link specific teacher PD to improvements or changes in instructional practice and improvements in student achievement and teacher self-efficacy (Gore et al., 2017). Teacher PD often fails to support teachers in acquiring the skills and mindset needed to make important instructional shifts that address the achievement gaps of students (Riordan et al., 2019). More importantly, teacher PD inadequately produces engaged, eager, and willing learners who implement changes in instruction or assessment (Riordan et al., 2019).

Professional development is not just about meeting standards or increasing student outcomes. While both are important objectives, teacher PD must be seen as a continuously dynamic process that should take into consideration teacher self-efficacy to understand teacher motivation reflects a teacher's internal sense of self (W. Liu et al., 2019). According to Pfitzner-Eden (2016), researchers have identified multiple important connections between teacher self-efficacy and the sought-after outcomes for teachers and students, which include resilience,

instructional quality, job satisfaction, less teacher burnout, and commitment to the profession.

Individuals form beliefs about self-efficacy, according to Bandura (1982), by interpreting information about their abilities. Lastly, transformational leadership theory encourages teachers to go beyond their interests and work toward the vision and objectives to drive educational change (H. Liu & Li, 2018).

The qualitative exploratory case study was grounded in the theoretical frameworks of the theory of self-efficacy and transformational leadership to explore how PD impacts teacher self-efficacy and teachers' perceptions of their ability to drive educational change (Bandura, 1977, 1982; Burns, 1978). The purpose of the qualitative exploratory case study was to explore how professional development impacted teacher self-efficacy and teachers' perceptions of their ability to drive educational change. The study was supported and explained using the four principles of mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states established by Bandura (1977) in the theory of self-efficacy. The principles of the theory of self-efficacy were used to understand the impact of PD on teacher self-efficacy. The tenets of the transformational leadership theory—idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration—and transformational leaders were used to explore how PD impacts teacher self-efficacy and teachers' perceptions of their ability to drive educational change (Burns, 1978; Reza, 2019).

Definitions of Terms

Enactive mastery experiences can be defined as known as performance accomplishments or are psychological states through which a learner organizes his or her own set of beliefs (Shooter, n.d., p. 2).

Phenomenon is defined as an observable fact or event (Yadav, 2018).

Practice is defined as the work of teacher educators and teachers (Steadman, 2018).

Professional development (PD) enables educators to develop the knowledge and skills they need to address students' learning challenges (Mizell, 2010).

Self-efficacy can be defined as a person's belief in one's capability to organize and implement courses of action necessary to reach selected types of performance (Artino, 2012, p. 1).

Social constructivism can be defined as a perspective that believes a great deal of human life exists as it does due to social and interpersonal influences (Galbin, 2014). Constructivism has been a powerful model for explaining how knowledge is produced in the world as well as how people learn (Shah, 2019). Constructivism hypothesizes learning as an active, contextualized, or constructive process (Shah, 2019). Knowledge is constructed by people who are socially and culturally embedded rather than isolated (Shah, 2019).

Assumptions

An assumption can be defined as something one accepts as true without question or proof or a willingness to accept something as true without question or proof (Cambridge University, n.d.). One assumption of this qualitative study is participants responded honestly to the questions during the focus groups. The second assumption is the participants' perspectives and beliefs represented the greater population of teachers. Another assumption is the researcher had personal beliefs or biases about PD that were necessary to conduct the research but could not be demonstrated. These biases included both positive and negative personal experiences with PD (Simon & Goes, 2013).

Scope and Delimitations

The purpose of the qualitative exploratory case study was to explore how professional

development impacted teacher self-efficacy and teachers' perceptions of their ability to drive educational change. The scope of the study was the impact of effective PD on teacher self-efficacy as it relates to beliefs about teachers' abilities to implement the skills and knowledge learned in PD to drive educational change. The study was conducted, and the data collected during two 90-minute focus groups and through two questionnaires that were emailed to participants before the focus groups. The focus of the case study was centered on teachers' perspectives about how PD impacted teacher self-efficacy and educational change. Data were collected from 19 K–12 elementary, middle, and high school teachers. The inclusion criteria stated participants must be teaching in a school at the time of the study with a minimum of 1 year's teaching experience and have participated in PD within the previous 12 months. The research was conducted using a qualitative exploratory case study that included two focus groups and two questionnaires to collect the data. The data were analyzed using thematic analysis to identify patterns and themes within the qualitative data (Maguire & Delahunt, 2017).

Delimitations

Delimitations, according to Theofanidis and Fountouki (2018), are the limitations consciously set by the researcher and are concerned with the limits and boundaries of the research study, so the aims are achievable. The first delimitation is the case study did not cover the role of principals in the selection of teacher PD. The following participants were excluded from the study: (a) teachers who were not teaching in a school at the time of the study, (b) preschool and higher education instructors, and (c) teachers without PD experience over the prior year. Yin (2009) stated one concern about single-case studies using questionnaire research as offering a poor basis for scientific generalizing. However, case studies, much like experiments, are generalizable based on the theoretical proposition. In this case the theory of self-efficacy and

the transformational leadership theory. The data collection tools used in the case study were two focus groups and two questionnaires designed with both theories in mind.

Limitations

Limitations are considered any potential weaknesses in a research study that may be outside of the researcher's control and could stem from the research design (Theofanidis & Fountouki, 2018). Case study research has been criticized or characterized as lacking rigor and providing little basis for generalization (Crowe et al., 2011; Marshall & Rossman, 2016). However, Tellis (1997) wrote Yin, Stake, and others developed a robust set of procedures, and, when followed, the research will be as well developed as any in the scientific field. The vast amount of data that were collected poses a potential time constraint that can impact the depth of analysis (Yin, 2009). Marshall and Rossman (2016) noted the importance of thinking through the time necessary for the various critical research activities and wrote the number of days allocated to data gathering becomes the metric for estimating the time required for the other jobs. Additionally, Stake (1995) identified the following areas as possible constraints on time and resources: recruitment of participants, access and permission, data sources, time to analyze, and time to write the report.

One of the limitations identified for the exploratory case study includes the inability to recruit enough teacher participants. To mitigate this limitation, participants were recruited using LinkedIn as needed. Next, the smaller sample size had the potential for not generating a large scope of responses that could be applied to all levels of schools (Theofanidis & Fountouki, 2018). Third, the use of thematic analysis as a qualitative method required a deeper understanding of how to identify themes and patterns and to produce codes to categorize those themes. As such, time was planned by establishing a schedule and setting a time each day to

transcribe, evaluate, and separate participant responses; identify themes and patterns; and create the codes. Reading about thematic analysis and how it was used in other case studies was important to strengthen the skills needed for meaningful and systematic data analysis (Braun & Clarke, 2013; Maguire & Delahunt, 2017).

Addressing the limitations would have been negated if biases were left unidentified and the researcher sought to support a preconceived notion (Yin, 2009). To address and manage elements, including bias, that undermined the reliability of the data and validity of the interpretations and conclusions, a reflective journal was kept. The journal included the reasons for conducting the research study, any assumptions regarding the research, and potential conflicts with study participants (Tufford & Newman, 2010).

The case study had significant potential for future research and for transferability to contemporary understandings of effective PD and its ability to positively or negatively impact teacher self-efficacy, student achievement, and educational change. The coverage of the case study further described the understanding of the importance of effective PD as it relates to teaching quality, teacher self-efficacy, and the how ineffective PD can influence teachers' perceptions about their abilities (Gore et al., 2017). Lastly, the case study contributed to an existing body of literature about the influence of teacher self-efficacy on achieving educational objectives and how it impacts teachers' perceptions of their ability to drive educational change (Safari et al., 2020).

Chapter Summary

Teacher PD is a national, as well as a global, mechanism for ensuring high-quality teaching in schools (Juuti et al., 2018). According to Baier et al. (2019), teachers differ substantially in their instructional practices in classrooms and schools, so understanding that

change is a complex and nonlinear process makes teacher change a difficult phenomenon to comprehend (Heyd-Metzuyanim et al., 2018). Most teachers take part in PD opportunities each year, and a large amount of the school budget is dedicated to PD that too often does not lead to substantial changes in instruction or student achievement (Palmer & Noltemeyer, 2019).

Teacher self-efficacy has become a topic of educational research as the result of the implications tied to teaching effectiveness, instructional practices, and student academic outcomes (Barni et al., 2019). According to Barni et al. (2019), significant research has shown teachers who possess high degrees of self-efficacy have greater job satisfaction, decreased levels of stress, and face fewer difficulties in the classroom. Therefore, understanding the antecedents of self-efficacy had important relevance to effective PD and its influence on teachers' perceptions of their ability to make instructional changes.

The qualitative exploratory case study, data collection, data analysis, and findings were grounded in two theories: (a) Bandura's (1982) theory of self-efficacy and (b) Burns's (1978) transformational leadership theory, which led to the development of the research questions that guided the study in the exploration of how PD impacted teacher self-efficacy and teachers' perceptions of their ability to drive educational change. The significant body of literature on PD and the theoretical frameworks are presented in Chapter 2.

Chapter 2: Literature Review

Teacher professional development (PD) has been considered an important method to change classroom practice, to improve schools, and to increase student outcomes (Postholm, 2018). The aim of most PD workshops is to provide teachers with the knowledge and complex skills both teachers and students need to succeed in the 21st century and to drive educational change (Darling-Hammond et al., 2017; Postholm, 2018; Thurlings & Brok, 2017).

The problem is PD inadequately addresses the knowledge–practice gap that exists between teacher participation in PD, teacher self-efficacy, student learning, and educational change. The purpose of the qualitative exploratory case study was to explore how PD impacted teacher self-efficacy and teachers’ perceptions of their ability to drive educational change. The study extends the knowledge about the relevance of teacher self-efficacy and effective PD.

Despite a growing body of literature identifying teacher PD as one of the critical factors for enhancing student outcomes, limited explanation exists for the lack of fidelity for implementation and sustainability of change in classrooms (King, 2016). The work of Beavers (2009), Favre and Knight (2016), Fullan (2007), Imants and Van der Wal (2020), H. Liu and Li (2018), K. Liu et al. (2016), Meijs et al. (2016), and Postholm (2018) showed many of today’s PD options are ineffective in improving teachers’ instructional practices and increasing student learning outcomes.

The role of PD in classrooms and schools around the world is complex and a widely expanding area of study (Safari et al., 2020). The literature has established teachers with an increased sense of self-efficacy are more likely to implement innovations in their instructional practices. Furthermore, previous research studies showed a relationship between teachers’ self-efficacy beliefs and student achievement and increased overall professional fulfillment (Barni et

al., 2019; Favre & Knight, 2016; Sahin-Taskin, 2018; Zee & Koomen, 2016).

According to Horn and Goldstein (2021), the United States spends \$18 billion a year on teacher PD; the researchers suggested allowing teachers to decide on what PD they want to attend and posited the PD market was broken. To address the gap in the literature, Overstreet (2017) found identifying the factors of effective PD is complex because it is difficult to relate a PD experience to actual teacher learning and change in teacher practice. Randel et al. (2016) identified the importance of PD to teacher learning yet found the literature stated mixed results about the effects on teacher and student outcomes. The implications of the inability to measure the effects of PD on teachers and students called for future research.

The literature search strategy lists the search engines, databases, and search terms and keywords used to identify peer-reviewed articles. The theoretical framework follows and includes a synopsis of Bandura's (1982) theory of self-efficacy and Burns's (1978) theory of transformational leadership and describes how both theories were applied to the qualitative case study. The literature review includes an analysis of research studies and journal articles as they relate to PD. The counterargument provides a look at the role principals play in teacher PD. Lastly, the summary provides a brief overview of the literature, findings, and future research needed.

Literature Search Strategy

The articles, journals, and sources for the literature review were obtained through a local community college library, American College of Education Library, and Google Scholar. The databases included Science Direct, OneSearch, Psychology and Behavioral Sciences, ProQuest, EBSCOhost, and ERIC. To conduct the research, the search terms and combinations of search terms included *Theory of Self-Efficacy*, *Bandura's Theory of Self-*

Efficacy, Theory of Transformational Leadership, James Burns, professional development, self-efficacy, teaching, educational change, effective professional development, teacher efficacy, effective professional development elements include, teacher instruction, efficacy, 21st century learning skills, teachers and professional development, Transformational Leadership, educational change methods, patterns for change, fidelity to professional development, adult learning theory, innovative professional development, communities of learning, professional learning communities, experts and professional development, self-efficacy and satisfaction, teaching quality, teaching quality measured, principal and self-efficacy, principal's and professional development, principal's self-efficacy, preference and professional, and future of teacher professional development. The literature review describes PD and self-efficacy as it relates to teachers' motivations, instruction, teaching quality, and educational change.

Theoretical Framework

Teachers are critical to the learning and outcomes of students. Preparation of new and veteran teachers to work in dynamic settings of educational change is essential. Ideally, PD offers a means of collaborative support and training to address these changes and meet the challenges head-on (Beavers, 2009). For teachers, PD is both an obligation and an opportunity, serving to change and confirm teachers' current classroom practices (Patton et al., 2015). As a result, effective PD is critical to educational policy and reform (Flores, 2020). The qualitative exploratory case study utilized the theoretical frameworks of the theory of self-efficacy and transformational leadership to explore the problem of ineffective PD and its lack of impact on teaching and student learning and how PD inadequately addresses the knowledge–practice gap that exists between teacher participation in PD, teacher self-efficacy, student learning, and educational change (Bandura, 1977, 1982; Burns, 1978). In addition, this qualitative exploratory

case study supported and explained the four principles established by Bandura (1977) in the theory of self-efficacy to assess and examine the impact of PD on teacher efficacy, educational improvements, and student outcomes. The tenets of the transformational leadership theory were utilized to explore how PD impacted teacher self-efficacy and teachers' perceptions of their ability to drive educational change.

Self-Efficacy

In consideration of human agency mechanisms, self-efficacy is central to a person's belief in their capacity and ability to affect change. In reference to the social learning view, assessments about self-efficacy are based on four principles: (a) enactive mastery, whereby people assess their achievements; (b) vicarious experiences from observing the performance of others; (c) verbal persuasion and related kinds of social influences in which a person possesses certain capabilities; and (d) physiological states from which people ascertain their capabilities, strengths, and vulnerabilities (Bandura, 1982; Gist & Mitchell, 1992). While these various experiences can influence self-efficacy beliefs and perceptions, a person's cognitive assessment and integration of the experiences ultimately determine self-efficacy (Bandura, 1982).

Based on the four categories, Gist and Mitchell (1992) wrote self-efficacy can be thought of as a ranking of judgment for performance capacity brought on by the integration of several performance determinants. First, analysis of task requirements allows an individual to make inferences about what capabilities will be needed to perform at different levels. Second, the attributional analysis of experience includes the individual's judgment about why a certain level of performance occurred for reasons of mastery or curiosity (Gist & Mitchell, 1992). Third, the evaluation of personal and situational resources and constraints provoke individuals to consider their skills, motivations, and effort as well as situational factors such as distractions, demands,

and time constraints, all of which can impact future performance (Gist & Mitchell, 1992). The four categories of the theory of self-efficacy can be considered in the context of PD as it incorporates the process of analyzing task requirements, engaging in activities, and acquiring knowledge to enrich professional knowledge, skills, and attitudes of teachers to improve student learning outcomes (Imants & Van der Wal, 2020).

Bandura (1977) wrote increased self-efficacy can be generalized to other circumstances in which performance is impacted by the preoccupation of the lack of an individual's abilities. Extended experiences that ensure improvements in behavior are more effective than are limited or short experiences that typically end before mastery or successful performance of the activity has occurred (Bandura, 1977). The theory of self-efficacy can be generalized in each of the four principles equally across different sets of findings using other treatments or variables (Bandura, 1977). According to Gist and Mitchell (1992), Bandura constructed a strong argument that "human accomplishments and positive well-being require an optimistic and resilient sense of personal efficacy" (p. 205). Lastly, Bandura (1977) identified the processes that include informing and enhancing self-efficacy and wrote people can be changed when experiences are conceptualized in the four principles of performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal.

The theory established by Bandura (1982) explores how people deal with the environment and the understanding that change is not a matter of one fixed act of knowing what to do or how to respond to change. Change is a process of expanding capabilities that include cognitive, social, and behavioral skills that are arranged or organized into incorporated actions. The theory of self-efficacy posits that those psychological procedures can and do change the level and strength of a person's self-belief and increases their willingness and abilities (Bandura,

1977). To consider this theory in the context of teacher PD, Golombek and Johnson (2017) wrote for an experience to be considered educational rather than a habit, teachers must engage in continuous reflection that includes a process of active, persistent observation. This process of constructing knowledge enables teachers to reflect on and interpret their experiences both inside the classroom and during PD (Golombek & Johnson, 2017). The transformative power of reflection and construction of knowledge for teachers allows them to be aware of their thoughts and beliefs about their abilities to bring about change (Golombek & Johnson, 2017).

This central belief strongly supports the foundation of professional achievements, motivation, and well-being among teachers and the process of their learning (Bandura, 2017). Self-efficacy can be applied to the study of the impact of PD on teachers' efficacy to show whether the belief in their ability is an important factor in their effectiveness (Sehgal et al., 2016). Additionally, Bandura's theory of self-efficacy can be utilized to examine the influence of teacher efficacy and job satisfaction (Safari et al., 2020). The theory of self-efficacy underscores the notion that unless a person believes they can change through their own will and actions, they will have little motivation and reason for taking on activities or persevering in the face of challenges or hardships, both within the classroom and on the job (Bandura, 1977, 1982; Safari et al., 2020; Sehgal et al., 2016).

Self-efficacy beliefs are evaluations of one's ability to act on and maintain a specific behavior necessary to obtain specific outcomes (Hajovsky et al., 2019). In the context of PD, teacher self-efficacy refers to one's beliefs about one's instructional capacity and the ability to improve instruction, refine behaviors, and improve student learning and outcomes. This belief about self-competence and -capacity has been linked to several areas of school and not just student achievement. Imants and Van der Wal (2020) established a model for analyzing the role

of teacher self-efficacy in PD and the active role it plays in shaping teachers' work and environment as an indispensable element of high-quality and meaningful education.

Self-efficacy can be used to advocate for teachers' beliefs and attitudes about how instructional or educational change is possible and for its consideration in designing and facilitating effective PD. O. Smith and Robinson (2020) wrote when applying the theory of self-efficacy to PD, teachers' beliefs, prior knowledge, and active engagement may be strong factors in determining how and whether important and effective instructional changes are implemented. Self-efficacy beliefs should be considered as independent measures of the actual essential ability that affect intention, motivation, and engagement (O. Smith & Robinson, 2020). Therefore, a better understanding of the antecedents of self-efficacy and the important role self-efficacy plays in teachers' welfare, effectiveness, and improvement leads to significant benefits (Barni et al., 2019).

Sharma and Pandher (2018) established the importance of regular self-assessment, reflection, and knowledge updating as vital to ongoing teacher learning. Included in this self-assessment are self-observation, self-judgment, and reflective practices as an investigative process of identifying perceptions, beliefs, and attitudes. These beliefs are affected by mastery experiences, vicarious experiences, and psychological arousal (Bandura, 1977; Mintz, 2019). The practice of regular assessment can be applied by both PD facilitators as well as teachers through the fourth principle of individualized consideration, which calls for an understanding of an individual's strengths and weaknesses and the needs of the individual for growth and achievement (Reza, 2019).

Teacher self-efficacy has been examined in the context of and conditions in which teachers perform tasks. Several teacher efficacy researchers collectively concluded school

environment characteristics include job satisfaction, the ability to deal with stress, student behavior issues, and work in various job positions (Barni et al., 2019; Safari et al., 2020; Yoo, 2016). Safari et al. (2020) noted job satisfaction does not refer to skills but to teachers' beliefs in their ability to successfully perform the job duties associated with teaching or administration. Barni et al. (2019) further made the connection between teacher self-efficacy and values that require further study concerning job satisfaction. On the other hand, decreased self-efficacy can result in lower self-esteem and less effective instruction, decreased student learning, and more teacher turnover (Safari et al., 2020). Therefore, teachers must measure self-motivation, persistence, and an efficacy expectation for a strong belief that teachers can successfully perform to produce better and higher outcomes (Bandura, 1977).

The focus of educational improvement and reform relies on improving instruction, assessment, and outcomes (Imants & Van der Wal, 2020). Assured teacher self-efficacy is critical for creating high-quality classrooms, lesson plans, and delivering effective instruction and job satisfaction (Zee & Koomen, 2016). Furthermore, even though teachers understand the expectation to provide high-quality instruction and know certain actions may result in desired outcomes, knowing this is useless when teachers lack the belief that they can take action to produce those outcomes (Zee & Koomen, 2016). The theory of self-efficacy, therefore, is foundational in guiding and exploring the following research question: How does effective PD impact teacher self-efficacy?

The theory of self-efficacy was selected as one of two foundational theories upon which to base the qualitative exploratory case study to explore how effective PD impacts teacher self-efficacy and teachers' perceptions of their ability to make educational changes in their classrooms or within the school. The research examined how PD impacted teacher self-efficacy

and teachers' perceptions of their ability to drive educational change. The components of the theory have consistently proven that through the determinants of behavior, attitudes, beliefs, and performance, achievements can be enhanced (Gist & Mitchell, 1992). The research study explored the how and what of both self-efficacy and PD as significant to teachers' perceptions of their ability to drive educational change.

Transformational Leadership Theory

Burns (1978) believed that people, ubiquitously, seek captivating and creative leaders. He defined the role of transformational leadership as a reciprocal process of mobilizing people with values during various economic and political influences, and during conflict and competition, to attain certain goals both individually and as a group made up of a mix of leaders and followers (Burns, 1978). Leaders who are able to shape, change, and elevate the goals and values of their staff members by teaching others how to be leaders are considered to be transformational leaders (Burns, 1978).

The nature of the 21st-century challenges suggests teachers and school leaders must engage with their community in a meaningful and relevant manner to assess the needs, problems, and expectations (Kniffin & Patterson, 2019). The transformational leadership theory in the context of educational change, PD, and teachers' perceptions of their ability to drive educational change calls for the ability to mobilize stakeholders; identify the social, political, and economic influences on 21st-century competencies; establish goals; and make value-driven decisions (Kniffin & Patterson, 2019).

The transformational school leader or teacher can be distinguished from other teacher-leaders based on their ability to align those in the school or classroom with the greater good (A. Khan et al., 2016). The transformational school leader or teacher can engage students

and parents based on a common goal through empowerment and motivation (A. Khan et al., 2016). According to Bass (1999, as cited in Han et al., 2016), transformational leadership is made up of four tenets: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Idealized influence concerns leaders who are exemplary role models based on their superior capabilities and strong ethical conduct. Individuals who are considered transformational leaders demonstrate charisma, the ability to establish a clear vision and mission for their organization and are trustworthy and respected by their staff members (Reza, 2019). Inspirational motivation is the second component, which involves a leader's ability to motivate and encourage their staff to work beyond the expectation by establishing a purpose, fix the spacing and challenging them to improve; establishing an expectation and commitment to the organization's mission and vision can inspire people to see the attainment of organizational goals as their achievement (Reza, 2019).

The third component, intellectual stimulation, calls for leaders to stimulate innovation and create expectations through new ideas, reframing challenges, asking people to think critically, and identifying solutions that encourage them to increase their competencies and abilities. Intellectual stimulation includes creating a safe culture of collaboration in which people are empowered and encouraged (Reza, 2019). Lastly, individualized consideration focuses on the individual's needs for growth and achievement with the leader as coach or mentor; recognizing diverse needs, strengths, and weaknesses; and stepping aside so others may perform and fulfill their unique talents and abilities (Reza, 2019).

Transformational leadership theory describes individuals who can influence, refine, and change their staff members effectively through a consistent vision; enriched personal relationships; understanding the importance of team peak performance, creativity, and

innovation; empowering greater responsibility; encouraging risk taking; and the fulfillment of results and outcomes (Reza, 2019). These leaders engage in the four components to inspire others to perform at a higher level than expected and contribute to shared values and vision. They maximize other people's awareness of motivation, commitment, satisfaction, and trust as they engage in their profession (Han et al., 2016).

Many schools are facing a decline in the quality of teaching resulting from the changes of moving from a postindustrial society to a knowledge- and technology-based society. Teachers are now mandated to acquire a better understanding of 21st-century skills and to pass that knowledge on to their students (Evers et al., 2016). Transformational teachers can evoke change by implementing innovative and creative methods of instruction and assessment, by reframing difficulties both for themselves and students, and by inspiring their students to persist and achieve (Reza, 2019).

Teacher PD is a key area of focus for principals and district leaders as one mode of transforming instructional practices as teachers identify the necessary skills and competencies students need to improve learning and outcomes (Evers et al., 2016). The transformational leadership classroom embraces the characteristics of the context of business, as identified by Pounder et al. (2018), to benefit teachers and increase student outcomes in a school setting. Pounder found transformational leadership in the classroom can be transferred to enhanced levels of workplace engagement and can equip teachers and students with the characteristics of influence or charisma, motivation, consideration, and stimulation. These qualities can result in creativity; innovation; high performance; human development; and the ability to convey vision, mission, and workplace relevance (Pounder et al., 2018).

Transformational leadership theory is significant with specific respect to PD because it

calls for knowledge sharing, self-efficacy, and leads to psychological empowerment and collaborative educational change (Han et al., 2016). The theory of transformational leadership was relevant to this exploratory case study because it explored the question: How does PD impact educational change? According to Burner (2018), the one main topic in educational research and policy is educational change. He further suggested educational scholars, teachers, and leaders should ask themselves why educational change is necessary (Burner, 2018). The answer can be found in applying the transformational leadership theory when establishing a clear vision and aiming to do the meaningful collective work of school improvement (Reza, 2019).

The theories of self-efficacy and transformational leadership work well together to provide a lens for the transformative nature of education. Professional development has been identified as the most often used method for bringing about educational change (R. Khan et al., 2019). The literature on self-efficacy has firmly established that teachers who possess high self-efficacy are more able and likely to implement learned knowledge into their classroom instructional practices and have led to increased student learning and outcomes (Favre & Knight, 2016). Additionally, the literature points to teacher PD having much in common with the concepts of lifelong, reflection-based, transformative learning for preservice and in-service teachers (R. Khan et al., 2019; K. Liu et al., 2016; Ucan, 2016). Lastly, at the core of educational change is the critical role not just for school leadership but also for classroom teachers as efficacious teacher-leaders in creating a collaborative work environment in which self-actualization and self-esteem are linked to positive outcomes for individual students and the organization, leading to educational change (Burner, 2018; A. Khan et al., 2016).

Transformational leadership theory, as stated by Brandt et al. (2019), assumes transformational leaders are visionaries who can articulate a vision that is innovative, inspiring,

focused on empowering others, skilled at accommodating a diverse group of people, and is highly participative. One of the greatest challenges transformational leaders face is sustaining change in the face of acquiring new knowledge and skills (Burner, 2018). The theory of transformational leadership was selected as a framework for the qualitative exploratory case study due to the focus on transformation, innovation, and creativity.

Research Literature Review

The following literature review explores the role self-efficacy and PD play in influencing teachers' perceptions to about their ability to drive educational change. The theory places teachers as transformational leaders at the center of driving educational change in their classrooms when they believe they have the ability to change their instructional practices. Teachers are often seen as the agents of change, and the research study explored how and what teachers need to be those agents of change. In the absence of strong evidence for increased self-efficacy and effective PD, the quality of teaching and student success has become an area of research as one way to address the knowledge–practice gap (Gore et al., 2017; King, 2016).

Teaching Quality and Student Success

To begin with the end in mind and understand how teacher self-efficacy and teachers' perceptions of their ability to drive educational change is impacted by PD, Baier et al. (2019), Bhai and Horoi (2019), Black and Allen (2019), Gore et al. (2017), and Riordan et al. (2019) evaluated what characteristics were used to qualify or quantify teaching quality. Black and Allen described the teacher behaviors educational psychologists considered to be effective for student learning. Ideally, teachers will show proficiency in the four categories: (a) content mastery, (b) skilled performance, (c) facilitation of learning, and (d) personal engagement (Black & Allen, 2019). However, in the right context, even just one of the four categories leads students to learn

something.

Black and Allen (2019) wrote good teaching can be learned and improved to achieve higher quality teaching and stated good teaching is not a list of characteristics, which might include giving prompt feedback, communicating high expectations, or encouraging student–faculty contact, that can be checked off by teachers. A qualitative approach to defining good teaching includes observing outstanding teachers and studying the ways they enable and encourage exceptional performance from their students (Black & Allen, 2019). Black and Allen found good teaching is a dynamic process that evolves continuously, and at the core is the teacher’s diagnostic knowledge, or the ability to assess and diagnose a student’s thinking, capabilities, understandings, and misconceptions. Bhai and Horoi (2019) stated teaching quality encompasses multiple attributes that include the teacher, students, peers, and class size, which can be interpreted as quality in the classroom.

In a study that utilized matched and analyzed teacher–student data, Bhai and Horoi (2019) determined the attributes of teachers, students, peers, and class size could not be separated from any measure of teaching quality due to the strong influential relationship the three had in the classroom experience. They further stated any measure of quality could produce a skewed result depending on which attribute was examined (Bhai & Horoi, 2019). Given the high relevance of instructional quality and student outcomes, the question arose about how a high level of instructional quality of teaching was acquired, which required further research (Baier et al., 2019).

Teacher self-efficacy has garnered an increasingly significant role in school psychology research because of its implications for teaching effectiveness and students’ academic achievement (Barni et al., 2019; Sahin-Taskin, 2018). To support Black and Allen’s (2019) idea

that good teaching is a dynamic process, Barni et al. (2019) surveyed 227 teachers and concluded enhanced self-efficacy supports openness to change and independence, which is developed through PD or other learning experiences outside the classroom. Zide and Mokhele (2018) described teachers as the cornerstone of teaching and learning and wrote that, through their teaching, the teachers influenced school improvement based on their skills and abilities. Along with high-quality teachers is the key element of enhancing the quality of education and the need for continuing PD (Zide & Mokhele, 2018).

Teacher Professional Development

The preparation of teachers to work in complex settings and the need to support in-service teachers with relevant and effective continuous learning opportunities are common themes in educational research (Flores, 2020). Teacher education scholars have advocated for universities to adeptly prepare teachers, to work in a global environment, with the right knowledge, 21st-century skills, and disposition to ensure learning for a diverse student body (K. Liu et al., 2016). Furthermore, schools, educational systems, districts, and governments around the world are aware of the urgent need to improve the quality of education in schools (McChesney & Aldridge, 2018).

For many years, teachers have been the recipients of PD as passive consumers of a one-size-fits-all, prepackaged approach to learning (Meijs et al., 2016). Although 99% of schoolteachers participated annually in PD, they reported generally little satisfaction with their PD experiences (R. Smith et al., 2020). Professional development was considered both an opportunity and obligation for teachers to enhance current practice and acquire new skills and instructional practices (Patton et al., 2015). Postholm (2018) described PD as an event that occurs off-campus, in a formal setting, and as a one-time workshop with little feedback or

continued learning. Fullan (2007) posited any professional teacher learning in context and in schools or classrooms is the only method that translates to change in classroom practice.

Schachter et al. (2019) studied the guidelines for selecting PD for early childhood teachers and concluded traditional PD in early childhood is often provided in one-off training that results in limited success in bringing about effective changes in practice. In a systemic review, Gast et al. (2017) found, while more teachers are working in teams, most PD interventions are focused on the individual teacher.

The one-size-fits-all, prepackaged method of PD has failed to address teacher self-efficacy in its presentation and lack of follow-up and opportunity for deeper learning (Sahin-Taskin, 2018). The theory of self-efficacy emphasizes the importance of teachers actively engaging in PD and the process of self-assessment and self-reflection (Sahin-Taskin, 2018; Sharma & Pandher, 2018). Poorly constructed online PD has also reflected the face-to-face, one-size-fits-all, or teacher-as-consumer model. However, Collay (2017) found online PD allows for transformational learning and leadership from the perspective of both the facilitator and the teacher as a learner. Online PD requires teachers to revisit attitudes and beliefs about their practice and transform their learning environment using innovative and new ways (Collay, 2017). Reza (2019) wrote transformational leadership is apparent when a transformational leader or teacher raises the level of motivation, objectives, and achievement within the organization or classroom. The limited impact of the PD that is available to teachers has shown to impart little change in teacher practice and student achievement and has driven researchers to identify how PD can lead to changes in the classroom or school (Collay, 2017).

Teachers' Perceptions and Attitudes About Professional Development

Teacher PD has played a pivotal role in sustaining and creating education and educational

change. Furthermore, PD has had an impact on creating a positive climate of learning based on self-efficacy and transformational leadership (Salam & Mohamad, 2020). According to R. Smith et al. (2020), although teachers saw value in attending PD, specifically literacy development, their perceptions were impacted by forced compliance and district mandate. The teachers' attitudes about the time commitment and the organization of the PD suggested little perceived value for their classrooms and instructional practice (R. Smith et al., 2020).

K. Liu et al. (2016) wrote about teacher development and motivation and found the coordinated and systemic process of PD affected both intrinsic and extrinsic motivation based on the states and levels of the teachers' development. They found teachers' values were self-constructed and could be influenced and guided by others and led to deeper teaching practice if the PD were based on teachers' values and goals and not external school or district goals (K. Liu et al., 2016). Additional research conducted by R. Smith et al. (2020) showed PD facilitators or designers increased the benefits of the PD if they included teachers in the planning and facilitation of the workshops. Considering teachers' values and goals and including them in the planning process utilizes one of Bandura's (1977) tenets of the theory of self-efficacy: that people's behavior is influenced and changed by how competent they perceive themselves to be and their beliefs and willingness to embrace change (R. Smith et al., 2020).

Teachers are often considered to be the change agents in their schools; as such, they are faced with new challenges that affect the way they interact with the curriculum, students, and school environment (Tutlys et al., 2021). The quantitative analysis of scientific literature conducted by Tutlys et al. (2021) found high-quality and effective teacher PD enhanced instruction, and student achievement was seen as a lifelong endeavor that addressed the influence of the ever-changing facets of one's experience throughout their career. Teacher dissatisfaction

and frustration stemmed from professional expectations and the realities of a teacher's work both in the classroom and school (Tutlys et al., 2021). After surveying 10 teachers about their current and future professional selves, Ng (2019) found all the teachers had similar views and saw themselves having different attributes at different stages of their careers. The study strongly suggested teachers were open to and wanted to change and grow themselves professionally for the benefit of the students as well as themselves (Ng, 2019).

Loughland and Nguyen (2020) described research centered on what constitutes effective teacher professional learning and found a shift from the design elements to the theory of action. The study looked at how 12 teachers perceived collaborative professional learning rather than individualized PD (Loughland & Nguyen, 2020). Loughland and Nguyen wrote student achievement is considered the most important indicator when it came to measuring the effectiveness of teacher PD and suggested teacher motivation, disposition, and behaviors should be considered the measurements. A second study, conducted by Badri et al. (2016), found teacher PD needs were varied and PD should focus on teachers becoming lifelong learners. Badri et al. established that teachers want to be respected for their leadership abilities not just in the classroom but within the school community. Teachers also need to be empowered to continue to develop their expertise according to the changing needs of curriculum and stage of career, leading to high-quality instruction and standards (Badri et al., 2016).

Motivation, beliefs, attitudes, empowerment, vision, leadership, and change are predicated on the theory of self-efficacy. The theory of self-efficacy supports the idea that dealing with one's environment is not fixed or a matter of a single act but a continuous process situated on cognitive, social, and behavioral tenets (Bandura, 1982). Perceived self-efficacy consists of a teacher's judgments and how well they can complete tasks and take action to

address the needs of students. Performance-based activities can transform beliefs and attitudes and can lead to effective changes in instruction and student achievement (Bandura, 1977; Reza, 2019). Teachers have a pivotal role in the performance and achievement of students and schools. Safari et al. (2020) determined self-efficacy had the greatest effect on teachers' professional learning compared to other variables such as job satisfaction and professional fulfillment.

Professional Development and Self-Efficacy

Teachers and the profession of teaching have often been the subjects of research that consisted of learners' opinions of the teachers, teachers' influence on students, teacher workload and burnout, teachers' skills, and teacher performance (Lukacova et al., 2018). Teacher self-efficacy concerning instructional effectiveness, teaching practices, and student academic achievement has obtained an important role in educational and school psychology research (Barni et al., 2019). Research has shown teachers with high levels of self-efficacy fulfill their responsibilities in the classroom and within the school, which makes their profession more fulfilling (Barni et al., 2019; Sharma & Pandher, 2018). Self-efficacy refers to teachers' belief in their ability to successfully handle the tasks, responsibilities, and demands related to their role in the school. The belief is influenced by four principles: (a) enactive, (b) vicarious, (c) psychological, and (d) verbal experiences (Gist & Mitchell, 1992).

Postholm's (2018) review referred to a study conducted by Opfer et al. (2011) that suggested when teachers' beliefs become relevant or important to practice, beliefs turn into values that are given high priority in learning and teaching. Mintz (2019) suggested self-efficacy beliefs are to some extent independent measures of both actual and implicit ability and subject to the influence of verbal persuasion, vicarious and mastery experiences, and psychological interest. Ultimately, teacher self-efficacy is a construct that demonstrates the extent to which teachers feel

capable of successfully taking on new teaching practices (Mintz, 2019).

While much research exists on self-efficacy, Juuti et al. (2018) focused on the most influential source of instructional self-efficacy, which pertains to teachers' enactive mastery experiences. When teachers had positive experiences during PD that included action, they had a greater chance of developing a strong belief in their instructional capabilities and their ability to create changes in the classroom based on that new knowledge (Juuti et al., 2018). Failures worked in the same way to reinforce the perception of their performance, but Juuti et al. found when teachers worked to overcome challenges and failures, a more robust self-efficacy was developed. Pfitzner-Eden (2016) identified several meaningful connections between self-efficacy and PD, including resilience as well as enhanced commitment, job satisfaction, and teaching performance.

Teacher self-efficacy is a complex topic because it impacts so many different areas of a classroom, school, teacher, principal, and student. Self-efficacy impacts instructional practice; individual and team effort among faculty, staff, students; and persistence in the profession of teaching (Loughland & Nguyen, 2020). Martin and Mulvihill (2019) wrote one might assume veteran teachers have higher self-efficacy than preservice or new teachers; however, research has documented practicing teachers typically have lower self-efficacy. Martin and Mulvihill found the role of teacher educators as a central focus for self-efficacy in preparing candidates of color, low-income, and first-generation teachers to work in areas with the same demographics as where they grew up. Martin and Mulvihill wrote about the twofold challenge presented when increasing self-efficacy in preservice teachers. First, teachers must have been given opportunities that ensured learning success, so they gained positive personal experience using instructional strategies to help them understand excellence (Martin & Mulvihill, 2019). Second, assisting

preservice and in-service teachers to implement instructional practices that result in measurable student success allowed the teachers to see they made a difference with students. Martin and Mulvihill stated the teachers wanted feedback and it had to come from trusted sources of evidence that showed higher levels of achievement in their students.

Teachers play a pivotal role in schools. Effective teachers help their students to achieve higher levels of performance and success in educational systems around the globe (K. Liu et al., 2016). A considerable amount of research shows teacher self-efficacy plays a key role in achieving greater student learning outcomes, greater belief in their capabilities and skills, job satisfaction, persistence in challenges, and personal fulfillment (Lukacova et al., 2018; Safari et al., 2020). Understanding the antecedents of self-efficacy has excellent benefits for designers and facilitators of PD, which has a stronger impact on ensuring high-quality educational change in classrooms and schools (Barni et al., 2019; Zee & Koomen, 2016).

Awareness of and attention to the role of the teachers' environments and experiences in PD and school reform has grown due to its mediating factor between the growth of teacher experience and enhancing student outcomes (King, 2016). Imants and Van der Wal (2020) stated PD must be embedded within teacher learning as part of teachers' daily process and development of self-efficacy in the role of change agent in educational change. While PD is meant to bring about changes in education, long-lasting change occurs through the teachers' values, perceptions, beliefs, and goals (Barni et al., 2019; Haverback, 2020; Meijs et al., 2016; Sehgal et al., 2016). Professional development is conducted with the hope of positively influencing teacher knowledge and practice, and ultimately student achievement, yet it has not always been documented to achieve the goal (Bates & Morgan, 2018). The work of Bates and Morgan (2018), Darling-Hammond et al. (2017), and Palmer and Noltemeyer (2019) yielded seven design

elements that contribute to effective PD.

Effective Professional Development

Teacher PD has long been considered an important approach to improving the quality of education. Many studies have examined the characteristics of effective PD. Palmer and Noltemeyer (2019) found effective PD included PD opportunities in school, increased knowledge, administrator support, active learning activities, continuous coherence, and relevant subject matter. Professional development must be constructed in a way that supports teachers as both learners and teachers and helps them to deal with both roles (Canaran & Mirici, 2019). Professional development begins with the underlying premise that change is a process, and to be effective must begin with a powerful vision and include evaluation and follow-up (Canaran & Mirici, 2019).

From the constructivist approach, Canaran and Mirici (2019) wrote active participation in PD is key to having a positive impact on performance that leads to a positive impact on teaching and student learning. Canaran and Mirici added the following characteristics to the list: (a) contextual alignment, (b) internal and external support for teachers, (c) exploration and reflection with attention to practices and beliefs, (d) valuing teachers' experience and knowledge, and (e) teacher collaboration. Darling-Hammond et al. (2017) identified models and modeling of effective practice, coaching, expert support, and sustained time to reflect and work on the same topic provided teachers with a clear picture of what best practices looked like.

Lastly, supporting the principal's role through PD contributes to the professional growth and fulfillment of teachers. Herrmann et al. (2019) showed when principals' PD focused on increasing efficacy in teachers, it had little impact on student achievement or school climate. On the other hand, PD focused on instructional leadership, human capital, and organizational

leadership enhances school climate (Herrmann et al., 2019). Therefore, one can assume the focus or topic of the principal's PD can have an impact on improving instruction and student achievement (Herrmann et al., 2019).

Transformational leaders have been found to be critical to both teacher and school success. Brandt et al. (2019) wrote transformational change is increasingly challenging to achieve in schools. However, change can be encouraged and achieved by leaders who create a safe learning environment, establish school vision and mission, and stimulate action and understanding (Hitt & Player, 2019; Reza, 2019). Transformative learning includes innovation, calculated risk taking, planning, and student-centered teaching and learning (Collay, 2017). Lastly, principals with strong beliefs or mental models of encouragement for teachers who support educational changes in the classroom and schools have enhanced student achievement in their schools (Hitt & Player, 2019).

The goal of PD is to positively impact teachers' instructional practice, knowledge, beliefs, attitudes, and, ultimately, student achievement (Bates & Morgan, 2018). Collay (2017) and Bates and Morgan (2018) concluded for PD to be effective it must have certain characteristics. This assertion was supported by studies that determined traditional PD initiatives have failed to impart measurable changes in instructional practice or student achievement because they were missing the research-based characteristics of effective PD (Bates & Morgan, 2018; Darling-Hammond et al., 2017; Martin & Mulvihill, 2019; Overstreet, 2017). Kniffin and Patterson (2019) wrote the global society faces multiple complex social issues. The nature of the 21st century and the skills and competencies teachers and students will need are not fully known (Kniffin & Patterson, 2019). Therefore, PD will play a larger role in mitigating the complexities and the competencies, and both transformational leadership and self-efficacy will play a

substantial role.

Hughes et al. (2018) conducted a qualitative ethnographic case study to explore what methods the future of PD could include. Over 2 years, 11 teachers were introduced to sustainable PD options that included maker spaces and inquiry-based and constructionist active learning opportunities; the researchers found teachers engaged in meaningful collaboration, exhibited a growth mindset, and developed a new range of skills (Hughes et al., 2018). The study of the future of PD should be predicated on PD that includes as many of the seven characteristics of effective PD as possible and should consider the research on self-efficacy and transformational leadership theory to provide teachers with sustainable PD learning opportunities (Bates & Morgan, 2018; Darling-Hammond et al., 2017; Hughes et al., 2018).

The Future of Professional Development and Educational Change

Analysis of various educational systems around the world both at the micro and macro levels determined efforts to bring about educational change and improved quality of education are tied to the quality of teachers (M. Khan & Afridi, 2020). Although traditional forms of PD are still conducted in all countries, the aim of PD must include the methods and forms that allow for teacher self-efficacy and transformational leadership attributes to take on the challenges of the 21st century (Brandisauskiene et al., 2020). Learning was looked at through the lens of sustainable PD as both a transformative and collaborative endeavor that acknowledged PD is a requirement for educational quality, and this knowledge made it necessary to look at the concept of relevant and sustainable PD to inform the future of educational changes (Brandisauskiene et al., 2020).

Although classrooms were equipped with digital devices and access to the Internet, Barton and Dexter (2019) and Hughes et al. (2018) concluded most of the teachers had not

designed their courses to include regular opportunities for students to engage in technology that would have enriched student learning. Teachers did not consistently utilize or maximize the full potential of classroom technologies for increasing or enhancing student interest and comprehension. Barton and Dexter found if teacher self-efficacy were positively associated with technology integration, then high-quality integration of useful and relevant technologies would have enhanced the learning environment and increased student capacity. Also, PD focused on technology integration to meet design standards and was troubled by sustainability and scalability issues (Barton & Dexter, 2019). Cultivating teacher self-efficacy, as it relates to technology use and integration, has been established as necessary to sustaining successful changes in teacher practice (Barton & Dexter, 2019; Brandisauskiene et al., 2020).

Professional development focused on the principles of sustainable development helped teachers to understand what the fundamental needs of future education are going to be but failed to see the content of education as an opportunity to give students the competencies and knowledge that would propel them to thrive in a world of systemic change (Brandisauskiene et al., 2020). While traditional PD methods focused on teacher improvement through increased knowledge and how to apply that knowledge in teaching methods, Meesuk et al. (2020) posited the future of PD includes encouraging teachers to develop their skills through self-practice and constructing new knowledge and capacities rather than being merely the recipients of information from experts. Meesuk et al. asserted teaching is both a science (assessment) and an art (judgment) and must be developed equally and sustainably through PD that develops pedagogy and theory and is practiced through action research instruction.

From a conceptual standpoint, individual development is a lifelong process that includes physical, behavioral, cognitive, and emotional growth through self-efficacy in the form of self-

actualization (Bandura, 1993; Prabawani et al., 2020). Sustainable PD opportunities include equitable access to high-quality and lifelong learning for teacher educators, teachers, school leaders, and students (Nketsia et al., 2020). Shen (2008) wrote that people need to challenge themselves to change and improve their performance. Shen established both external and internal factors are needed to drive change and are not limited to teachers but include principals, superintendents, districts, universities, and colleges.

Shen (2008) suggested educators assume if A happens, then B will follow; if teaching happens, for example, then learning occurs, which limits the focus to personal accountability, beliefs, attitudes, and actions. Understanding the barriers to traditional or sustained PD is critical to bringing about inclusive knowledge, pedagogical practices, values, and vision (Nketsia et al., 2020). However, understanding the role self-efficacy plays in supporting behavioral change is equally important and addresses how to deal with dysfunctional inhibitions and defensive behaviors that negatively impact change (Bandura, 1977). The aim of PD and educational change has been established by a large body of research literature and points to the need for effective, dynamic, sustained professional learning opportunities, lifelong learning predicated on the knowledge of self-efficacy, and driven by the tenets of transformational leadership (Bandura, 1982; Burns, 1978; Darling-Hammond et al., 2017).

While most people would agree educational change is needed, the process and methods for bringing about that change have been the subject of considerable research (Jonasson, 2016). A. Khan et al. (2016) stated PD is the most frequent method used to bring about educational change. Piedrahita (2018) stated PD programs offer teachers the best possibility of impacting their instructional practice and at the same time meeting the demand society and governments have set for systems of quality education. School reform is not a new concept, and the pressure

to raise test scores led to the rapid selection of PD initiatives that called for the implementation of new knowledge and immediate change. Martin et al. (2017) found school reform is complex; new teaching behaviors and practices take time before taking effect in a teacher's routine and do not occur outside of the consideration of school culture, teacher efficacy, and the kind of PD attended, all of which impact the rate of change. Zimmerman et al. (2017) acknowledged PD about educational reforms serves as a bridge between the intended reforms required by policymakers and the daily practices, beliefs, and learning that happens in classrooms. Change and reform, however, cannot be fully realized without the consideration of increasing teacher self-efficacy and transformative learning support provided by the principal. Martin et al. concluded educational policy and PD together require future study to better understand the complicated process of enacting both. While teacher PD has been the focus of education research, with an emphasis on workplace conditions, instruction, and transfer of knowledge, studies of the relationship between the principal and PD, teaching quality, and student achievement are limited (Gaikhorst et al., 2019).

Counterargument

The topic of PD has been widely researched from various researcher lenses. Scholars have established PD does not always meet its intended goal of improving instructional practice and impacting student learning outcomes (Palmer & Noltemeyer, 2019). A counterargument to the body of literature places the focus on teachers and posits the principal's role in encouraging, managing, and developing PD is equally importance (Gaikhorst et al., 2019). Principals play an important role within their schools and influence effective school functions, student success, teacher satisfaction, and overall school culture (Ngema & Lekhetho, 2019). A teacher who has a strong sense of self-efficacy still requires the principal's support and assessment of the

pedagogical and subject matter needs of that teacher. Nordick et al. (2019) identified the principal's role in nurturing collective efficacy among teachers, which led to greater teacher effort. School leaders are also called on to support, facilitate, and increase teachers' willingness to implement curricular changes and foster a climate of continuous improvement (Brown & Militello, 2016; Ngema & Lekhetho, 2019).

A principal's leadership style affects the relationship with the stakeholders of the school, including teachers. Therefore, the principal must be knowledgeable about adult learning, curriculum, assessment, and PD to achieve a shared vision for success (Chalikias et al., 2020). Lastly, principals, due to their position, have the power to influence the form and function of PD within their schools based on the areas they have assessed and identified as needing change (Fisher & Carlyon, 2014). This counterargument posits an important area for further exploration as one of the important influencers of effective PD and educational change (Brown & Militello, 2016).

Chapter Summary

The contributions of researchers on the topics of teacher quality and student success, effective PD, self-efficacy, transformational leadership, and educational change and the confluence of this subject matter on the future of PD and student achievement are profound. The foundational work and impact of Bandura's (1977) theory of self-efficacy and Burns's (1978) theory of transformational leadership can be established as a starting point for designing and facilitating PD. Teaching, as determined by Ucan (2016), is a core profession not only because it makes all other professions possible but also because it "plays a key and pivotal role in support of the knowledge society and the transition to the changing future society" (p. 37).

Professional development, then, has been identified as essential to changing classroom

practice; affecting school improvement; elevating, not just meeting student outcomes; and bridging the gap between schools, policymakers, and educational change (Postholm, 2018; Zimmerman et al., 2017). Finally, considerable research has established the future of PD will undergo changes or enhancements and move toward sustainable development methods (Brandisauskiene et al., 2020). At the same time, the aims of PD remain the same: to increase teacher self-efficacy to influence teachers' perceptions of their ability to drive educational change to achieve higher quality learning and teaching; increase job satisfaction and professional fulfillment; and provide experiences that pull forth cognitive, verbal, vicarious, and performance accomplishments for teachers (Bandura, 1977). In doing so, teachers can provide students with the tools and skills necessary to thrive in the 21st century (Bandura, 1977; Barton & Dexter, 2019; Burns, 1978; M. Khan & Afridi, 2020; Postholm, 2018; Reza, 2019).

This qualitative exploratory case study explored how PD impacted teacher self-efficacy and teachers' perceptions of their ability to drive educational change. The topic of PD has been widely researched and is supported by a large body of literature. PD has been well established to be the preferred method used by districts and schools for teachers to gain knowledge and skills, yet little research has shown the traditional model of PD has had a significant impact on teachers' instructional practice or student outcomes. This qualitative case study explored how PD impacted teacher self-efficacy and teachers' perceptions about their ability to drive educational change in their classrooms and schools. The data collected and analyzed can be used by PD designers, administrators, teachers, and others to show effective PD can increase teacher self-efficacy and lead to educational changes in classrooms and schools. How traditional PD impacts teacher self-efficacy the impact PD and self-efficacy have on educational change were explored throughout the qualitative exploratory case study. The research may contribute to the design and

facilitation of future PD and educational change initiatives.

The following chapter describes why a qualitative case study method was well suited for this research because it contributes to the knowledge of an organization or related phenomena such as professional development (Yin, 2009). The exploratory case study allowed an in-depth exploration between the case and content in dynamic interactions over time (Marshall & Rossman, 2016). Professional development, teacher self-efficacy, teachers' perceptions of their ability to drive educational change are explained and examined in the following chapter. Two questionnaires and two focus groups were used to collect data, which were analyzed with thematic analysis. The final sections include an explanation of reliability and validity, the ethical procedures used in the study, and the chapter summary.

Chapter 3: Methodology

Teachers are the cornerstone of teaching and learning, and through instruction, position, skills, and abilities can bring about school improvement and educational change. Schools desire and rely on high-quality teachers (Zide & Mokhele, 2018). Professional development (PD) is often referred to as the professional learning opportunities teachers take part in to improve professional practice and student outcomes (Bowers, 2018). Additionally, teacher self-efficacy has gained an important role in education research as a determinant for effective teaching, instructional practice, and student achievement (Barni et al., 2019).

The problem is PD inadequately addresses the knowledge–practice gap that exists between teacher participation in PD, teacher self-efficacy, student learning, and educational change. The background of the problem is teachers are expected to adopt new curricula and teaching practices that will result in better student learning and outcomes, so when students fail to succeed, teachers are often considered responsible (Piedrahita, 2018). The extent of the problem is the failure to improve student outcomes or instruction is never considered to be a result of time constraints or ineffective PD models (Piedrahita, 2018).

The purpose of the qualitative exploratory case study was to explore how professional development impacted teacher self-efficacy and teachers' perceptions of their ability to drive educational change. The case study was based on the theory of self-efficacy (Bandura, 1982) and transformational leadership theory (Burns, 1978). The research plan, methodology, population and sample selection, instrumentation, data collection, and ethical concerns are primary components of Chapter 3. The following research questions were explored throughout the qualitative exploratory case study.

Research Question 1: How does a teacher's experience with effective professional

development impact teachers' instructional practice in K–12 schools?

Research Question 2: How does ineffective professional development impact teacher self-efficacy in K–12 schools?

Research Question 3: How do effective professional development and teacher self-efficacy impact teachers' perceptions of their ability to drive educational change in K–12 schools?

Research Methodology, Design, and Rationale

Professional development, teacher self-efficacy, and educational change are supported by qualitative research because of the broad approach to the study of social phenomena. As a method, qualitative research provides an experiential understanding of the interrelationships that exist among all things and people (Stake, 1995). Matherson and Windle (2017) identified what the most useful PD should be versus what the reality is for some teachers who attend workshops or meetings, and how these two realities converge for teachers, students, and outcomes.

Methodology

Marshall and Rossman (2016) concluded qualitative research is pragmatic, interpretive, and grounded in lived experiences of people. Qualitative research studies usually take place in the natural world, focus on context, draw on various methods that respect the humanity of the participants of a study, and are emergent and evolving rather than rigidly preconfigured (Marshall & Rossman, 2016). Braun and Clarke (2013) posited qualitative research uses words as data that are collected and analyzed in different ways. K. Liu et al. (2016) established teacher PD is more about teacher beliefs, assumptions, and lifelong reflective learning than training. Qualitative research seeks to understand and interpret perspectives and attitudes. Braun and Clarke wrote a fundamental component of qualitative research is that there is not one correct

version of knowledge or reality, even for the same participant who is closely tied to the context of an experience. The relationship between participants and context can be seen as fluid and reciprocal and influencing both directions (Braun & Clarke, 2013). A qualitative case study supports the study of a teacher's experiences, perceptions, and motivations, and application of learning when participating in PD.

The literature supported the notion effective PD consists of certain elements, and at the same time, should consider teachers' beliefs about the ability to develop skills and change instructional practices to bring about increased student achievement (Barni et al., 2019; Bates & Morgan, 2018; Palmer & Noltemeyer, 2019). Qualitative research allows a researcher to follow theoretical propositions that lead to the original goals and design of the study, the development of the research questions, and review of the literature (Yin, 2009). Bandura's (1982) theory of self-efficacy as a study of the mechanisms in human agency and Burns's (1978) transformational leadership theory as a proposition of transformative and organizational change were fundamental to the development of the data collection plan and relevant analytic strategies. A qualitative research design was well suited for the study based on the exploratory nature of a complex social phenomenon and system of PD and the effect on teacher self-efficacy and educational change.

Design

Yin (2009) identified three conditions for the use of a case study: (a) the purpose is to explore or answer how or why questions, (b) the observation or interactions have little control over the event being explored, and (c) the focus is on a concurrent phenomenon with a real-life context. The exploratory case study explored the effect of PD on teacher self-efficacy and teachers' perceptions of their ability to drive educational change. The research questions were designed to explore how and why effective PD impacted teacher self-efficacy and teachers'

perceptions of their ability to drive educational change. The teacher participants were asked to answer a questionnaire about teacher self-efficacy on their own before each focus group. During each focus group, the participants were asked about their experiences, attitudes, and perceptions about effective and ineffective PD and how both affected their self-efficacy. The outcomes of both PD and student achievement were influenced by the PD, and the efficacy of the PD was ultimately measured by the changes in teacher practice and in the classroom (Barni et al., 2019; Bowers, 2018; H. Liu & Li, 2018; McChesney & Aldridge, 2018).

As a research method, case studies have been used to contribute to existing knowledge of an organizational, individual, or social phenomenon (Yin, 2009). The complex system of PD is a time- and space-bounded system (Alpi & Evans, 2019; Tomaszewski et al., 2020), which supports the use of exploratory case study. A bounded system, as defined by Stake (1995), is an integrated system that may or may not be working well, with a purpose that may be irrational, but is still a system. Several mediating variables influence how PD, as a system of learning, affects classroom instruction and student outcomes (McChesney & Aldridge, 2018).

Marshall and Rossman (2016) provided the following guidelines for the use of an exploratory case study: investigate the misunderstood phenomenon, identify or discover important categories of meaning, generate hypotheses for further research, explain the patterns related to the phenomenon, identify plausible relationships shaping the phenomenon, describe the phenomenon and create opportunities and the will to engage in social action. These guidelines were applicable to explore the research questions included in the exploratory case study for the following reasons. The study of PD and the impact on teacher self-efficacy and teachers' perceptions about their ability to drive educational change generated a hypothesis for further research as 21st-century learning skills continue to evolve with the use of technology.

One can assume PD will be one of the mechanisms for teachers to acquire new knowledge and skills and to increase intrinsic motivation (H. Liu & Li, 2018).

Principals, teachers, and teacher preparation programs may need a better understanding of how PD and self-efficacy are intrinsically linked (Barni et al., 2019). The author gathered evidence about the perceptions and opinions of K–12 teachers and their beliefs about what makes PD effective. They explored the patterns related to the knowledge–practice gap that exists despite teachers having attended PD. Then, the study documented the effect of PD on teachers’ self-efficacy and educational change through the focus groups that asked teachers to engage in the social action of discussing their experiences, attitudes, and beliefs about PD (Barni et al., 2019; Bates & Morgan, 2018; King, 2016; Marshall & Rossman, 2016; Olupeliyawa et al., 2020; Palmer & Noltemeyer, 2019).

The study of the impact of PD on teacher self-efficacy and teachers’ perceptions of their ability to drive educational change justified the use of exploratory case study because the topic was relevant and meaningful not only to principals and superintendents but also to teachers, students, organizations, and people who design PD. Additionally, exploratory case study supported the use of research questions that focused on how to explore the incidence or prevalence of a phenomenon and was predictive about certain outcomes (Yin, 2009). Exploratory case study was used to explore how effective PD impacted teaching, how PD impacted teacher self-efficacy, and how PD impacted teachers’ perceptions of their ability to drive educational change.

Stake (1995) identified the following areas as possible constraints on time and resources: recruitment of participants, access and permission, data sources, time to analyze, and time to write the report. Stake suggested making a plan that would include not only the details of the

research but also the unforeseeable family or work constraints. To mitigate the time constraints of data analysis, the number of participants was set at a maximum of 20 which allowed for data analysis to be conducted over a 3-week period. Fugard and Potts (2015) suggested taking time to understand and study the purpose and process of thematic analysis is an important step in mitigating additional time constraints related to lack of knowledge. Lastly, uninterrupted time was scheduled daily to analyze the data and write the report.

Marshall and Rossman (2016) identified financial resources as a constraint, which includes equipment for transcription or data processing, printers, computers, books, cost of data analysis software, and an editor. Stake (1995) wrote researchers have too little time to organize the data that will be gathered and suggested leaving time for unanticipated data sources or emerging issues. Other constraints include the lack of sufficient participants, insufficient data collection, and time to establish a database for data analysis (Stake, 1995; Sutton & Austin, 2015). To ensure the required number of participants, 15, were available for the study, recruitment was done at two school sites and on LinkedIn. Sufficient data collection was critical to identifying patterns and themes about the participants' experiences with PD; therefore, two questionnaires and two focus groups were used, followed by member checks to ensure the accuracy of transcribed data.

Advantages and Benefits of Exploratory Case Study

Yin (2009) identified the following advantages of case study research design: the capacity to collect rich data and thick descriptions and retain holistic and meaningful characteristics of real-life events. Marshall and Rossman (2016) and Yin also stated case studies can offer important evidence to complement experiments and provide an explanation for how or why a treatment worked. Raeburn et al. (2015) identified two advantages for case study research:

the flexibility to be adapted to incorporate a mix of both quantitative and qualitative methods to ensure the best fit to explore research questions and the ability to support testing connections between theory and phenomena. Lastly, Yin wrote case study research is an all-encompassing research design method.

Role of the Researcher

A qualitative exploratory case study explores and conveys how and why thoughts and feelings affect behavior (Sutton & Austin, 2015). An exploratory case study was used to identify how teachers were affected by PD experiences and how those experiences impacted educational change and teacher self-efficacy. McChesney and Aldridge (2018) wrote about the importance of teachers' intrinsic motivation for participating in PD and the realities of the challenges teachers face in classrooms and with students. In addition to data collection, analysis, and management, a researcher plays different roles and in varying degrees in terms of participation and observation, which could include little to no interaction or full participation meant to build relationships and engage in social interaction. Researchers are called to consider the degree of participation in the study (Marshall & Rossman, 2016).

Yin (2009) wrote about preparing to collect case study evidence and the importance of identifying desired skills so as not to jeopardize the case study. Yin stressed putting aside the misconception that research will require a minimum number of technical skills and procedures, and the importance of data collection as a skill that requires practice and knowledge because the data are not routinized. Lastly, the necessary skills include the ability to ask good questions, be a good listener, be adaptive and flexible, have a deep knowledge of the topic or issue being studied, be unbiased, and not hold any preconceived notions (Yin, 2009). Stake (1995) identified the role of the researcher as teacher, advocate, evaluator, biographer, and interpreter, and

concluded of all the roles, the role of gathering interpretations and interpreting as central to the research. Acquiring these skills and understanding the role I played in the qualitative research study brought to life the belief that knowledge was constructed rather than discovered (Stake, 1995).

In the matter of the qualitative exploratory case study, I had no direct relationships or connections, either personal or professional, to the participants. One identified potential connection was the students at the high school where the research study was conducted. Precautions were taken to secure the well-being and anonymity of the participants by asking for anonymous responses and ensuring no risk of harm for any of the participants by securing all data that were collected.

All the preceding conditions would be negated if biases were left unidentified (Yin, 2009). To protect the integrity of the study, bracketing was used to identify vested interests, assumptions, personal experiences, cultural factors, and any preconceived notions that may have influenced data analysis (Fischer, 2009). Weatherford and Maitra (2019) wrote bracketing involves a complete change of perspective and is an active process that takes practice. To address and manage elements, including biases, that could undermine the reliability of the data and validity of the interpretations and conclusions, I kept a reflective journal. The journal included the reasons for conducting the research study, any assumptions regarding the research, and potential conflicts with study participants (Tufford & Newman, 2010).

Research Procedures

The population for the qualitative exploratory case study was K–12 teachers. The inclusion criteria included teachers who had at least 1 year of experience with the district- or school-selected PD in any of the following formats: (a) synchronous, (b) asynchronous, or (c)

face-to-face workshops. Additional inclusion criteria stated teachers had to be employed at the time of the study. Full-time and part-time teachers, without any age or discipline restrictions, were eligible (Archibald & Munce, 2016).

Population and Sample Selection

The participants came from the identified population by using criterion sampling (Palinkas et al., 2015). The sample size was 19 teachers. Creswell and Poth (2018) stated the number of participants should provide ample information and opportunity to identify themes in a single-case study. The 19 teachers provided enough information and insight to explore the research questions and identify themes and patterns in the data.

The inclusion criteria all participants were required to meet was a minimum of 1 year of participation or experience with teacher PD in a synchronous, asynchronous, or face-to-face workshop or class and teaching in a K–12 school at the time of the study. Both full- and part-time teachers, without any age, gender, or subject discipline restrictions, were accepted (Archibald & Munce, 2016). The exclusion criteria excluded new teachers without district- or school-selected PD experience and teachers who had PD experiences but were not teaching at the time of the study.

Purposeful sampling, as described by Palinkas et al. (2015), is widely used in qualitative studies for the identification and selection of information-rich cases related to a topic of interest. In the case of the present research study, teachers, as experts, were asked to describe experiences with PD, explain what would be considered effective PD, and describe how the PD affected instruction and student achievement. Benoot et al. (2016) wrote the power and logic of purposeful sampling lie in selecting information-rich cases to study a phenomenon in depth. In doing so, a researcher would be able to learn more about issues that are of central importance to

the problem and purpose of the study.

Recruitment

Recruitment is an important part of the research study. Archibald and Munce (2016) wrote participant recruitment is one of the most challenging and resource-intensive parts of qualitative research. Guided by the inclusion and exclusion criteria, participants were recruited through email and LinkedIn. Teachers from the selected school sites were then recruited using the invitation letter (see Appendix A) and informed consent form (see Appendix B) sent via the teacher's school email address.

Instrumentation

Focus Groups

Focus group discussion was used as a qualitative approach to gain an in-depth understanding of social issues (Nyumba et al., 2018). Braun and Clarke (2013) described focus groups as an interactive, moderately easy data collection tool to use. A focus group aims to obtain data from a purposefully selected group of participants (Nyumba et al., 2018). Creswell and Poth (2018) described a focus group as a group interview conducted in the same room or virtually via web-based or email platforms. A focus group was an appropriate tool for this study to collect data from the teachers' experiences, beliefs, thoughts, and perceptions about how PD impacts teacher self-efficacy and educational change. Creswell and Poth described the focus group as advantageous due to the interaction among the interviewees, which can result in quality information. Each focus group was guided by the questions derived from the purpose of the study and the research questions.

The focus groups occurred using Zoom, a videoconferencing and recording platform. Archibald and Munce (2016) reported previous participants' experiences using Zoom or other

videoconferencing platforms have been positive. The Zoom focus groups were securely recorded, and sessions were stored as a file on a labeled flash drive that was kept in a locked bag with a padlock in a file cabinet. Zoom offers a recording and downloading feature that was important to the protection of data and participants (Archibald & Munce, 2016). Zoom, as a videoconferencing tool, has been used extensively for research purposes (Lobe et al., 2020). Zoom allowed for audio/video recordings, was controlled by the host, and provided end-to-end encryption while enabled, ensuring all communication between the focus group participants in each session was encrypted using cryptographic keys recognizable only to the devices of the participants (Lobe et al., 2020).

Privacy and security measures were necessary to protect the integrity of the study and participant anonymity. Before each focus group session, each participant received a set of instructions for how to access Zoom. Before each focus group, participants were given the option to meet one time to ensure access and address any technical issues that could arise, but no one opted to meet because they were familiar with Zoom (Lobe et al., 2020). The Zoom videoconference link with a passcode for entry was emailed to all eligible participants. Waiting rooms to prevent what is known as Zoom-bombing were not needed because the join feature was disabled; the host verified each participant to add an extra layer of privacy and security for participants and data collection (Dos Santos Marques et al., 2021). The link to the focus group was shared directly with each participant via email 1 day before the focus group, and the meeting was locked once everyone had joined.

In a one-time 90-minute session, participants responded to questions taken from the Professional Development Questionnaire. The link to the Professional Development Questionnaire was put in the chat box and screenshared. The informed consent form notified

participants in advance the session would be recorded using Zoom and about the importance of confidentiality for all participants before and after the session; participants were reminded again during the session.

Questionnaire

The Teacher Sense of Efficacy Questionnaire was adapted to create open-ended questions (see Appendix C) and emailed to participants via a Google Form with directions to complete the questionnaire (Tschannen-Moran & Woolfolk Hoy, 2001). The second questionnaire, Professional Development Questionnaire (see Appendix D), was digitized on a Google Form so participants could respond orally during the focus group, and the link to the questionnaire was provided in the chat during the focus group session. The responses were transcribed and aggregated on a spreadsheet in Google Drive from a Gmail account that was created for this purpose and downloaded to a separate password-protected and labeled flash drive to ensure privacy and security, which will be kept in a locked bag with a padlock in a file cabinet for 3 years and then shredded or destroyed.

Instrument Validation

Four subject matter experts (SMEs) were asked to review the questionnaires. The first SME had a doctorate in educational leadership and was a professional learning specialist and director of technology and computer science. The next SME had a doctorate in educational leadership and administration and was the Apple education leadership executive. The third SME was an instructional designer/manager and a teacher trainer at a community college. The fourth SME was a former elementary school principal and now a human resource manager. An initial email was sent to each of the SMEs to ask for help in reviewing the questionnaires. Once a response was received, a second email was sent that included the questionnaires, the purpose of

the research study, and the request for feedback and comments. The final questionnaires (see Appendices C & D) were revised according to the feedback and comments received (see Appendix E).

Debriefing

A debrief statement showing the research study had ended (see Appendix F) was shown to the applicants via Zoom. The debrief statement included the name of the study, the goals and purpose of the study, what the research study explored, the research questions, participant withdrawal procedures, and information about when the findings of the study would be available. The debriefing also informed the participants about how to access the report upon completion and included the contact information for the chair and researcher and a note of thanks (Lafayette College, 2021).

Data Collection

Kadam (2017) wrote informed consent is the cornerstone of ethics in research. Obtaining informed consent from school district superintendents and participants is an important legal and ethical requirement. Informed consent does more than to provide participants with key information about the study. Participants are empowered to make rational decisions about choosing to participate in a study (Kadam, 2017). Once Institutional Review Board (IRB) approval had been granted, the invitation letter was emailed to all teachers at two K–12 schools. Teachers were asked to respond to the email regarding their decision to participate. Once teachers had responded to the form, the informed consent form was emailed to each teacher. The teacher was asked to electronically complete and sign the informed consent and email it back to the provided email address. The form was then printed and stored in a locked bag with a padlock in a file cabinet, and a list of all participants' information (informed consent form) was collected

on an Excel spreadsheet and assigned a number for use during the data collection and analysis throughout the dissertation process. This spreadsheet will be kept for 3 years and then shredded or destroyed. All questionnaires, notes, other written documents, the recordings of the online focus group sessions, the participants' signed informed consent forms, site permission documents, emails, and copies of all correspondence were downloaded or scanned and converted into PDF files and stored on password-protected flash drives kept in a locked file cabinet. All documents will be kept for 3 years and then shredded or destroyed.

The process of obtaining consent consisted of the following: participants received the informed consent form that provided the purpose of the study, the method for collecting data and the analysis, and expectations about participating in the study. Participants were given the opportunity to consent freely to participate or to decline and understood the right to remain anonymous and to verify the transcript about their responses. All participants were required to provide a written informed consent response before participating. All potential participants were given time to ask questions regarding the research and to address any concerns and told they could reach out to the researcher via email or cell phone. The informed consent explained procedures for maintaining confidentiality and anonymity before, during, and after the study. Participants were assured the data would be stored and secured in a locked file bag and kept in a locked file cabinet.

Site permission was solicited from two K–12 school districts (see Appendices G & H). A site permission request form was emailed to both superintendents describing the purpose of the study, number of participants, timeline for the data collection, and important contact information. One superintendent requested additional information, which was written as an addendum to the site permission form. The site permission form was obtained from the first superintendent once

the principals of the potential school sites agreed (see Appendix I). The second superintendent granted permission to use the school site (see Appendix J). The site permission forms were stored on a password-protected flash drive and kept in a locked box. In addition, a separate Google Drive was created for the compilation and storage of any research documents (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979).

Data Analysis

According to Stake (1995), data analysis is a matter of giving meaning to first impressions as well as final compilations. Analysis means taking something apart and constructing meaning (Stake, 1995). Case studies rely on direct interpretation of an individual instance and the aggregation of those instances (Stake, 1995). Data analysis was based on the theoretical propositions that led to the qualitative exploratory case study design and research questions (Yin, 2009). Data collected from the questionnaires and focus group recordings were analyzed using thematic analysis. Thematic analysis is a qualitative method used to uncover themes and patterns in responses and meanings (Fugard & Potts, 2015).

Preparing the data for analysis began with managing the two questionnaires and the Zoom recording by storing all completed questionnaires on a password-protected computer and encrypting the passcodes for the USB on which all digital data were stored. All paper questionnaires, memos, handwritten transcripts, and notes were kept in a fireproof and waterproof document bag. Reading and memoing were done during the initial stage of preparing the data up to the writing of the report (Creswell & Poth, 2018). The purpose of memoing was to document and identify key concepts, ideas, and short phrases as they occurred in the data to create descriptive summaries and synthesize them into higher level analytical meanings

(Creswell & Poth, 2018). The next step was to form the initial codes or categories through detailed descriptions, and to apply the codes, develop emerging themes, and generate interpretations (Creswell & Poth, 2018). The final step was writing and visualizing the data, which was done using Excel (Creswell & Poth, 2018).

Data analysis was guided by Braun and Clarke's (2006) six steps. The first step was to become familiar with the data, which included reading and rereading the responses to the questionnaires and the transcripts and writing down impressions. The next step was to generate initial codes to organize the data in a meaningful and systematic way. Coding reduced the large amount of data into smaller meaningful chunks (Maguire & Delahunt, 2017). The coding was based on theoretical thematic analysis and open coding. ATLAS.ti, a qualitative digital analytical software, was used to organize and visualize the data (Maguire & Delahunt, 2017).

The third step started the search for themes that captured significant or interesting data related to the research questions and identified categories of the themes (Maguire & Delahunt, 2017). The fourth step reviewed the themes. The themes were reviewed and modified to ensure they made sense, supported the data, and refined overlapping themes using both paper and ATLAS.ti software (Maguire & Delahunt, 2017). Step 5 included the final refinement of the themes to identify the core of each theme, and Step 6 included the write-up of the report and the creation of tables or matrices to represent the data (Maguire & Delahunt, 2017). The data were organized by aligning each of the themes with the questionnaires and the research questions. This process was done on a spreadsheet that included each typed question, the research questions, a bulleted list of responses taken from the questionnaires in words and phrases, quotes with the participant number, numbers that corresponded with phrases that were taken from the Directions for Scoring the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk

Hoy, 2001), and lastly, some notes and observations as patterns and themes started to emerge (Creswell & Poth, 2018). This information became the final themes for the data analysis and findings of the study.

Reliability and Validity

All research is concerned with generating reliable and valid knowledge in an ethical way (Merriam & Tisdell, 2016). The applied nature of social science inquiry requires that researchers and others can trust the way the research study was conducted and the results or findings (Merriam & Tisdell, 2016). To ensure credibility, dependability, transferability, and trustworthiness, the data were corroborated by verifying the data through bracketing, reflexivity, intentional and thoughtful use of the thematic analysis, member checks, thick descriptions, and triangulation (Candela, 2019; Fischer, 2009; Korstjens & Moser, 2018; Nowell et al., 2017; Ponterotto, 2006; Weatherford & Maitra, 2019; Williams & Moser, 2019).

Credibility is confidence in the truth of the findings taken from the data analysis. Credibility identifies whether the research findings present reasonable information taken from the participants' data and offer an accurate interpretation of the participants' views (Korstjens & Moser, 2018). Credibility for the study was established using triangulation, member checks, bracketing, and reflexivity, detailed as follows (Korstjens & Moser, 2018).

Dependability is considered the stability of the findings over time and involves the participants' feedback of the findings, explanation, and recommendations of the data as supported by the data and findings collected from the study (Korstjens & Moser, 2018). Dependability was achieved over the course of the study through an audit trail. Research notes were consistently kept for each step of the research. The notes included decisions made during the research process, the focus groups, questionnaires, reflective thoughts, sampling, and any

other decision that came up. Doing so provided transparency along the research path (Korstjens & Moser, 2018).

Reflexivity was fundamental to the research study audit trail (Nowell et al., 2017). A reflective journal was kept as a method of critical reflection throughout the research study as a means of capturing both internal and external dialogue. The journal was also used to record personal reflections and ideas about the data collection, analysis, and interpretation (Nowell et al., 2017). In addition, confirmability was established through a neutral and subjective interpretation of the data in conjunction and alignment with the audit trail.

Member checks were an integral part of establishing credibility and dependability and were used to elicit participants' feedback about the credibility of the transcribed data, findings, and interpretations (Candela, 2019). Upon the analysis and transcription of the data, the teachers received a copy of the transcribed responses via email. Member checking was used to verify the description of the data was complete and realistic, themes were accurate, and interpretations were representative and fair, and to encourage other possible interpretations (Candela, 2019; Yin, 2014). The participants were asked to provide comments or annotations to the document and to email the completed form back to the researcher. Creswell and Poth (2018) noted member checks are critical to establishing credibility because the data, analysis, interpretations, and conclusions are taken back to the participants so they can judge the credibility and accuracy of the report.

Triangulation was done using memoing to keep an audit trail and document and identify key concepts, ideas, and short phrases in the data (Creswell & Poth, 2018). ATLAS.ti was used for preliminary coding, and an Excel spreadsheet was used to maintain an organized data set that corresponded with labeled columns. The Excel spreadsheet showed the chain of evidence and

included the case study report, citations to support specific codes and/or themes, and the research questions. All information related to the research study was available for retrieval as needed (Creswell & Poth, 2018; Stake, 1995). Lastly, reliability was established using the theory of self-efficacy (Bandura, 1982) and transformational leadership theory (Burns, 1978).

Transferability refers to the extent to which the research findings can be transferred to other contexts or settings with different participants (Korstjens & Moser, 2018). To ensure transferability, thick descriptions were written to present a descriptive and accurate representation of the social action of the participants during the focus groups. The context and specifics described the participants' thoughts, motivations, beliefs, and assumptions about teacher self-efficacy and PD (Ponterotto, 2006). Describing the setting and procedures, which included teachers' PD events, in detail provided a context for understanding the study's results. Using thick descriptions did not compromise the anonymity of the participants but facilitated the reader's ability to visualize the experiences and stories collected as data from the teachers (Ponterotto, 2006).

Data were collected from two questionnaires and two 90-minute focus groups. Thematic analysis of the data established trustworthiness through prolonged engagement with the data, reflective journaling, detailed notes about development, established order of concepts and themes, and participant debriefing. Open and inductive coding and themes can be supported by existing literature or sources to provide validity and trustworthiness (Creswell & Poth, 2018; Williams & Moser, 2019).

Bracketing leads to trustworthiness and rigor of research, which involves opening the mind and changing perspectives through the active identification of preconceived notions (Weatherford & Maitra, 2019). Bracketing helped to identify biases, judgments, personal

experiences, assumptions, or preconceived ideas or beliefs about teacher self-efficacy and PD (Fischer, 2009; Weatherford & Maitra, 2019). Bracketing ensured data collection and analysis were viewed from a fresh perspective. Taking the time to revisit and review the data, and to choose the appropriate language to present the findings, was done throughout the research study (Fischer, 2009; Weatherford & Maitra, 2019).

Ethical Procedures

The reliability and validity of a study depend on the ethics of the researcher and the research study (Merriam & Tisdell, 2016). Planning and conducting an ethical study require rigorous consideration and solutions for all anticipated and emergent ethical issues within a study. The principles guiding the research study were respect for persons, concern for welfare, and justice (Creswell & Poth, 2018).

The first protective principle as noted in *The Belmont Report* was respect for persons, also known as human dignity, which states participants' autonomy must be protected while ensuring full disclosure of all factors of the research study (Barrow et al., 2020; National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). To gain support and trust from the participants, the purpose of the study was fully explained in the informed consent and invitation letter (see Appendices A & B). The informed consent and invitation letter allowed the participants to freely choose to participate in the research study based on the purpose and procedures used for data collection and analysis and included important contact information for participants who wanted to ask questions or obtain clarification (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979).

The second principle noted in *The Belmont Report* was beneficence, which refers to

acting with the benefit of others while promoting their welfare and safety (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). To ensure the participants' freedom from harm and discomfort, all participants voluntarily gave their consent to autonomous decision making as they responded to the focus group questions (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979; Sim & Waterfield, 2019). Both questionnaires were written and adapted without deception about the research questions and nature of the study (Creswell & Poth, 2018). Participants were notified again that the Zoom session would be recorded and were asked to give their consent by typing their name or the word yes in the chat. Response validation was also used in the form of member checks to ensure participant welfare and protection from exploitation and harm (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979; Sim & Waterfield, 2019).

The third principle in *The Belmont Report* was justice, which pertains to participants' right to fair treatment and right to privacy (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979; Sim & Waterfield, 2019). Participants were selected via criterion sampling, which established inclusion criteria for eligible participants so as not to exclude any group and to be as representative of the entire population of teachers as possible (Sim & Waterfield, 2019). Any participant who wished to decline participation in the research study was treated without prejudice or malice. The right to privacy falls under the principle of justice (Sim & Waterfield, 2019). To protect the identity, right to privacy, and confidentiality of participants, all participants were reminded all shared information collected from the questionnaires and focus groups would be treated with the strictest confidentiality and protected with sound storage procedures. Participants were also reminded of the imperative for

confidentiality throughout the study, including the Zoom videoconferencing session, in the informed consent, at the beginning and close of each focus group, and throughout the member-check process.

Participant recording, screen sharing, and file transfer were disabled to help promote confidentiality. Lastly, the link and password to each focus group were shared directly with each respective participant the day before the focus group session, and the meeting was locked once everyone had joined (Dos Santos Marques et al., 2021). All information shared off-the-record was removed from the analysis of the data (Braun & Clarke, 2013).

A number was assigned to each participant to protect participants' identities and to ensure anonymity in data analysis and written reports. The same number was used across all documents. All questionnaires, notes, other written documents, recordings of the online focus groups, participants' signed informed consent forms, site permission documents, emails, and copies of all correspondence were downloaded or scanned and converted into PDF files and stored on password-protected flash drives. All information related to the research study was available for retrieval as needed in a manner that protected all participants (Creswell & Poth, 2018; Stake, 1995).

Chapter Summary

The problem statement, purpose, and research questions led to the design and rationale for the exploratory case study of how PD impacts teacher self-efficacy and educational change. The research plan began with the selection of the methodology and design and was carefully constructed to ensure all procedures were followed and methods were used to ensure an ethical research study was conducted. Specifically, protection and self-determination for all participants was included in the informed consent. Procedures such as member checks, bracketing, and

memoing were included to ensure ethical research protocols. Selection of a database, well-thought-out storage, and protection of data procedures were identified to ensure reliability and validity (Braun & Clarke, 2006; Creswell & Poth, 2018; Krueger & Casey, 2015; Nyumba et al., 2018).

Yin (2009) wrote the essence of a case study is to illuminate a set of decisions or experiences—why they were made, how they were implemented, and with what result. The exploratory case study explored how PD, as a set of decisions, affects teacher self-efficacy and educational change. The following chapter reports on the findings and data analysis results.

Chapter 4: Research Findings and Data Analysis Results

Teachers are the cornerstone of teaching and learning, and through instruction, position, skills, and abilities can bring about school improvement and educational change. Schools desire and rely on high-quality teachers (Zide & Mokhele, 2018). Professional development (PD) is often referred to as the professional learning opportunities teachers take part in to improve professional practice and student outcomes (Bowers, 2018). Additionally, teacher self-efficacy has gained an increasingly important role in education research as a determinant for effective teaching, instructional practice, and student achievement (Barni et al., 2019).

The problem is PD inadequately addresses the knowledge–practice gap that exists between teacher participation in PD, teacher self-efficacy, student learning, and educational change. The background of the problem is teachers are expected to adopt new curricula and teaching practices that will result in better student learning and outcomes, so when students fail, teachers are often considered to be responsible (Piedrahita, 2018). The extent of the problem is the failure to improve student outcomes or instruction is never considered to be a result of time constraints or ineffective PD models (Piedrahita, 2018).

The purpose of the qualitative exploratory case study was to identify how professional development impacted teacher self-efficacy and teachers' perceptions of their ability to drive educational change. The case study was affirmed by the theory of self-efficacy (Bandura, 1982) and transformational leadership theory (Burns, 1978). Data collection, data analysis and results, and reliability and validity are primary components of Chapter 4. The following research questions were explored throughout the qualitative exploratory case study.

Research Question 1: How does a teacher's experience with effective professional development impact teachers' instructional practice in K–12 schools?

Research Question 2: How does ineffective professional development impact teacher self-efficacy in K–12 schools?

Research Question 3: How do effective professional development and teacher self-efficacy impact teachers' perceptions of their ability to drive educational change in K–12 schools?

Data Collection

Arcelay-Rojas (2018) wrote focus groups embody a carefully crafted discussion to collect participants' perceptions on a given topic. Focus groups often have similar characteristics wherein the focus group moderator gains an in-depth understanding of the psychological and sociocultural perceptions of the participants about a particular topic (Arcelay-Rojas, 2018; Nyumba et al., 2018). Zoom, an online platform, can be used to conduct focus groups with ease and convenience (Santhosh et al., 2021). Santhosh et al. (2021) found the flexibility of videoconferencing may allow researchers to recruit participants by removing the need for travel, transportation, and time barriers. Videoconferencing allows the researcher to see the participants, identify who is muted, and interpret body language. Lastly, participant recruitment and data collection are likely to be done by email and by sharing documents or questionnaires used in a study through online platforms such as Google or Microsoft OneDrive (Santhosh et al., 2021).

Qualitative research, such as an exploratory case study, with human participants, requires IRB approval, which was obtained for this study on January 10, 2022 (see Appendix K). The participants for the qualitative exploratory case study were 19 K–12 teachers. The recruitment process was done within two school districts and on LinkedIn. Recruitment for the exploratory case study began on January 11 and ended on April 4, 2022. Sixty-five invitation emails were sent to elementary, middle, and high school teachers. The email contained a short introduction

and the invitation letter (see Appendix A). Twenty-four teachers responded, but only 19 participated in the exploratory case study. Each time one of the teachers responded to the email and accepted the invitation to participate, the informed consent form was emailed with directions about how to sign and return the document. Twenty-one participants signed and returned the informed consent form, but only 19 participated in the focus groups. The last informed consent form was signed and returned on April 4, 2022.

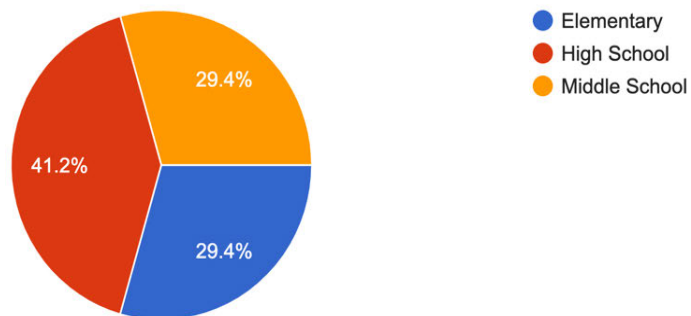
A researcher-designed questionnaire was used to conduct the focus groups and an adapted questionnaire was used to collect data about teachers' sense of efficacy. All interview questions were aligned with the literature on PD and teacher self-efficacy. Bracketing and reflexivity were done before and after the focus groups and during the analysis of the responses to the Teacher Sense of Efficacy Questionnaire to identify any biases, preconceived ideas, and judgments (Nowell et al., 2017; Weatherford & Maitra, 2019).

The sampling of participants consisted of 21 teachers, but only 18 responded to the Teacher Sense of Efficacy Questionnaire—two male teachers and 16 female teachers; five elementary, five middle school, and eight high school teachers; 14 subjects taught ranging from English to performing arts (see Figures 1-3); and teaching experience from 1 to 30 years (Table 1).

Figure 1*Participant Grade Level*

What level do you teach?

17 responses

**Figure 2***Participant Gender*

What is your gender?

18 responses

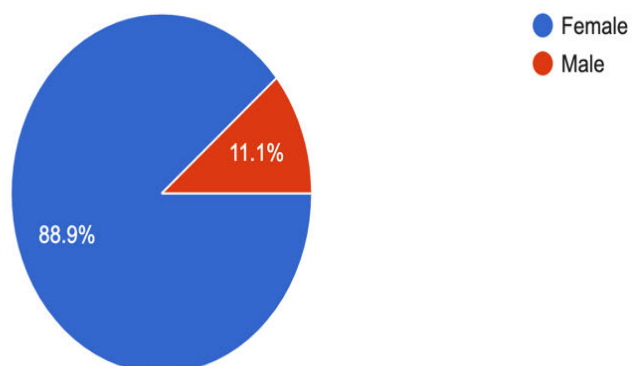
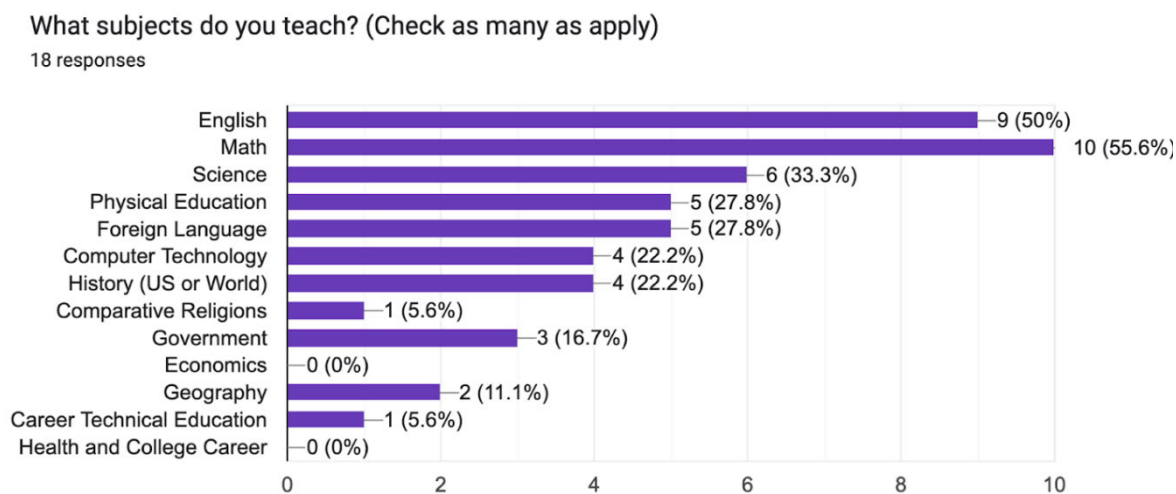


Figure 3*Participant Area of Expertise***Table 1***Demographic Information*

Teaching experience	<i>n</i>
Number of years teaching	
0-5	4
6-11	2
12-17	3
18-23	6
24-30	3
Grade band	
Elementary	5
Middle	5
High	8

The first data collection tool, the Teacher Sense of Efficacy Questionnaire, was emailed to participants as soon as the informed consent was signed and returned. The completed forms were collected as follows: (a) 10 forms were collected February 15–27, 2022; (b) 3 forms were collected on March 5, 2022; and (c) 5 forms were collected April 19–27, 2022 (see Table 2).

Table 2

Data Collection Timeline

Data collection instrument	Date	No. respondents
Teacher Sense of Efficacy Questionnaire	February 15–27, 2022	10
	March 5–30, 2022	3
	April 19–27, 2022	5
Total		18
Focus group	April 20, 2022	11
	April 27, 2022	8
Total		19

The responses to questions were collected automatically on a time-stamped Google spreadsheet and represented in pie charts, bar graphs, and typed responses for each participant. The final responses and data were downloaded to the password-protected flash drive used for the exploratory case study.

The second data collection tool was the focus groups, which took place on April 20 and April 27, 2022. The first 90-minute focus group was conducted via a recorded Zoom session with 11 participants; the second 90-minute focus group was conducted via a recorded Zoom session with eight participants. Participants verbally responded to the Professional Development

Questionnaire, which consisted of eight questions (see Appendix D). Both recorded Zoom sessions were downloaded and saved on a password-protected flash drive used for the exploratory case study.

Data Analysis and Results

Data analysis is critical for credible qualitative research (Maguire & Delahunt, 2017). Thematic analysis is the process of identifying patterns or themes within qualitative data and offers a robust method for qualitative data analysis (Braun & Clarke, 2022). According to Braun and Clarke (2022), thematic analysis provides a method for developing, interpreting, and analyzing patterns from qualitative data sets. The systematic process includes six steps: (a) familiarizing oneself with the data and identifying items of potential interest, (b) generating initial codes, (c) searching for themes, (d) reviewing potential themes, (e) defining and naming themes, and (f) generating the report (Clarke & Braun, 2014).

Per Fugard and Potts (2015), thematic analysis is a qualitative method for uncovering patterns within data to identify a collection of themes within a data set. The process goes beyond counting words or phrases to identifying themes. The first phase of thematic analysis is familiarization of the data, which involves the researcher immersing themselves in their data set (Clarke & Braun, 2014).

Before analyzing the responses, the Teacher Sense of Efficacy Questionnaire was aligned with Tschannen-Moran and Woolfolk Hoy's (2001) directions for scoring the responses from the Teacher Sense of Efficacy Scale to identify alignment with the exploratory case study's research questions. During this phase, the Teacher Sense of Efficacy Questionnaire responses were read and reread, then highlighted, and emergent codes were identified using thick descriptions, describing both behavior and context, and listed on an Excel spreadsheet for each question

(Korstjens & Moser, 2018). The questions from the Professional Development Questionnaire were triangulated with both the Teacher Sense of Efficacy Questionnaire and the research questions and with the Teacher Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001). Throughout the data analysis reflexivity was used to journal personal reflections and insights, and records, notes, tables, and recordings were stored to create an audit trail (Nowell et al., 2017).

Familiarization is followed by a thorough and systematic process of coding the data to generate the initial codes (Clarke & Braun, 2014). Codes provide the building blocks of analysis and reflect the data-derived conceptual interpretations of the data. According to Braun and Clarke (2013), coding is the practice of identifying parts of the data that relate to your research questions.

Generating initial codes was followed by searching for themes (Clarke & Braun, 2014). Searching for themes included the process of complete coding, which was used to identify anything that had relevance to the research questions within the 30 pages of transcribed data and the Teacher Sense of Efficacy Questionnaire response data. Per Braun and Clarke (2022), codes and coding labels can shift during the coding process and can connect to more than one segment of data. Coding is an evolving process that should not only identify differences but also begin to show patterns and similarities. Through a process of highlighting, copying, and pasting, a final set of emergent codes per question was identified and recorded on the spreadsheet.

Searching for themes was followed by reviewing potential themes (Clarke & Braun, 2014). Checking the emergent codes in relation to the research questions and the entirety of the data set included several rereads, color-coding the codes, and selecting words that identified potential themes on the spreadsheet. During this process, semantic codes, explicitly stated ideas

relevant to answering the research questions, were identified, copied, and pasted into the potential themes column (Braun & Clarke, 2022).

Defining and naming themes followed the searching for themes step. According to Clarke and Braun (2014), this step is where the most substantive, interpretive, and analytic work is done and where the researcher produces and deciphers a complex set of definitions and a process for determining each theme. The coding process began on March 20, 2022, with the Teacher Sense of Efficacy Questionnaire responses and ended on May 16, 2022, with the following final themes recorded:

1. Teachers have clear conclusions about their experiences with highly effective professional development.
2. Teachers understand professional development has a positive and significant impact on instruction, student engagement, outcomes, and educational change in multiple ways.
3. Teachers had clear opinions about what constituted ineffective professional development, how it made them feel, how it impacted their self-efficacy, and how it made them think about their teaching.
4. Barriers to professional development do exist and come from the kind of professional development that is chosen, who chooses it, and how it is facilitated.
5. Teachers understand professional development is an important part of an educator's career that can both positively and negatively impact teachers' and students' self-efficacy and teachers' perceptions about their ability to drive educational change.

The analytical focus shifted from coding to identifying and determining themes (see Table 2). According to Braun and Clarke (2013), a theme signals both the content of the data and

the analytical determinations of the data. This juncture of the analysis included rereading the emergent and collapsed codes and potential themes and engaging with the three to find similarities of meaning, clustering together the connected codes, aligning and evaluating the codes against the research questions, and identifying patterns and refining the initial themes (Braun & Clarke, 2022; Maguire & Delahunt, 2017). The final refinement of the themes aimed to capture the essence of what the data showed each one was about, how they interacted, and how they answered the research questions (Braun & Clarke, 2022; Clarke & Braun, 2014; Maguire & Delahunt, 2017).

Table 3*Data Analysis*

Theme	Participant quotes	Emergent phrases/codes	Codes
1. Teachers have clear conclusions about their experiences with highly effective professional development.	“PD that is focused on one overarching theme like literacy and being able to talk to teachers that understand literacy is in all subjects, so we took ideas away from that about how we can use those strategies in our classrooms.” (P9)	Increases SEL [social-emotional learning] for both students and teachers increases student engagement, enhances focus, solves problems, pushes me to work with others, inspires me to reflect on what works, self-awareness	Teachable moments, sharing lessons, feedback, classroom tours Lifts your affective filter because you are learning from somebody, and it’s meaningful Working with people and doing the same job but each has different strengths and opportunities Timely and relevant

Theme	Participant quotes	Emergent phrases/codes	Codes
	“PD makes me a better teacher, gives me more skills. I am happier and have increased satisfaction.” (P12)	PD that allows for collaboration increases better discipline, shared ideas, planning, and feedback about things that worked in the classroom	Coverage for teachers Facilitators that are highly effective Active learning
	“PD should increase our knowledge of pedagogy so we can fill in the gaps in learning.” (P11)	We take ideas away from PD about how we can use those strategies in our classrooms	Gives me the confidence to design more active learning type lessons, group work, and collaborative projects
		Watching someone else teach helps us	
		PD that includes individual choice	
		Is timely	
2. Teachers understand professional development has a positive and significant impact on instruction, student engagement, outcomes, and educational change in multiple ways.	“Teachers have different needs and PD comes at different times, so it should develop our self-efficacy and skills, so we help increase the efficacy of the students.” (P6)	Develops teachers	
		Provides tools to help students, monitor emotions	Good PD gives you a passion for teaching and for what you do in the classroom
		Pushes me to keep learning when I get frustrated	Good PD shows me how to keep going when I make mistakes which I model for my students
		Working with people and doing the same job but each has different strengths and opportunities	

Theme	Participant quotes	Emergent phrases/codes	Codes
	<p>“Effective PD helps us to explain standards-based grading to parents and respond to tough questions.” (P5)</p> <p>“Collaborative PD allows teachers to work with other teachers that are doing the same job, but each has different strengths and opportunities.” (P1)</p>	<p>Working with teachers in other disciplines helps us to see different challenges and how those teachers are addressing the problems, bounce ideas off other teachers is important</p> <p>Walk-throughs on a weekly or monthly basis, instead of teacher meetings</p> <p>Working with a group means it’s not just you are making decisions</p> <p>All on the same page</p> <p>Constructive criticism</p> <p>Observations from principal with effective and concrete feedback</p> <p>Facilitators that are highly effective</p>	<p>PD gives me a model to go off when I want to make changes in my instruction or discipline</p> <p>PD and SE 100% increase my job satisfaction because I can apply what I learned successfully</p> <p>I can use different models such as project-based learning or skills-based instruction</p> <p>Students model a growth mindset when they understand more about SE</p>

Theme	Participant quotes	Emergent phrases/codes	Codes
3. Teachers had clear opinions about what constituted ineffective professional development, how it made them feel, how it impacted their self-efficacy, and how it made them think about their teaching.	“It’s an emotional roller coaster for me because I don’t have time for collaboration, and when I feel stuck, I have a hard time figuring out what to do, so I go back to what I know.” (P19)	<p>Provides a background, professional growth, need to learn more about self-efficacy and how to practice it</p> <p>Gives you a passion for teaching and for what you do in the classroom, which is contagious and can enhance self-efficacy</p> <p>SE [self-efficacy] lifts your affective filter because you are learning from somebody, and it’s meaningful</p> <p>I feel more comfortable teaching a new subject because of the number of years I have taught</p> <p>The higher the SE, the higher the job satisfaction</p> <p>Praise teachers more to increase SE</p> <p>Feedback affects students</p>	<p>Teachers described feeling devalued, apathetic, unmotivated, tired, bored, and angry</p> <p>PD that is uniform and does not apply to my discipline and participants are doing their own thing</p> <p>There’s always room for improvement, we want to get better</p> <p>How can you measure the value of what you’ve learned if you can’t integrate it into your classroom?</p> <p>How can we expect our students to learn if we are teaching in the same way as our PD and how does doing so affect the students’ SE?</p> <p>SE is the engine for everything</p>

Theme	Participant quotes	Emergent phrases/codes	Codes
4. Barriers to professional development do exist and come from the kind of professional development that is chosen, who chooses it, and how it is facilitated.	<p>“PD is meant to remove any barrier to implementation of new skills and to increase self-efficacy.” (P15)</p> <p>“When PD is a one-day workshop of very short, it’s overwhelming because I can’t remember anything and I feel like I wasted my time.” (P4)</p>	<p>I wish PD wasn’t a box to be checked off</p> <p>We often teach for witnesses in our own classrooms</p> <p>I attend Pd to increase my self-efficacy to help others</p> <p>Timing</p> <p>Inauthentic teaching PD is just a matter of facilitation</p> <p>PD without accountability</p> <p>PD that is not related to my subject matter is a waste of time</p> <p>PD should not be before or after school</p> <p>No more books on shelves</p> <p>PD that is too long</p>	<p>Provide teachers with a reason for the PD and let us be part of the decision making</p> <p>I don’t like to take part in PD when I am supposed to be teaching because it’s more work for me and it’s not fair to the students</p> <p>Consider my needs before you send me to PD</p> <p>PD that is too short or too long</p> <p>Pay teachers for outside PD</p> <p>No drive-through PD</p> <p>Presented information that we could have read on our own</p> <p>Too many PowerPoints</p>

Theme	Participant quotes	Emergent phrases/codes	Codes
5. Teachers understand that professional development is an important part of an educator's career which can both positively and negatively impact teachers' and students' self-efficacy and teachers' perceptions about their ability to drive educational change.	<p>"The higher the SE, the higher the job satisfaction because things are like second nature." (P5)</p> <p>"It lifts your affective filter because you are learning from somebody and it's meaningful, working with people and doing the same job but each has different strengths and opportunities." (P14)</p> <p>"I'm a better teacher today because of the PD." (P10)</p> <p>"PD reinforces a way to focus on the needs of the students and at the same time to advocate for myself as the teacher and adapt to trial and error to use my SE to model persistence." (P15)</p>	<p>Admin should look at PD as an investment in teachers for students, skills, and support for new programs and technology, teachable moments, sharing lessons, getting feedback, classroom tours</p> <p>PD that is focused on one overarching theme like literacy and being able to talk to teachers that understand literacy is in all subjects</p> <p>Good PD allows us to dig deeper</p>	<p>PD enhances SE</p> <p>PD that raises the teacher's level of professionalism</p> <p>The facilitator was highly effective, kept in touch with me, and provided useable resources</p> <p>Clear and deliberate information</p> <p>Time to dig in deeper and collaborate with grade level teachers</p> <p>Students reap the benefits of teachers who create learner-centered environments</p> <p>PD that helps us to see how other teachers are struggling and provides way to address those challenges</p>

To answer the three research questions regarding what effective and ineffective PD meant to the participants and its impact on teacher self-efficacy and their perception of their ability to

drive educational change, the analysis of the data resulted in the development of five themes: (a) teachers have clear conclusions about their experiences with highly effective professional development; (b) teachers understand professional development has a positive and significant impact on instruction, student engagement, outcomes, and educational change in multiple ways; (c) teachers had explicit opinions about what constituted ineffective professional development, how it made them feel, how it impacted their self-efficacy, and how it made them think about their teaching; (d) barriers to professional development do exist and come from the kind of professional development that is chosen, who chooses it, and how it is facilitated; and (e) teachers understand professional development is an important part of an educator's career that can both positively and negatively impact teachers' and students' self-efficacy and teachers' perceptions about their ability to drive educational change.

Research Question 1

Research Question 1: How does a teacher's experience with effective professional development impact teachers' instructional practice in K–12 schools?

The data showed teachers have clear feelings and conclusions about their experiences with highly effective PD and its impact on their instructional practice in the K–12 setting. Furthermore, the responses and patterns identified a positive association between effective PD and enhanced instructional strategies. PD 4 stated:

Effective PD makes instruction easier and better; students are happier when I implement new instructional strategies or use new technology.

The data showed teachers felt effective PD created opportunities for teachers to collaborate with other teachers to enhance their instructional practice with new knowledge and skills they obtained, which increased student engagement and often addressed classroom

management concerns. The data also showed teachers believed if their instructional practices were improved, and they had the knowledge to make changes or implement new technology, for example, they felt satisfied, had confidence, and were able to seek help from their peers. P11 stated:

Collaboration is increased with better discipline, shared ideas, planning, feedback about things that worked and didn't work.

Eighteen of the 19 participants related their experiences with effective PD as positively impacting their instructional practice for K–12 students. The data included the following similar patterns the teachers believed made PD effective: (a) the level/ability of the facilitator; (b) the timing of the PD; (c) personalized or differentiated PD, relevant to grade-level, standards-based, active learning, collaborative; and (d) PD that brought up the level of teacher professionalism. P12 stated, "I've attended PD where the facilitator was highly effective and very knowledgeable, she gave us resources and stayed in contact with us for 1 month after the first PD. This helped."

When these patterns were present in the PD, the participants stated they felt more comfortable differentiating instruction, designing formative assessments, gamifying the classroom, and implementing new instructional strategies that were learned in the PD. P10 shared the following statement with the group:

I am a better teacher today because of the PD, the collaboration, and teachers have helped me with transitions and educational change. I modeled and learned from my own mistakes and saw that learning is a process so students can see that for themselves.

All participants expressed a desire to be part of the decision making when it came to attending PD, as shown in the following statement from P1:

Consider my needs before you send me to PD and allow me to choose how I want to take

PD; asynchronous would be my preference.

They understood the value of PD and its impact on their classroom and instructional practice. The data showed teachers know PD helps them to connect with other teachers and fosters discussion outside of PD where the true nature of self-efficacy can be seen. Furthermore, they stated effective PD expanded their knowledge of pedagogy to fill in the learning gaps, built their confidence, and had to be relevant to what was happening in the classroom. A high school history teacher, shared the following statement with the group P1 stated:

Professional development fosters discussion outside of PD where true self-efficacy is seen because teachers are doing it on their own, seeking information and looking at research, and contributing to school culture.

Matherson and Windle (2017) studied what teachers want in PD and found teachers often feel like they survived another session or seminar and wished the information could have been sent in an email. Greater attention is being given to PD, and researchers recognize PD is essential to changing classroom practice, yet teachers still attend the same kind of PD, which often has little effect on change (Gast et al., 2017; Postholm, 2018). With that in mind, the following theme was developed from the emergent patterns in the data: Teachers understand professional development has a positive and significant impact on instruction, student engagement, outcomes, and educational change in multiple ways.

Eighteen of the 19 participants demonstrated an understanding of how effective PD has a positive impact on instruction, student engagement and outcomes, and educational change, and stated continuous learning was important. All participants conveyed effective PD increases self-efficacy and was intertwined with their ability to improve student achievement and satisfaction; many attributed this to the confidence in being able to identify instructional strategies that

increased student engagement, created a culture of learning where mistakes are welcomed by both teacher and student, and encouraged students to become experts through active learning and differentiated lessons attributed to effective PD experiences. P7 stated:

Good professional development gives you a passion for teaching and what you do in the classroom which is contagious in the building.

The data elucidated the following consistent patterns: effective PD sessions provided relevant resources (better if it was specific to their grade level); teachers felt like they became the student and understood the importance of sound instruction, planning, and engagement; active learning makes a difference; collaborating with peers was essential; using research-based best practices that were broken down for teachers to take back to their classrooms; and attending workshops that were spread out over time rather than just 1 day. P3 stated

PD that is focused on one overarching theme like literacy and being able to talk to teachers that understand literacy is in all subjects, so we took ideas away from that about how we can use those strategies in our classrooms.

Research Question 2

Research Question 2: How does ineffective professional development impact teacher self-efficacy in K–12 schools?

According to Darling-Hammond et al. (2017), the quality of PD has implications for its overall effectiveness in enhancing teacher practice. Both barriers and poor design can fail to produce desired outcomes. Therefore, it is necessary to identify how teachers can be affected by ineffective PD. The analysis of the data set answered Research Question 2. The second theme was developed based on the emergent patterns found in the data. Teachers had explicit opinions about what constituted ineffective PD, how it made them feel, how it impacted their self-

efficacy, and how it made them think about their teaching.

Seventeen of the 19 participants demonstrated an understanding of how ineffective PD impacted their self-efficacy and how it made them feel. P4, a high school teacher, stated:

I don't like professional development that is meant to fix me.

Several teachers expressed feeling frustrated, devalued, and angry about generic PD workshops that handed out books to be read that never were and lecture-based PD that was facilitated by experts who were flown in and had no knowledge of the culture of their schools. Professional development that used PowerPoint slides and offered little engagement made them feel tired and bored, and they believed it hurt the teacher and the classroom more than it helped. P15 reported:

It's an emotional roller coaster for me because I don't have time for collaboration and when I feel stuck, I have a hard time figuring out what to do so I go back to what I know.

For many of the participants, inauthentic PD felt like a matter of facilitation that took up time and hurt the classroom rather than helped. Participants expressed feeling overwhelmed with short or 1-day workshops that were filled with too much information and knowing they would not be able to remember anything, which made them feel like they had wasted their time. P14, a middle school teacher, said:

Too much information leaves me feeling frustrated and helpless, and like I'm in a worse position.

Much like ineffective PD, the data showed barriers to PD can impact a teacher's self-efficacy. Teachers' self-efficacy has gained a key role in educational research because of its implications for teaching effectiveness, instructional practices, and classroom change (Barni et al., 2019). Identifying the impact ineffective PD has on teachers' self-efficacy begins with a

deeper understanding of what teachers consider ineffective PD. The following theme was identified from the responses and the patterns found in emergent phrases: Barriers to professional development exist and come from the kind of professional development chosen, who chooses it, and how it is facilitated.

Eighteen of the 19 participants expressed PD represented value and when administrators allowed only a certain number of days and hours for PD, teachers felt like the administration's decisions did not demonstrate they valued teachers, their time, or the impact of PD. Collectively, the participants wondered aloud how they were expected to see the value in something administrators did not ask about or even question the relevance of the topic. The data showed several barriers: (a) lack of time to learn or attend PD; (b) the timing of the PD; (c) checking off a box for PD; (d) irrelevant topics; outdated resources; (e) 1-day workshops, which limited retention and learning; (f) inauthentic teaching and facilitation; and (g) PD that was scheduled before or after school or was too long.

The responses showed ineffective PD affected the teachers' ability to implement the new knowledge or skills presented in the PD because teachers had "checked out" and were often checking emails or doing other things, especially when the topic was not relevant to the subject taught. The data also showed the participants felt disconnected from PD when it was too long, only used PowerPoint presentations, and lacked collaboration or other active learning. Lastly, the participants believed extending the school year would be better so they could attend effective PD instead of putting up with rushed and, what they believed to be, ineffective PD. P4 stated:

Learning becomes overwhelming when it's a 1-day presentation or very short because I can't remember anything.

P19 stated: Trust is important. So, when admin does not circle back to ask about the PD or to see

how we felt about the topic I feel like they don't care about us or the students.

P3 stated: Flipping through too much information makes me feel frustrated and helpless.

Research Question 3

Research Question 3: How do effective professional development and teacher self-efficacy impact teachers' perceptions of their ability to drive educational change in K–12 schools?

To maintain high-quality teaching and learning, providing continuous learning in the form of PD for teachers is critical (Gul et al., 2021). Quality PD experiences are considered central to the improvement of teaching and learning as well as teacher self-efficacy and teacher motivation, and may even prevent teacher burnout (Trust et al., 2016). Lastly, effective PD can be considered learning that transforms fixed assumptions, expectations, and practices (Martin et al., 2019). The analysis of the data resulted in the following theme, which was developed from the patterns found in the participants' responses and emergent phrases: Teachers understand professional development is an important part of an educator's career that can both positively and negatively impact teachers' and students' self-efficacy and teachers' perceptions about their ability to drive educational change.

The data set identified all 19 participants collectively believed PD was important to their continuous learning as teachers. One pattern that emerged from the participants' responses was the need for personalized and appropriate PD created for the individual teacher's number of years of teaching experience and the need to help teachers become unstuck and excited about teaching again. P5, a teacher with 22 years of experience, said:

Self-efficacy helps us to model persistence.

Effective PD increased the level of self-efficacy, which made them believe they were

comfortable with implementing new instructional practices. P4, a high school foreign language teacher, said:

Hands-on, real-life training, learning how to make instruction easier, encouraging and celebrating teachers' strengths all help students grow, and feel happier, and increase student outcomes.

Seventeen of the 19 participants viewed effective PD as one way to increase their self-efficacy to develop the skills to facilitate PD at their schools so they could assist their peers in continuous learning and development. The participants stated the more effective the PD was in meeting their individual needs, the better they felt about leading PD to make changes not only in their classrooms but within the school. P16 said:

The higher the self-efficacy the higher the job satisfaction because things are like second nature.

P15 had a slightly different view:

Teachers are responsible for teaching and improving their craft and should not rely on administrators or professional development because it is their professional duty.

The concept of self-efficacy as it relates to building relationships, trust, and student-centered classrooms that are supported by a network of people in the school was familiar to 18 of the 19 participants. One significant result about teacher self-efficacy was noted by 15 of the 19 participants: They felt very comfortable adjusting lessons for students, reaching difficult students, enhancing critical thinking, and encouraging creativity. Additionally, the results showed teachers' self-efficacy was influenced by effective PD, which enhanced teachers' perceptions of their ability to help students do well through praise, feedback, and establishing a clear purpose for learning, which resulted in increased student engagement. One participant

explained this sentiment by saying:

Self-efficacy helps us to teach things beyond the classroom, step outside of academics and teach resiliency.

Reliability and Validity

Merriam and Tisdell (2016) wrote a study's reliability and validity depend on the researcher's ethics and the research study's design. Qualitative researchers acknowledge the researcher inevitably influences the research process, and knowledge gained and produced, and seeks to maximize the engagement and interaction with participants in the study (Braun & Clarke, 2013). Member checks were conducted at the end of the data analysis. A draft of the results was emailed to a random selection of participants to determine whether the results were credible and dependable based on the points of view of the participants.

According to Saunders et al. (2018), saturation has achieved widespread acceptance as a principle in qualitative research. Saturation, based on the data that have been collected, indicates further data collection or analysis is unnecessary (Saunders et al., 2018). Braun and Clarke (2013) wrote saturation occurs when the data collection does not generate any new information and the range of perspectives appears to be completely covered. During the focus groups, the point of saturation became evident with Question 6 of the eight questions from the Professional Development Questionnaire as no additional data or categories were emerging from the responses, which were becoming redundant. Additionally, during the analysis of the transcribed focus groups, saturation was achieved when no additional data were found, and similar responses were noted repeatedly.

The applied nature of social science inquiry requires researchers and others to trust in the way the research study was conducted, and in the results and findings (Merriam & Tisdell,

2016). To ensure credibility, dependability, and transferability, the data were corroborated by verifying the data, which included ensuring methodological coherence, sufficient sample size, and a strong understanding of how to conduct the focus groups and thematic analysis (Morse et al., 2002). Bracketing and reflexivity were used to check for biases, potential vested interests, and personal experiences throughout the data collection and analysis by keeping notes in a notebook to gain a clearer picture of the data (Candela, 2019; Weatherford & Maitra, 2019).

Member checks were used to create trustworthiness with the participants and to ensure each participant's lived experience was represented accurately in the transcription of the data (Candela, 2019). Thick descriptions were used when the context of behavior or feeling from participants' responses was needed (Braun & Clarke, 2013). Lastly, triangulation was used for the two data collection instruments: the Teacher Sense of Efficacy Questionnaire and the Professional Development Questionnaire used in the focus groups. The Teacher Sense of Efficacy questionnaire was used to analyze the awareness and understanding of self-efficacy and its impact on teachers' perceptions of their ability to make educational changes in the classrooms.

Chapter Summary

Gul et al. (2021) found to maintain high-quality teaching and learning; PD is essential to continuous learning. Professional development is multidimensional (Matherson & Windle, 2017). To gain the most from PD and impact the teaching and learning of students, teachers must continue to understand how PD affects their self-efficacy, instructional practice, and perceptions about their ability to drive educational change. The research findings and data analysis results explored and answered the research questions from the significant data provided by the 19 participants who conveyed teachers' experiences with effective and ineffective PD, self-efficacy,

and their perceptions about their ability to drive educational change.

In response to the first research question—How does a teacher’s experience with effective professional development impact teachers’ instructional practice in K–12 schools?-the participant responses showed a clear connection between effective PD and teacher instructional practice. Participants were able to provide concrete examples of what they considered effective PD and how that was manifested in the choice of instructional strategies, student engagement, or classroom management.

In response to the second research question—How does ineffective professional development impact teacher self-efficacy in K–12 schools?-the participants had strong conclusions about what made up ineffective PD, how it impacted their self-efficacy, and how it made them feel. The data analysis looked at barriers to effective PD and its impact on educational change, classroom management, student engagement, and how teachers felt about their teaching. Several conclusions can be drawn about ineffective PD and self-efficacy that affect relationships, culture, and willingness to take risks and implement new knowledge. The following words were stated by the participants when asked to describe how they felt about ineffective PD--“frustrated,” “angry,” “devalued,” “apathetic,” “unmotivated,” “bored,” and “irrelevant.” The data showed ineffective PD can negatively impact teachers’ self-efficacy, which can then impact students’ self-efficacy and outcomes.

In response to the third research question—How do effective professional development and teacher self-efficacy impact teachers’ perceptions of their ability to drive educational change in K–12 schools? —the participants’ responses showed effective PD has a positive effect on teachers’ self-efficacy and teachers’ perceptions of their ability to drive educational change. All participants agreed effective PD is important to their continuous learning and goes beyond skill

building. Participants' responses showed a deep understanding of what they considered effective PD and how that increased their self-efficacy, passion, commitment, classroom management, student engagement, and instructional strategies. In addition, the data showed effective PD and increased self-efficacy enhanced collaboration, the confidence to differentiate lessons, design relevant lessons, go outside the curriculum to extend learning, support struggling learners, and reach out to parents as needed.

Lastly, effective PD and self-efficacy were important factors in professional growth and a tool to work with the administrative hierarchy to lead PD and make macro changes within their schools. The data affirmed the connection between effective PD, self-efficacy, and its impact on teachers' perceptions of their ability to drive educational change with real-world examples from the participants. The discussion; findings, interpretations, and conclusions; limitations; and recommendations are presented in the following chapter.

Chapter 5: Discussion and Conclusion

The purpose of the qualitative exploratory case study was to explore how professional development impacted teacher self-efficacy and teachers' perceptions of their ability to drive educational change. Qualitative research supports the broad approach to the study of social phenomena. The robust body of PD research has focused primarily on how to help teachers acquire new skills and improve the quality of education students receive. However, the PD research also suggests teachers who have attended PD workshops have learned something that may improve their instruction or increase student achievement. Data were collected for the study with the intent to inform best practices about how PD is designed and to highlight the importance of understanding how PD can impact teachers' self-efficacy and the perceptions of their ability to make educational changes in their classrooms.

This study was critical because it addressed the knowledge–practice gap identified in the literature on professional development. Furthermore, the responses showed teachers were able to identify a gap between the application of new skills or knowledge and teacher participation in PD. The study further added to the knowledge and understanding of administrators, teachers, and PD creators and facilitators as it included the ideas, opinions, and conclusions about what teachers want PD to be and how their experiences with effective and ineffective PD can impact how they feel about their teaching, jobs, and student outcomes.

The proposal stated 30–35 participants would be involved in the qualitative exploratory case study; however, while more than 75 invitation letters were sent to teachers, only 19 teachers agreed to participate and signed and returned the informed consent form. Recruitment proved to be difficult due to the extraordinary challenges of COVID-19. During the study, data were collected from 19 participants to better understand how teachers believed effective and

ineffective PD impacted their self-efficacy, instructional practice, and ability to make changes in the classroom. The data instruments used were the Teacher Sense of Efficacy Questionnaire and the Professional Development Questionnaire implemented in the 90-minute focus groups. The following research questions guided the qualitative exploratory case study.

Research Question 1: How does a teacher's experience with effective professional development impact teachers' instructional practice in K–12 schools?

Research Question 2: How does ineffective professional development impact teacher self-efficacy in K–12 schools?

Research Question 3: How do effective professional development and teacher self-efficacy impact teachers' perceptions of their ability to drive educational change in K–12 schools?

Findings, Interpretations, and Conclusions

The focus group and questionnaire data captured the teachers' beliefs and values about the impact of effective and ineffective PD on teachers' sense of self-efficacy, instructional practice, and perceptions of their ability to drive educational change. The robust amount of literature about PD supports the notion that continuous learning is vital to high-quality teaching and learning (King, 2016; McChesney & Aldridge, 2018). The data collected affirmed the importance of self-efficacy in student engagement, collaboration among teachers, instruction, educational change, and job satisfaction. In addition, the data indicated teachers had valuable opinions about their prior experiences with PD. Participants revealed they believed both ineffective and effective PD had the potential to influence how they felt about their own instructional practice, which could in turn impact students.

Theory of Self-Efficacy

Self-efficacy is well documented in research literature as an important influence on a cognitive process that plays a vital role in acquiring and retaining new behavior patterns (Bandura, 1977, 1982). Bandura (1977) wrote that an efficacy expectation is a belief one can successfully apply the behaviors needed to produce specific outcomes. Self-efficacy supports the thought a person believes a particular course of action will have definitive results. On the other hand, if the person doubts their ability to implement various activities, their behavior will not change or be influenced (Bandura, 1977).

Barni et al. (2019) found teachers' personal goals and values, which enhance happiness and their sense of efficacy, also guide classroom behaviors. Additionally, teachers' self-efficacy, the beliefs in their ability to effectively handle instruction, assessment, and other jobs, plays a critical role in influencing student achievement and motivation (Barni et al., 2019). Therefore, the conclusion was made that a clear relationship exists between student achievement and teachers' self-efficacy (Sahin-Taskin, 2018).

Gist and Mitchell (1992) wrote self-efficacy refers to beliefs in one's capabilities to enact the motivation, cognitive assets, and actions to meet the task demands. For teachers, self-efficacy is influenced by their views about their abilities, the work they do in the classroom, the work other teachers are doing, and the work environment. Next, self-efficacy is a construct that changes with new information, experiences, and performance assessment (Gist & Mitchell, 1992). Learning new skills and knowledge is the goal of PD. Therefore, one can conclude self-efficacy plays a vital role in teachers' perceptions of their ability to maintain classroom discipline, improve the quality of teaching, and enhance overall job satisfaction (Menon & Azam, 2021; Zee & Koomen, 2016). Third, self-efficacy includes action, an adaptive process adjusted to fit a changing circumstance, and a conscious effort supported by motivation and

performance (Gist & Mitchell, 1992). As teachers experience higher perceived levels of effectiveness, affective states and behaviors, instructional practices, and increased quality of teaching can be linked to greater student performance outcomes (Menon & Azam, 2021). Lastly, self-efficacy can influence teachers' choices, goals, emotions, actions, and satisfaction and can change due to learning, reflection, and feedback (Gist & Mitchell, 1992).

Transformational Leadership Theory

The exploratory case study evaluated whether teacher self-efficacy increased teachers' perceptions of their ability to make educational changes in their classrooms. Menon and Azam (2021) wrote, teacher self-efficacy beliefs can influence educational effectiveness, change, and reform. Transformational leaders motivate and inspire others to perform and achieve objectives beyond the standard (Reza, 2019). Transformational leaders exhibit behaviors that encourage those around them to a higher level of thinking and to go beyond the minimum expectation to higher levels of contextual performance (Reza, 2019). While examples of successful leadership exist, Mesterova et al. (2015) found a significant contributor to their success was the belief in their capabilities to perform their jobs, also known as self-efficacy. Transformational leadership theory supports the notion that teachers are leaders in their classrooms and, as such, must believe in their ability to make educational changes as needed (A. Khan et al., 2016; H. Liu & Li, 2018; Menon & Azam, 2021).

Furthermore, in schools with shared leadership opportunities, teachers with high efficacy will be able to handle different situations and transfer their effectiveness to others, resulting in exceptional group performance (Mesterova et al., 2015). The transformational leadership theory supported the finding that teachers with higher self-efficacy know when and how to drive educational change in their classrooms and schools (Zee & Koomen, 2016). In addition, the

theory supported teachers' desire to advocate for effective PD; lead PD where appropriate; and partake in learning opportunities that would enhance their instruction, job satisfaction, and student outcomes. Lastly, the data showed teachers expressed a desire for their school leaders to be more involved in the individualized selection of PD and follow up regularly. Menon and Azam (2021) found leaders are essential in supporting teachers' confidence and motivation and wrote transformational leaders profoundly impact teachers' perceptions and behavior.

Effective Professional Development

Teachers are one of the most important elements contributing to student learning achievement, and substantial resources are allocated in K–12 schools to PD programs (R. Smith et al., 2020). School leaders and teachers believe teacher knowledge and expertise are essential to PD and necessary conditions for improving teaching and student outcomes. However, for teachers and students to see gains, teachers must access effective PD programs that facilitate the transfer of learned skills or knowledge to instructional practice.

The study's findings showed teachers believed effective PD played an essential role in instruction and teachers' ability to make educational change. It is important to note a plethora of literature exists on effective PD. With that in mind, effective PD can be defined as reflective practice; extended learning over time; active learning; content-focused; collaborative; job-embedded; and providing coaching, support, and feedback (Bates & Morgan, 2018; Darling-Hammond et al., 2017; R. Smith et al., 2020). Teachers' responses indicated effective PD activated prior knowledge, which made them feel more comfortable to differentiate instruction, collaborate with their peers, and share ideas. Furthermore, all 19 participants showed the teachers believed effective PD raised their level of professionalism. When PD is well designed, engaging, and meaningful, teachers can create the same opportunities for learning and development for

their students.

Ineffective Professional Development

Too often in PD, teachers have been asked to partake in workshops, webinars, or conferences in which teachers are passive consumers of one-size-fits-all, prepackaged content. This kind of PD can be described as something that is done to teachers (Meijs et al., 2016). More importantly, Bowers (2018) wrote about the threat of pseudo-activity in PD today, which precludes the opportunity for authentic educational change.

Teachers are affected by PD when they understand the positive correlation between PD and learning. While it is the goal, it cannot be assumed a new behavior is shaped automatically by the effects of PD. Cognition plays a significant role in acquiring and retaining new behavior patterns (Bandura, 1977).

Ineffective PD can impact motivation and efficacy and influence persistence and expectation of achievement. When PD was ineffective, teachers stated they avoided attending workshops or conferences that increased their stress and exceeded their ability to cope with lost time and strong emotions. Ineffective transitory PD experiences can leave lasting effects on a teacher's memory about what to expect from future PD workshops and even discourage active participation (Bandura, 1977). Teachers with prior fears or misconceptions about PD cannot do what they dread. Activity does not always mean change or learning. Therefore, it stands to reason PD of this type has little relation to behavioral modification for instruction or student achievement. Prolonged encounters with PD are more effective than short, distributed workshops that are likely to end before any real change, let alone mastery, has been achieved.

Administrators and teachers believe external PD activities will create gains, new skills, or information simply by attendance, which results in perceived negative discrepancies between the

standard and performance, but the actual change process begins with self-efficacy. Furthermore, R. Smith et al. (2020) found, in just 1 year, 1.5 billion federal government dollars are spent on teacher PD, while the average school district spends \$18,000 per teacher per year on PD. While there is no easy answer or quick fix to the learning gap in PD, Pow and Wong (2017) contended teachers should be given professional autonomy with a soft approach that allows teachers to decide what PD strategies they need. Participants expressed the need for more teacher choices concerning the context, place, and modality of PD.

Self-Efficacy and Effective Professional Development

The data showed a positive relationship between self-efficacy and teachers' ability to identify processes that enhanced their mindset, influenced their actions, and improved their instructional practice. The study found cognitive processes, beliefs, attitudes, and perceptions were crucial to acquiring new behaviors. First, teachers understood self-efficacy allowed them to respond positively to the transitory experience of effective PD, which helped them adjust their performance and make changes. It is worth noting, the data showed the teachers believed self-efficacy had a significant influence on behavior. For instance, the teacher responses showed a profound awareness of the belief that the teacher changes positively impacted teaching and learning.

Motivation, primarily concerned with activation and persistence of behavior, has its roots in cognitive activities such as PD. Therefore, the capacity to obtain similar results in learning can increase the motivation to acquire new skills, implement new knowledge, and make educational changes in the classroom and instructional practice (Bandura, 1977). However, Riordan et al. (2019) found teachers' individual learning experiences too often inadequately support teachers in becoming engaged, curious, and autonomous learners who can close the opportunity and

achievement gaps for students. Hajovsky et al. (2019) wrote about the importance of understanding how much teachers are influenced by various personal, vicarious, emotional, and physiological sources. Teachers often respond to their teaching environment by making decisions that align with their strengths.

Efficacy expectations determine how much effort a person will put into PD; however, just going to PD will not change behavior. R. Smith et al. (2020) found 99% of public-school teachers and 95% of private school teachers participated in PD within 12 months and generally reported low satisfaction with most of their PD experiences. At the same time, while substantial research can be found on what makes PD effective, too many traditional PD experiences continue to be the norm in schools. Can a different outcome for student and teacher learning be expected if schools continue to adhere to a one-size-fits-all model of PD? Bandura (1977) wrote efficacy expectations coupled with performance, assessment, and reflection have led to mastery and mastery expectations influencing performance, which are, in turn, altered by the cumulative effects of one's effort. It is time to ask all school leaders and districts to ensure research-based characteristics of effective PD are present in all experiences selected for teacher development.

Lifelong adult learning provides continued enrichment of knowledge, skills, and competencies in an ever-changing world. While suitable for a teacher's professional growth, continuous learning also enhances personal ability and overall job satisfaction. According to Petrusheva and Popeska (2015), being able to do one's job well and have self-respect contributes to the well-being of the environment in which a teacher works. Researchers have long recognized teacher PD, which refers to teacher learning, how they learn, and how they apply their newly acquired knowledge, is necessary for changing classroom practice.

To summarize, the study's results, supported by Bandura's theory of self-efficacy and

Burns's transformational leadership theory, determined PD is the most widely used tool to enhance and maximize teaching and learning. Student achievement dramatically depends on effective PD and teachers' self-efficacy, which impacts the perception of their ability to drive educational change in their classrooms. More importantly, teachers expressed strong opinions and beliefs about how effective and ineffective PD made them feel and how it impacted their instructional practice, relationships with other teachers and students, and job satisfaction.

Limitations

The case study approach was not without constraints and limitations. Case study research has been criticized or characterized as lacking rigor and providing little basis for generalization (Crowe et al., 2011; Marshall & Rossman, 2016). The vast amount of data collected posed a potential time constraint that impacted the depth of analysis (Yin, 2009). Marshall and Rossman (2016) noted the importance of thinking through the time necessary for the various critical research activities and wrote the number of days allocated to data gathering becomes the metric for estimating the time required for the other jobs. To address the time constraints of data analysis, the number of participants was set at a maximum of 20 (Fugard & Potts, 2015), which allowed enough time for extensive data analysis to be conducted over a 3-week period. Saturation was achieved when the data did not generate any new themes and were noticeably repeated (Braun & Clarke, 2013).

The first limitation of this study is the results may not be transferable to the broader K–12 teacher population due to the small sample size of 19 participants. On the other hand, researchers can use the methodology and theoretical framework to conduct future studies to extend the research on effective and ineffective PD, self-efficacy, and its impact on instructional practice and educational change from the teacher's perspective. The second limitation is the assumption

all 19 participants had a clear definition of how to define *self-efficacy*. Teachers who needed more clarification asked for it during their focus group sessions. Furthermore, teachers who might not have been able to provide an official definition felt comfortable with the discussion and understood what self-efficacy meant, the role it played in their instruction, and their ability to make classroom changes. Another limitation of the study is it did not quantify student outcomes related to increased teacher self-efficacy and effective PD or decreased teacher self-efficacy and ineffective PD.

A future mixed-methods study could extend the research on the impact a teacher's self-efficacy has on student achievement. Next, a limited amount of literature exists on the effect of ineffective PD on teachers' self-efficacy, job satisfaction, and student outcomes. While ineffective PD may not be a popular research topic, Hill (2009) wrote about participation in PD and the lack of results yielded by ineffective programs. More importantly, she wrote about how teachers felt about their PD experiences and made a strong case for fixing PD.

Recommendations

Professional development is widely studied and written about in the literature, yet, despite the extensive body of literature, teacher PD continues to utilize a one-size-fits-all approach and has not shown compelling evidence it will change. This study, on a small scale, demonstrated teachers want to have more of a voice in the kind of PD they attend and when and how they attend it. Furthermore, Bandura's theory of self-efficacy and Burns's transformational leadership theory have provided educators with two frameworks for creating change in teacher practice, behaviors, beliefs, and attitudes. Both theories highlight the need to consider the individual. Gist and Mitchell (1992) listed the following categories in the development of self-efficacy: enactive mastery, vicarious experience, verbal persuasion, and physiological arousal.

Reza (2019) listed the following characteristics to increase self-efficacy: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Further research may determine whether the two theories coupled with the characteristics of effective PD enhance teachers' self-efficacy and instructional practice and drive educational change more effectively.

Lastly, even if teachers know specific actions lead to desired outcomes, such as increased student engagement, motivation, or achievement, the information becomes useless if they do not believe they have the skills or ability to produce these actions (Bandura, 1977; Zee & Koomen, 2016). A more sustainable model of PD should be considered, one that focuses less on the development of skills and strategies that affect student learning and more on the development and support of teachers' beliefs and attitude about their abilities, and whether they are new or veteran teachers. Meesuk et al. (2020) described this model as a focus on teacher self-practice and knowledge seekers who construct new knowledge and skills that pertain to their practices, beliefs, and attitudes to support the notion teachers are experts in their classrooms and schools.

While teacher self-efficacy has been widely studied, little research exists about the relationship between personal values, beliefs, attitudes, and self-efficacy among teachers (Barni et al., 2019). School leaders are responsible for developing teachers to a high standard. Therefore, establishing a method for assessing teachers' sense of efficacy as a nonnegotiable metric can yield valuable data for a school leader, teachers, and students. Tschannen-Moran and Woolfolk Hoy (2001) created surveys, questionnaires, and scoring guides to measure teachers' efficacy. However, it is simply not enough to leave the study of self-efficacy to preservice teacher preparation programs. Because little research, according to Dupuis et al. (2020), has been conducted on the relationship between self-efficacy, PD, and in-service teachers, it is incumbent

on educational leaders to take the lead on this topic in their schools. At the same time, teachers should be provided opportunities to develop their self-efficacy through continued learning, peer teaching, and collective efficacy, three themes identified by Dupuis et al.

Teaching is an art and a science requiring PD based on theories and science for effective professional learning. Therefore, administrators and teachers who select PD must do their best to ensure the research-based characteristics of effective PD are present when choosing a class, webinar, or conference. Next, as part of the PD process, teachers should be accountable for reflecting on what they learned and how the new knowledge will be used. Additionally, allocated time for collaboration and designing lessons and assessments to implement new skills and extend the learning is essential for developing self-efficacy and promoting the value of knowledge.

Implications for Leadership

Superintendents and school leaders would do well to consider investing PD dollars into site-based professional learning communities. Belay et al. (2021) wrote about advancing teachers' human capital as critical for educational quality and the success of the overall educational system. This study showed teachers are eager to facilitate PD, collaborate, observe their peers, and share their instructional expertise. Perhaps it is time for school leaders to engage in action research to determine a way to develop the teachers in their schools using self-efficacy data, PD needs assessments, and teachers' voices. Hargreaves and Fullan (2013) stated, "Professional capital has a fundamental connection to transforming teaching every day, and we have seen examples of this at work in schools and school systems worldwide" (p. 36). As educational needs change and new opportunities for teaching and learning come to light, site-based professional learning may be one way to address the political, societal, and educator needs that arise. It is time to provide teachers with the opportunities to be developed, stretched, and

pushed to where good teaching is effortless, effective, and enjoyable.

The imperative of education is to consider how to best support teachers with the changes that directly impact them. Educational and instructional leaders around the globe should consider Bandura's theory of self-efficacy and Burns' transformational leadership theory as foundational for all changes made to the curriculum, assessment, and PD. The reality is it is not a matter of if but when a change will occur and whether leaders themselves have the self-efficacy and transformational skills necessary to usher in that change.

A robust amount of literature supports PD as the strategy for teachers to be productive for students. In addition, PD is used as a method for teachers to gain knowledge and understanding and apply that knowledge to their practice. A significant body of research identified self-efficacy as worthy of study. Teachers with high self-efficacy experience increased job satisfaction and less stress at work and are better equipped to handle behavior issues that arise (Barni et al., 2019). The qualitative exploratory case study established the foundation for considering self-efficacy in all efforts to improve teacher quality. The key findings of the study can be used to inform varied research about the future of PD (M. Khan & Afridi, 2020). The study found teachers have strong beliefs about how PD impacts their self-efficacy, instruction, and perceptions of their ability to drive educational change in their classrooms.

Conclusion

Teacher PD is an essential method for improving the quality of education. Administrators and PD designers should be able to draw on proven constructs, concepts, and theories as they create workshops, conferences, and webinars for teachers. Furthermore, this study showed teachers have credible opinions and conclusions about the type of PD they believe can increase their self-efficacy, instructional practice, and beliefs in their ability to drive educational change.

Therefore, sustainable, relevant, and effective PD should be the rule rather than the exception.

Copious research about effective PD is available to educators. Educational leaders have a responsibility to ensure the fiscal viability of their schools and should commit equal effort to quality teacher PD and student achievement.

This study purports the importance of self-efficacy should be nonnegotiable when selecting teacher PD and teaching and learning in schools. The results are supported by the participants who have firsthand experience with PD. However, more studies are needed to establish a causal relationship between self-efficacy and PD and their impact on teachers' perceptions of their ability to change their instruction when necessary to increase student achievement.

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Appendix A

Invitation Letter



Date: July 30, 2021

Dear Educator,

I am a doctoral candidate at American College of Education. I am writing to let you know about an opportunity to participate in a dissertation research study. I thank you in advance for considering to be a participant in the study.

Background and purpose of the qualitative exploratory case study:

Teachers are the cornerstone of teaching and learning, and through their positions, skills and abilities can bring about school improvement and educational change. Schools desire and rely on high-quality teachers (Zide and Mokhele, 2018). Professional development is often referred to as the professional learning opportunities that teachers take part in to improve their professional practice and student outcomes (Bowers, 2018). The purpose of the qualitative exploratory case study will be to explore how professional development affects teacher self- efficacy and educational change in classrooms and schoolwide.

Description of participation:

Data will be collected over a three-week period. Participation in the study will involve responding to one questionnaire via Google Forms and one 90-minute remote videoconference via Zoom which will be recorded for data analysis purposes and will be stored on a password-protected flash drive and stored in a locked box. The focus group will engage in a discussion about your experience with professional development and teacher self-efficacy. Each participant

will receive a copy of the transcribed data analysis to review and provide feedback and comments as needed. Your participation in the study will be voluntary. If you wish to withdraw from the research at any time, you may do so by contacting me using the information below.

Inclusion criteria: All participants must have a minimum of one year of participation or experience with teacher professional development in a synchronous, asynchronous, or face-to-face workshop or class, and be employed and teaching in a K-12 school at the time of the study. Both full and part-time teachers without any age restrictions, male or female, or subject/discipline restrictions will be acceptable. If you meet the criteria above, are interested in participating in the study, and would like to be included in the potential participant pool, please use the link below to access, review, and accept the informed consent. Participants will need the following technology requirements: access to a stable Internet, and, if possible, a secure Internet connection. Participants should avoid using shared devices, closing other browsers during the focus group, and a private/quiet location to participate in the focus group.

To address privacy and respect for persons, confidentiality, and anonymity for all participants will be expected of all participants during the focus group and throughout the three-week data collection timeframe.

Results of the Study:

I hope that the findings of the study will be used by principals and school districts to understand the role professional development plays in teacher self-efficacy and educational change. I may publish the results of this study; however, I will not use your name nor share identifiable data you provided. Your information will remain confidential. If you would like additional information about the study, please contact the following:

Candidate Contact Information:

Alice Martinez

Email: [REDACTED]

Phone number: [REDACTED]

Chair Contact Information:

Dissertation Chair: Dr. Phyllis Gerben

E-mail: **phyllis.gerben@ace.edu**

Appendix B

Informed Consent



Candidate Directions: Please use this sample to develop your detailed informed consent keeping in mind the DRR and IRB review this form in alignment with the research methodology chapter for participant activities and protection.

Prospective Research Participant: Read this consent form carefully and ask as many questions as you like before you decide whether you want to participate in this research study. You are free to ask questions at any time before, during, or after you participate in this research.

Project Information

Project Title: An Exploratory Case Study of Professional Development, Teacher Self-Efficacy, and Educational Change

Researcher: Alice Martinez

Organization: American College of Education

Email: [REDACTED]

Telephone: [REDACTED]

Date of IRB Approval:

Please note that this research study has been approved by the American College of Education Institutional Review Board. The IRB approved this study on January 10, 2022. A copy of the approval letter will be provided upon request.

Researcher's Dissertation Chair: Dr. Phyllis Gerben

Organization and Position: Professor at American College of Education

PROFESSIONAL DEVELOPMENT 106

Email: phyllis.gerben@ace.edu

Introduction

I am Alice Martinez, and I am a doctoral candidate/student at American College of Education. I am doing research under the guidance and supervision of my Chair, Dr. Phyllis Gerben. I will give you some information about the project and invite you to be part of this research. Before you decide, you can talk to anyone you feel comfortable with about the research. If you have questions, ask me to stop as we go through the information, and I will explain. If you have questions later, feel free to ask me then.

Purpose of the Research

The purpose of this qualitative exploratory case study will be to identify how professional development (PD) impacts teacher self-efficacy, student learning, and educational change. You are being asked to participate in a research study that will assist with identifying how effective professional development can support teacher learning and improved instructional practices and student achievement. Conducting this qualitative exploratory case study will contribute to an existing body of literature that identifies the importance of teacher professional development.

Research Design and Procedures

The study will use a qualitative methodology and an exploratory case study research design. It will be disseminated to specific participants within [REDACTED] The study will comprise 15-35 participants who will participate in the one focus group and will be asked to respond to one questionnaire. The focus group will be conducted via zoom for participants. Participants will be asked to read their responses to the focus group once they have been transcribed to ensure their validity. The responses to the Teacher Sense of Efficacy Scale Long Form (Tschannen-Moran &

Hoy, 2001). and the participation in the videoconference focus group on Zoom will be done over a two to three-week period.

Participant selection

You are being invited to take part in this research because of your experience as an educator who can contribute much to the exploration and understanding of your beliefs and participation in professional development because of your expertise in implementing new knowledge and having attended some form of PD which meets the criteria for this study.

Participant selection criteria: one year of participation in professional development.

Voluntary Participation

Your participation in this research is entirely voluntary. It is your choice whether to participate.

If you choose not to participate, there will be no punitive repercussions.

Right to Refuse or Withdraw

Participation is voluntary. At any time you wish to end your participation in the research study, you may do so by sending me an email explaining you are opting out of the study. There will be no repercussions for leaving the study.

Procedures

We are inviting you to participate in this research study. If you agree, you will be asked to respond to a questionnaire and participate in a Zoom focus group. The type of questions asked will range from a demographical perspective to direct inquiries about the topic of professional development.

Duration

The first questionnaire portion of the research study will require approximately 20-30 minutes to complete and will be done via Google Forms and attend a videoconference focus group using Zoom. A Doodle will be sent to each participant to identify the best day and time for the majority two weeks before the focus group, Each participant will receive a copy of the transcribed data analysis to review and provide feedback and comments as needed.

Risks

The researcher will ask you to share personal and confidential information, and you may feel uncomfortable talking about some of the topics. You do not have to answer any question or take part in the discussion if you don't wish to do so. You do not have to give any reason for not responding to any question.

Benefits

While there will be no direct financial benefit to you, your participation is likely to help us find out more about the effect of professional development from the teachers' perspective. The potential benefits of this study will aid the improvement of the professional development experience for educators.

Confidentiality

I will not share information about you or anything you say to anyone outside of the research. In addition, I ask that all participants maintain confidentiality during the data collection process to ensure anonymity and protection of the participants. Only first names will be used during the focus group. During the defense of the doctoral dissertation, data collected will be presented to the dissertation committee. The data collected will be kept in a locked file cabinet or encrypted computer file. Any information about you will be coded and will not have a direct correlation, which directly identifies you as the participant. Only I will know what your number is, and I will secure your information on a password-protected computer and a password-protected flash drive

Sharing the Results

At the end of the research study, the results will be available for each participant. It is anticipated to publish the results so other interested people may learn from the research.

Questions About the Study

If you have any questions, you can ask them now or later. If you wish to ask questions later, you may contact me on the Discord group, by email or by calling me. All my contact information can be found above. This research plan has been reviewed and approved by the Institutional Review Board of American College of Education. This is a committee whose role is to make sure research participants are protected from harm. If you wish to ask questions about this group, email IRB@ace.edu.

Please complete the following Certificate of Consent and email a scanned version of the form to: [REDACTED]

If you do not have access to a scanner, please let me know, and I will send you a stamped, addressed envelope for you to mail the form.

Certificate of Consent

I have read the information about this study, or it has been read to me. I acknowledge why I have been asked to be a participant in the research study. I have been provided the opportunity to ask questions about the study, and any questions have been answered to my satisfaction. I certify I am at least 18 years of age. I consent voluntarily to be a participant in this study.

Print or Type Name of Participant: _____

Signature of Participant: _____

Date: _____

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily. A copy of this Consent Form has been provided to the participant. Print or type name of lead researcher: ___Alice Martinez___

Signature of lead researcher: _____

Date: _____

PLEASE KEEP THIS INFORMED CONSENT FORM FOR YOUR RECORDS.

Appendix C**Teacher Sense of Efficacy Questionnaire****Teacher Beliefs Questionnaire**

Directions: Please respond to and explain each of the questions by considering the combination of your current ability, resources, and opportunity to do each of the following in your present position.

What is your gender?

How many years of teaching experience do you have?

What level do you teach? Elementary or High School

What subjects do you teach? (As many as apply)

What grade level(s) do you teach?

How do you help your students think critically and encourage creativity?

What can you do to get students to believe they can do well in school?

What can you do to help students value learning?

How do you use a variety of assessment strategies?

How do you provide appropriate challenges for your very capable students?

How comfortable do you feel about adjusting your lessons to the proper level for individual students?

How much can you do to control disruptive or defiant behavior in the classroom?

What do you do to reach and help the most difficult students?

How much and what can you do to motivate students who show low interest in schoolwork?

How well do you respond to difficult questions from your students?

How much and what can you do to improve the understanding of a student who is failing?

How much and how can you assist families in helping their children do well in school?

How do you believe that self-efficacy impacts your teaching and your ability to implement new knowledge?

What role do you believe self-efficacy plays in your ability to improve student achievement?

(Adapted to create open-ended questions).

Tschannen-Moran, M & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17, 783-805.

Appendix D

Professional Development Questionnaire

Introduction question

Tell us your name, and the grade level you teach.

Transition question:

Tell us how many professional development courses you attend this past year? None 1-2 3-4 5-7

How does self-efficacy impact your instruction and your ability to make educational changes in your classroom? Does it increase your job satisfaction?

What do you think the role of professional development is for teachers and students? Can it increase your self-efficacy and lead to educational change?

3. Think about the kind of PD you participated in over the past 12 months? Describe the ideal learning experience to advance your practice. How did it affect your instruction?

Tell us about a professional development experience you were part of that you considered to be highly effective. What activities did it include?

Now let's talk about a different experience; tell us about a professional development workshop or event that you considered to be ineffective? What was missing? Describe why you felt it was ineffective. How did it make you feel about your teaching?

Think about and describe a time you collaborated with other teachers and offered feedback to one another. How did that help you increase your self-efficacy about implementing what you learned both in a professional development workshop or from your colleagues?

What barriers do you see to implementing new knowledge after participating in professional development?

Would you like to share anything else about professional development, self-efficacy, and educational change?

Appendix E

Subject Matter Experts' Feedback and Revisions

Great questions overall, I think by asking for a story/experience you'll get the answer to multiple questions through asking one. Need to eliminate questions because otherwise people may not spend the time answering.

Introduction question

Tell us your name, the grade level you teach, and why you became a teacher?

Transition question:

Tell us how many professional development courses you attend this past year?

None 1-2 3-4 5-7

1. During the last 12 months what kind of PD, if any, did you participate in? What was your preferred type of PD and why?
2. Thinking of professional development topics that had the greatest impact on your teaching during the last twelve months, what characteristics did they include?
3. Thinking of the professional development activities during the last 12 months, which of the above had a positive impact on your teaching practice. Please explain how and/or why.
What do you think the difference between effective and ineffective professional development is?
4. What should do you think professional development activities or events include?

5. How does ineffective professional development make you feel?

6. How does effective professional development change your teaching practice?

7. If you could make changes to the way professional development is chosen for you, what would those changes be?

8. How much time do you spend collaborating and reflecting on what you learned in professional development with other teachers and sharing innovative lessons?

9. Does that collaboration happen inside or outside of school?

10. Does professional development change your instructional practice in your classroom? Please explain how or why not?

11. Do you think professional development can lead to educational change in the classroom and in schools?

12. What barriers do you see to implementing new knowledge after participating in professional development?

13. What kind of professional development do you think you will need to support emerging technologies and 21st Century learning skills?

14. How does the ideal professional development drive educational change?

15. How does the ideal professional development impact your job satisfaction?

Teacher Self-Efficacy

make this a new question. "What experience(s) led you to becoming a teacher"

Maybe change this to, "Describe your ideal learning experience as an educator to advance your practice." By phrasing it this way, you'll have them share how they like to learn, what's important to them etc and you may be able to eliminate some of the Qs about this topic that come later.

I think you can remove this

Change to, "Share a time where a professional learning experience enhanced your practice." This will allow them to give you a concrete answer through a story

make this a drop down: ex: once a day, once a week etc

dropdown. make as many of these types of Qs checkboxes/dropdowns/sliders etc to make it as easy as possible for people to answer

Professional Development

- ☐ 1. How many professional development courses did you attend this year?

None

1-2

3-4

- ☐ 5-6

2. During the last 12 months, did you participate in any of the following professional development activities?

- ☐ Which of the topics listed people were included in the professional development you participated in?

Aug 12, 9:35 AM

Maybe the word events might work better here?

[Reply](#) [Delete](#)

Aug 12, 9:36 AM

I might add 7 or more as an option as well

[Reply](#) [Delete](#)

PAGE 2

Aug 12, 9:38 AM

You might need to remind respondents to choose all that are applicable.






[Reply](#) [Delete](#)

PAGE 3

Aug 12, 9:39 AM

Maybe ask respondents to choose whichever barriers apply and/or rank these?

[Reply](#) [Delete](#)

DS [Redacted]     

To: Alice Martinez






Please be cautious
This email originated from outside of ACE organization

Hello!

I like this a lot! I think that you will get more participation on it, though, if you give more plain language sentences.

This section would likely not get a lot of meaningful replies because it's not written with simple sentences like the section that follows:

1. Pedagogical competencies in teaching my subject.
2. Knowledge of the curriculum
3. Student assessment practices
4. Student behavior and classroom management practices
5. Approaches to individualized learning
6. Teaching students with special needs
7. Teaching in a multicultural or multilingual setting
8. Including creativity, critical thinking, and problem-solving in your lessons

DS [Redacted]     






To: [Redacted]

Please be cautious
This email originated from outside of ACE organization

as a discussion group, this would work — I would recommend trimming/grouping the questions a bit — I think they will overlap some and then will sound weird to say the same question in a slightly different way later in the conversation — maybe use some keywords to cluster the questions and you can see how there is some overlap

This is tighter!
B

...

DS [Redacted]     

Tue 8/17/2021 12:30 PM
To: Alice Martinez

Please be cautious
This email originated from outside of ACE organization

Feel free to send again!

And my comments about the amount of time people spend on a questionnaire are from my own experiences — I am typically the most willing to help out in filling one out and also the first one to stop as soon as I have to type a whole bunch of stuff.

:-)
I am THAT student.

[Redacted]

...

Teacher Beliefs Questionnaire

1

Please be cautious

This email originated from outside of ACE organization

Please see comments and suggestions below:

- Demographic question - It might be considered non-inclusive if you give male or female as the only options for gender. Perhaps include non-binary or leave it open
- The survey asks great questions, but it might be a little long since they are all open ended. I would suggest grouping or combining similar questions. For example, questions 2 and 10 could be related and it might help the responder organize their thoughts to respond to like questions at the same time. Maybe grouping classroom behavior questions, assessment questions, differentiation questions etc.
- Perhaps the how well questions could be choice questions where they rate very well, well, not well, etc. and offer a section if they would like to explain. This might encourage more focus on the core self efficacy questions
- Questions 3 and 5 are similar and could possibly be combined
- 9 and 14 similar
- 13 and 16 and 17 similar
- I would leave the self efficacy questions as is

Appendix F**Debrief Statement**

Thank you for your participation in the exploratory case study. Your time, expertise, and contribution are greatly appreciated and will contribute to a larger body of knowledge about teacher self-efficacy and professional development. The focus group has concluded. Once the data has been analyzed, a written report of individual responses will be emailed to you. Data analysis may take 3-4 weeks. Please read the responses and provide comments, corrections, or feedback accordingly and email the form back to [REDACTED] Please note important contact information for the research study.

Dissertation Chair: Dr. Phyllis Gerben

E-mail: Phyllis.gerben@ace.edu

Alice Martinez- [REDACTED]

Appendix G**Research Permission Request Letter for School District 1**

Research Permission Request Letter Date: July 21, 2021

[REDACTED]

[REDACTED]

[REDACTED]

My name is Alice Martinez, and I am a doctoral candidate at the American College of Education (ACE) writing to request permission to conduct a qualitative exploratory case study at the sites listed below. Teachers will be asked to participate in one focus group via zoom and complete one questionnaire. This information will be used for my dissertation research related to an exploratory case study on effective professional development, teacher self-efficacy, and educational change. The purpose of the qualitative exploratory case study will be to explore how professional development affects teacher self-efficacy and educational change in classrooms and schoolwide.

Additional information:

Participant numbers: 15-35 teachers who have participated in a minimum of one year or more in professional development.

Potential sites:

[REDACTED]

[REDACTED]

Important Contacts for the study include: Principal Investigator: Alice Martinez E-mail:

[REDACTED]

Phone:

[REDACTED]

Dissertation Chair: Dr. Phyllis Gerben E-mail: Phyllis.gerben@ace.edu

Thank you for your attention to this issue and prompt response. I appreciate your time and consideration of my request.

Regards,

Alice Martinez, MA

(Addendum)

Research Questions:

Name of researcher and academic credentials:

Alice Martinez- Bachelors Degree in Business Management, Masters Degree in Education Distance Education Certificate, and Doctoral Candidate.

Purpose and scope of the project:

The purpose of this qualitative exploratory case study will be to identify how professional development (PD) impacts teacher self-efficacy, student learning, and educational change. Data will be collected using one questionnaire and one focus group. The data will be coded and analyzed to identify patterns about teacher self-efficacy and professional development.

Method of Study or investigation to be used:

Qualitative Exploratory Case Study

The extent of participation expected of students and staff:

The Case Study will include 15-20 teachers who will complete one questionnaire and participate in one videoconferencing focus group via Zoom.

Use to which project will be put.

The findings of the study will provide superintendents, professional development managers, or designers information about how effective or ineffective professional development impacts teacher self-efficacy and educational change.

Benefits to the school(s) or District

The benefit to the school would be to understand what constitutes effective professional development and the role teacher self-efficacy plays in teacher learning and educational change in individual classrooms or even school wide.

Appendix H**Research Permission Request Letter for School District 2**

Date: August 9, 2021

[REDACTED]
[REDACTED]

My name is A [REDACTED] and I am a doctoral candidate at the American College of Education (ACE) writing to request permission to conduct a qualitative exploratory case study at the sites listed below. Teachers will be asked to participate in one focus group via zoom and complete one questionnaire. This information will be used for my dissertation research related to An Exploratory Case Study on Effective Professional Development, Self-Efficacy, and Educational Change. The purpose of the qualitative exploratory case study will be to explore how professional development affects teacher self-efficacy and educational change in classrooms and schoolwide.

Additional information could include:

Participant numbers: 15-35 teachers who have participated for one year or more in professional development.

Potential sites: One elementary school and one high school

Important Contacts for this study include:

Principal Investigator: Alice Martinez

E-mail: [REDACTED]

Phone:
[REDACTED]

Dissertation Chair: Dr. Phyllis Gerben

E-mail: Phyllis.gerben@ace.edu

Thank you for your attention to this issue and prompt response. I appreciate your time and

PROFESSIONAL DEVELOPMENT 117

consideration of my request.

Regards,

Alice Martinez

Name of researcher and academic credentials:

Alice Martinez- Bachelors Degree in Business Management, Masters Degree in Education focus on Adolescent Literacy, Distance Education Certificate, and Doctoral Candidate.

Purpose and scope of the project:

The purpose of this qualitative exploratory case study will be to identify how professional development (PD) impacts teacher self-efficacy, student learning, and educational change. Data will be collected using one questionnaire and one focus group. The data will be coded and analyzed to identify patterns about teacher self-efficacy and professional development.

Method of Study or investigation to be used:

Qualitative Exploratory Case Study

The extent of participation expected of students and staff:

The Case Study will include 15-35 teachers who will complete one questionnaire and participate in one videoconferencing focus group via Zoom.

Use to which project will be put.

The findings of the study will provide superintendents, professional development managers, or designers information about how effective or ineffective professional development impacts teacher self-efficacy and educational change.

Benefits to the school(s) or District

The benefit to the school would be to understand what constitutes effective professional development and the role teacher self-efficacy plays in teacher learning and educational change in individual classrooms or even school wide.

Appendix I**Site Permission Approval Letter for School District 1****Please be cautious**

This email originated from outside of ACE organization

Looks good. Let me reach out to those principals and see what they think!

...

CONFIDENTIAL EMAIL: This e-mail is intended solely for the addressee. The information contained herein is confidential. Any dissemination, distribution or copying of this e-mail, other than by its intended recipient, is strictly prohibited. If you have received this e-mail in error, please notify me immediately and delete this message.



Appendix J

Site Permission Approval Letter for School District 2



August 12, 2021

To Whom It May Concern,

This letter is to confirm that I have received Alice Martinez's Research Permission Request . The [REDACTED] is willing to participate by providing the required teachers for the Qualitative Exploratory Case Study.

If you have any questions regarding this matter, please feel free to contact me at [REDACTED]

Respectfully,

[REDACTED]
[REDACTED]

[REDACTED]

Appendix K**Institutional Review Board Approval Letter**

December 20, 2021

To : Alice Martinez
Phyllis Gerben, Dissertation Committee Chair

From : Institutional Review Board
American College of Education

Re: IRB Approval

"An Exploratory Case Study of Professional Development, Self-Efficacy and Educational Change"

The American College of Education IRB has reviewed your application, proposal, and any related materials. We have determined that your research provides sufficient protection of human subjects.

Your research is therefore approved to proceed. The expiration date for this IRB approval is one year from the date of review completion, December 20, 2022. If you would like to continue your research beyond this point, including data collection and/or analysis of private data, you must submit a renewal request to the IRB.

Candidates are prohibited from collecting data or interacting with participants if they are not actively enrolled in a dissertation sequence course (RES6521, RES6531, RES6541, RES6551, RES6561, RES6302) and under the supervision of their dissertation chair.

Our best to you as you continue your studies.

Sincerely,

Tiffany Hamlett
Chair, Institutional Review Board
American College of Education

Reply all Delete Junk Block ...



Re: Revised Dissertation Proposal

Alice Martinez

From: ACE IRB <IRB@ace.edu>
Sent: Monday, January 10, 2022 11:50 AM
To: Alice Martinez <[REDACTED]> ACE IRB <IRB@ace.edu>
Cc: Phyllis Gerben <phyllis.gerben@ace.edu>
Subject: RE: Revised Dissertation Proposal

Thank you Alice,
You now have full **approval**. Best wishes on the next steps in your dissertation journey.

Tiffany Hamlett, Ph. D.
Chair, Institutional Review Board
American College of Education
101 W Ohio, Suite 1200, Indianapolis, IN 46204
Email: th@ace.edu
ace.edu



From: Alice Martinez <alice.martinez5775@my.ace.edu>
Sent: Friday, January 7, 2022 11:40 PM
To: ACE IRB <IRB@ace.edu>
Subject: Revised Dissertation Proposal

Dr. Hamlett,

Please find the revised document attached to the body of this email.

Sincerely,

Alice

CONFIDENTIAL EMAIL: This e-mail is intended solely for the addressee. The information contained herein is confidential. Any dissemination, distribution or copying of this e-mail, other than by its intended recipient, is strictly prohibited. If you have received this e-mail in error, please notify me immediately and delete this message.

Reply Forward